

Textbook of
Media Production
Grade - IX



National Vocational & Technical Training Commission (NAVTTTC)

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Media Production
Grade – IX



National Vocational and Technical Training Commission
H-9, Islamabad

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PREFACE

This book has been written to meet the requirements of Matric-Tech to train the students in Media Production. This book covers various aspects and kinds of media production including photography, videography, script writing, and video editing. Matric-Tech in media production has been introduced for the first time in Pakistan. This textbook is the first effort at national level to describe all the topics related to media production in one book. A key attempt has been made to make this book interesting and useful. This book covers basic details about media production for students of Matric-Tech. Major objective to write this book is to prepare a technical workforce in the field of Media Production. Any improvements and suggestions for the betterment of this book will be highly acknowledged.

This book covers all the topics to train students in the field of media production. All the topics are explained in a convenient way i.e., understandable to the students of Matric-Tech. The book starts with the basic introduction of media production, the scope of media production, and the concept of health & safety issues at the workplace. Afterward, hands-on knowledge of photography and videography is provided. Later on, scriptwriting for the media production is introduced. Video editing using Adobe After Effects software is also discussed in this book. Lastly, basic concepts related to media production management have been introduced. All chapters include assessments in the form of MCQs, short questions, and long questions.

The book has been designed in such a way that the students not only can get sufficient knowledge about the field of media production but also can get hands-on (practical) knowledge as well. Students have to perform activities and tasks to get hands-on experience about different phases of media production. The sequence of chapters is continuity and is very convenient for the instruction

**Executive Director
National Vocational & Technical Training Commission
(NAVTTTC)**

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CHAPTER 1

INTRODUCTION TO MEDIA PRODUCTION



After completing this chapter, students will be able to:

- define media
- describe media production
- learn about the role of media production in society
- describe different platforms for media production
- describe different software applications of media production.
- understand about history of electronic media (radio, tv channels, social media, etc.)
- know about the transformation of print media
- learn about career opportunities in different industries
- learn about job roles for media production
- know about collaboration of media production with other industries (education, textile, fashion, etc.)

involves engaging the community by means of listening and watching the desired message. The audience is not required to respond immediately through any source.

Mass Media is important in modern cultures. Sociologists refer to this as a ‘mediated culture’ where **media** reflects and creates the culture. The purpose of mass media is to influence the community that is watching it.

1.1.1. Types of Mass Media

The Following are the types of mass media.

1. Traditional Media
2. Print Media
3. Electronic/Broadcasting Media
4. Outdoor Media or Out of Home Media (OOH)
5. Transit Media
6. Digital Media/New Media/Internet

Activity

list few examples of mass media being used in your locality.



Figure 1.2: Mass Media

1.2. Media Production

Media production generally means the making of a motion picture, television show, video, commercial, internet video, or other viewable product provided to viewers via a movie theater or transmitted through broadcast radio wave, cable, satellite, wireless, or internet.

Mass production is about understanding how to produce media for public. Media of any kind needs proper guidance so that the viewer can get the proper message. The meaningfulness of media content will help in building a good society.

The process of production refers to the phases required to complete a media product, from the idea to the final product. The process can be applied to any type of media production including film, video, television, or audio recording.

The phases in each medium may vary according to the demands of the producer and audience as well. Students should be trained on software tools to make them more skillful in the field of media production.

1.1.2. Phases of Media Production

Phases are steps that are used by media producers to produce good content. In media production, one has to go through three phases. Each phase has its sub-phases from idea to creation. Here are the three main phases of media production:

Pre-production: Pre-production includes Planning, scripting & storyboarding, etc. Planning is drafting the rough ideas. The early thoughts you get from a topic need organization. When you organize your initial ideas, then you can start a scripting process. A script requires detailed knowledge of the subject matter. The more knowledgeable you are, the better scripting can be performed. After scripting, a good storyboard is prepared. A storyboard is a minimized version of your plan. It is created using a model or software program. As shown in Figure 1.3 below:



Figure 1.3: Pre-Production Phase

Production: The production phase is about shooting the actual idea that was planned during the pre-production phase. The shooting of your idea requires multiple types of equipment. The people who are involved in a production scene are known as the production crew. As shown in Figure 1.4 below:



Figure 1.4: Production Phase

Post-production: Everything between production and creating the final product. The post-production phase has a lot of people involved. There are editors, sound directors, musicians, production directors, and scriptwriters. This phase is the longest because the product needs to be reviewed well. Figure 1.5 represents the post-production phase.

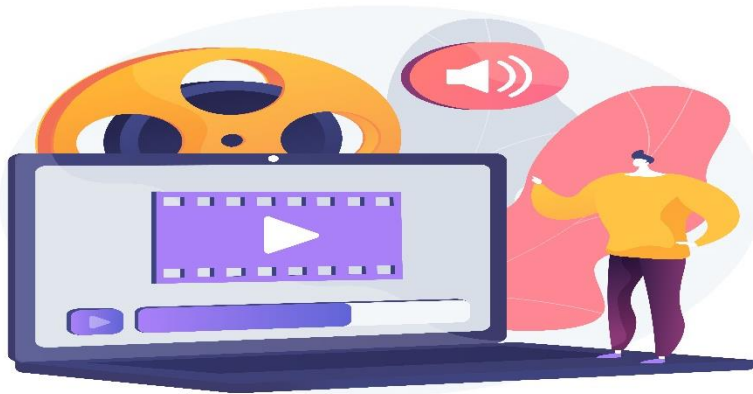


Figure 1.5: Post-Production Phase

Do You Know:
Other notable stages include Financing, Screenplay and Distribution

1.3.Role of Media Production in Society

Media is the most important aspect of our society. People living in a society are interacting with each other every single day. They communicate their ideas, interests, and hobbies with others. Media shapes the thinking patterns of people in a society.

1.3.1 Print Media and Society

Print media has impact on people to think about certain things in ways they never think before. Journalists write columns to highlight problems in society. The power of journalism is really strong in our society. Journalists are experts in particular fields. They have experience of culture of society and also have sufficient knowledge that helps the reader. A good journalist conveys the message without getting harsh. In order to enjoy credibility in the society, a journalist has to be well informed as well as unbiased.

1.3.2 Radio and Society

Radio was invented in 1896 by Guglielmo Marconi. It is a faster medium for conveying long distance messages as compared to print media. Since its invention, Radio has played an important role in spreading knowledge and awareness among the masses. It also became a powerful tool for entertainment purposes. In these roles, Radio has been playing a key role in framing a mindset of the overall society. Radio is also used as a powerful tool for spreading agendas. Advertisement is yet another use of this powerful medium.

Radio has been listened in both urban and rural areas of Pakistan but with the spread of TV and internet, its popularity is becoming on lower scale. Radio programs are designed to fulfill the cultural, religious, social, and political needs of the public. The programs are aired in different regional languages spoken in different parts of Pakistan.

1.3.3 Electronic Media in Society

Television is yet another powerful medium in our society. TV has become a necessity of every home these days. Many people have direct or indirect jobs associated with electronic media. The programs on TV are carefully designed to address the social, cultural, religious or entertainment needs of the society. Religion and culture are usually shown to instill the ideology of the state among the masses. Pakistan Electronic Media Regulatory Authority (PEMRA) is responsible for monitoring and regularization of the content of electronic media in Pakistan.

1.3.4 Media as a Promotion Tool

Media is often used for promotional purposes. Media industry contributes to build the image of Pakistan among the league of nations. People around the world know about a certain place through media.

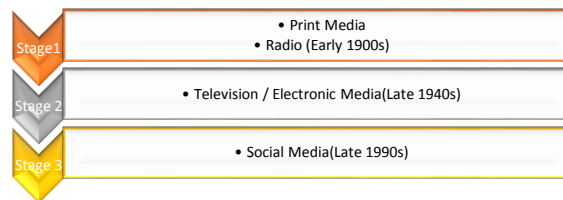
Media is also a powerful tool to spread education in different parts of a state. In the case of disasters, role of electronic media becomes more important. During and after COVID-19, role of electronic media in spreading awareness has boosted a great deal. Government and private organizations run their advertisements to spread awareness in public. Covid-19, awareness and precautions were successfully spread using the TV. People can understand the conveyed messages easily through media.

The polio eradication campaign has also been initiated by the media under government policy. Another example is the dengue fever awareness program that is being run with the help of the media. We can say that media is the pool of all modern information resources.

1.3.5 Social Media and Society

During the past two decades, social media has grown a great deal. A variety of social media platforms are very popular today. These platforms serve the purpose of entertainment, information, connectivity and even business. Communication can be formal or informal. A lot of people can also formally establish businesses on social media.

Social media marketing is an emerging field and contains all the tools that help novices to sell products.



1.3.6 Disadvantages of Media in Society

There are also some disadvantages of media as mentioned below:-

- People can waste their time watching unnecessary programs.
- Sitting for hours may affect viewers' health.
- Media is sometimes used to propagate the false political / religious agenda among the people.
- Some media programs may be inappropriate for different grade and age levels
- All the media news and information may not be reliable and valid. For authentic and reliable information, we must validate its integrity using other authentic resources.

Activity

Group Discussion on role of media production in society and Quote Examples from real life scenario.

A discussion activity for students to share their favourite media type with fellows. Also state some advantages of media in society.

1.4. Platforms for Media Production

A media platform is a service, site, or method that delivers media to an audience. This involves all major types of media, Print media, electronic media, and social media. These all are used to disseminate information among people. Social media nowadays is popular. People have cellular connections, and they can reach information in a fraction of seconds.

1.1.3. Print Media

Newspaper

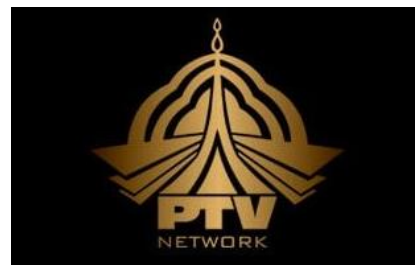
Newspapers have traditionally been an important part of civil society, providing information to citizens. Newspapers convey the news to groups about events and issues. Newspaper is a source of information as well as a place where critiques use it as a tool to highlight injustices of society.

There are almost eighty newspapers being published in Pakistan. The most popular English newspapers are Dawn News and The News etc. The most popular Urdu newspapers are Jang and Nawa e Waqt etc.

1.1.4. Electronic Media

Television

Television is a system for transmitting visual images and audio that are reproduced on screen. It is used to broadcast programs for entertainment, information, education, and religion. The television set has become routine in many households, businesses, and institutions. Television is also a major tool for advertisement.



Some notable categories of TV channels in Pakistan are; entertainment, kids, sports, education, news, and religion. Major news channels in Pakistan are PTV news, Geo news and ARY news etc. Some other channels include QTV, PTV Sports, ATV etc.

Activity

Make lists of at least five TV channels in following categories:
News, Entertainment, Sports, Education and Religion.

1.1.5.Social Media

Social media is revolutionary media. It emerged in the late 1990s when yahoo provided the first communication platform for people. Social media became most popular since the advent of cellular phones.

Social media platforms have many categories. Some are based on functionality like textual messaging, video calling, sending voice notes, and many more.

Some of the examples of social media are stated below:

YouTube is the biggest platform for searching videos of almost any kind. YouTube provides you with the facilities as a search engine. You can also learn educational material from this platform.

Facebook is most famous platform being used to create and interact with family, friends and other communities of our choices. It also has some business-related integrations for small and large businesses.

Instagram is a platform for people who enjoy taking pictures and making an album of their daily life. People usually use Instagram for their daily blog while sharing a picture with some captions.

Twitter is a platform for those who are more aware of current affairs and have an interest in microblogging style. People interact with messages called tweets.

LinkedIn is used by professionals or beginners to grow with other industries' professionals. It also helps beginners in building their career profiles by engaging with professionals.

WhatsApp is a free social software that allows people to connect and interact with family, friends and colleagues by means of text, images or videos.

Pinterest is a famous platform for graphics designers and illustration artists. They use this platform to showcase their artwork and illustrations. The registration on this platform is also free of cost.



1.5. Software Applications for Media Production

Software is used to ease the work of media production. Adobe Creative Cloud (Adobe CC) is the most widely used software, which includes the latest versions of industry-standard software. This suite has other software as well such as Photoshop, Illustrator, InDesign, Premiere Pro, and After Effects etc.

People also practice on a variety of other software including Microsoft Office, Final Cut Pro, Motion, Compressor, Camtasia, Red Giant effects suites, and several other high-quality applications including open-source apps.

The software used in this book is Adobe After Effects which will be discussed in detail in later chapters. Here is a list of some more software that you might find helpful while practicing media production:

Software	Usage
Power Director	To create animation/ multimedia
Protool	To edit sound
Quark Express	To layout page
CorelDraw / Photoshop	Graphic Design
FCP	Audio/ Video Production
WriterDuet	For screenwriting software
PreProCloud	For budgeting and scheduling
WrapBook	Payroll and accounting-related tasks
Sharegrid	For equipment renting on the production side
Frame.io.	For post-production work

1.6. History of Electronic Media

The earliest forms of print media were found in ancient Rome. The citizens were informed via handwritten notes and read loudly in public areas. The invention of the printing press has stopped this manual writing process.

In the mid-1800s, the invention of the telegraph changed monopoly of print media. Suddenly, the information started to be transmitted in a few minutes.

In 1895, the Italian inventor Guglielmo Marconi became the first person to “cut the cord” of electronic communications, sending wireless signals across the Italian countryside Print Newspaper

With the invention and widespread use of television in the mid-20th century, newspaper circulation steadily declined. In the 21st century, more people enjoy internet news sites and other forms of new media which declined further the importance of newspapers.

This adjustment in the role of newspapers as a source of information seems to have had a significant impact on the world. To attract large audiences and maintain offerings, information must be available to a highly diversified audience with a high level of proficiency of scope and neutrality. With the demise of newspapers, news sources have become more complex, providing each audience group to decide whatever they want to hear and what they don't need to hear.

To stay relevant, newspapers are also being published on Internet.

Television and Radio

Radio transmission was transformed towards television, Both of these mediums shape people's lives in much the same way. Either way, you can enjoy the news (and entertainment) at home, with immediacy that newspapers cannot provide.

Television has a powerful socializing effect, providing reference groups while reinforcing social norms, values, and beliefs.

Film

The film industry appeared in 1930s when color and sound were first incorporated into feature films. Much like television, the early films had a great impact by uniting the society. People were used to gather at the cinema to watch the new films. There they used to laugh, cry, and feel other emotions together. Films have diversified topics i.e., historic, documentaries, war, entertainment etc. Hollywood and Bollywood are the two major industries producing films for commercial purposes.

Now a days, People are also watching movies online through Netflix, Hulu, Amazon, and other streaming services.

1.7. Transformation of Print Media

Transformation means to change the shape from one to another. The transformation of print media includes all forms of interactive information exchange. These include social media sites, blogs, podcasts, wikis, and virtual worlds. This list is continuously growing. However, there is no guarantee that the information provided is correct.

1.7.1 Product Advertising

Companies use advertising to sell products to consumers, but the way they reach the audience have been changed. As technology and media allows consumers to bypass traditional advertising methods, advertising also has been changed from traditional ways towards latest technological and more technological methods.

With the invention of remote control, which allows us to skip TV commercials without leaving our seats, traditional television commercials are emerging ‘collapse’, but, the print media are no such exception.

Activity

Give presentations on the topic of History and Transformation of media. Students should also portray the cultural values in their presentation.

1.8. Career Opportunities in different Industries

Understanding each career field will help you choose the right career based on your talent, education, and interests.

Arts, Culture and Entertainment

This professional field is dedicated to enriching the lives of people through the exchange of culture, art, and self-expression. There are formal educational programs in these fields, but these occupations also include talented self-taught individuals. Part of work in this field includes:

- Singer/songwriter
- Music producer
- Art curator
- Animator/video game designer
- Filmmaker
- Graphic designer
- Fashion designer
- Photographer

Communications

The professional communication field is to learn the art of conveying information to different groups of audience. Some positions in this field includes:

- Journalist
- Copywriter
- Communications manager
- Public relations specialist
- Meeting / event planner
- Social media manager
- Brand manager

1.9. Job Roles for Media Production

We learned in the previous section about different roles in diverse industries. The advent of electronic media has generated many roles for individuals and contributed to building the economy. The following are the jobs roles in media production industry:

Marketing, Promotions and Advertising Managers

These media and communications experts work to stimulate public interest in the products or services provided by their employers / client. They plan promotions together with department heads or product managers and often meet with customers to determine their needs.

These professionals conduct market research to understand the needs of consumers and acquire new audiences. Marketing managers usually have a bachelor's degree in communication or marketing and have strong skills in marketing trends, fashion, analytical thinking, social understanding, and creative problem-solving.

Technical Directors

These professionals convey complex messages to a wide audience or user groups in an easy-to-understand manner. They make the abstract information easy to understand by creating easy-to-use operating guides, instruction manuals, white papers, and other documents.

Technical directors also ensure that the content is aligned with the needs of the company's vision. The objectives of a company are fulfilled when a technical director manages things correctly. Most technical directors have a bachelor's degree in a communications-related field, pay attention to details, and have strong writing and critical thinking skills.

Writers and Authors

Writers and authors usually have a bachelor's degree in communications, English, or journalism, as well as some professional experience. These professionals produce compelling and engaging content that usually attracts their audience. Some focus on fiction, while others deal with biographies, scripts, and lengthy articles.

In advertising and marketing, writers create clever scripts to attract new customers or potential customers. In journalism, they conduct investigation reports to inform the public.

Art Directors

The art director is responsible for visual style and imagery for magazines, newspapers, product packaging, and film and television production. They create the overall design and guide others who develop the artwork or design.

Editors

Most editors come from a communications background and use their language skills or journalism background to supervise content production. They can manage a group of writers, usually with professional writing experience. Typical tasks include reviewing published content, verifying sources, and checking facts, as well as formulating policies related to style and tone.

The editor works with the scriptwriters to develop content ideas with broader strategic goals. They need good judgment, strong communication, and management skills.

Reporters, Correspondents, and Broadcast News Analyst

These reporters keep the public informed of current affairs. They study topics of general interest, analyze reports, and investigate stories based on editorial insights and clues. Reporters conduct interviews and communicate their work through news articles and commentary articles.

Some of these professionals work in print media or broadcast journalism, but many others write articles for online media platforms. They need a relevant bachelor's degree, excellent communication skills, and some professional experience.

Sound Technicians

Sound technicians support other media professionals, such as journalists and news anchors, in ensuring that the broadcast maintains consistent quality. They operate audio equipment, record broadcasts, and monitor production behind the scenes. In post-production, these technicians synchronize audio and visual elements and convert recordings for public use.

Interpreters and Translators

Interpreters and translators convert information between languages for clear communication channels. These professionals can provide written translation or oral interpretation in real-time, whether in oral language or sign language. Interpreters and translators must be proficient in at least two languages and be able to switch freely between the two languages. They usually have a bachelor's degree and strong listening skills and cultural sensitivity.

Graphic Designers

Graphic designers create visual aids in magazines, websites, advertisements, and other channels manually or using the software. These professionals design layouts, create original illustrations and images and present their work to current or potential clients. Some graphic designers focus on certain forms of media or work with certain types of clients. These tech-savvy people need relevant bachelor's degrees and artistic design skills.

1.10. Role of Media Production in Education, Fashion and Textile

Role of Media in Education

The role of media in education is important as it paves the way for students to learn easily. Students have ample resources to get themselves equipped with new skills.

A platform for learning on television can be seen in E-Schools by the government of Pakistan. The TV channel runs content from grade 1 to grade 12 according to pre-scheduled programs. Another initiative is a virtual university whose channel broadcasts its university-level content. Some universities have radio channels for students to learn about radio broadcasting.

Introducing multi-media in education has improved pedagogical ways. An instructor can make interactive slides and convey more knowledge than it was done in past. Students get attracted and listen to more visuals as they see through PowerPoint presentations.

Role of Media in Fashion

Media production has also revolutionized the fashion industry as it was observed earlier. People had less exposure to fashion and they kept to buy more from local traditional markets. With penetration of media in fashion industry, the industry got boom resulting huge revenues throughout the world. People can now have access to more brands and fashion designers via media. They know whose work has more value and which brand has more fashion sense.

Instagram and Pinterest both have imagery galleries, it mostly conveys the messages through images taken by users. Such platforms are being utilized in promoting the fashion industry and thus opening gates for further job opportunities.

Role of Media in Textile

The textile industry of Pakistan has a significant place in Asia. Textile have always been considered the main export of Pakistan. Many brands that come under the banner of fashion started their business with textile industries.

Since media support these businesses and allowed many business owners to sponsor in their media groups. We are in habit of watching textile-based advertisements either on TV, billboards, or on internet. In the past, when the only media for advertisement purposes was newspapers and magazines, covers of those mostly contain the textile related advertisements.

Key Points

- Media has defined the way of communication between a group of people.
- Media production is the process of producing videos and films with some pre-defined stages.
- The three main types of media include print media, electronic media, and social media.
- The media history starts with print media.
- Social media is another powerful and impressive tool for expressing opinions.
- Everything that is heard on media may not always be true.
- Media jobs require talent and experience.

Notes for Teacher:

- Brief students that why Media Production is a valuable profession
- Ask students about their interest from various jobs roles of media production
- Discuss with students about future of various types of media

EXERCISE

A. Select the Most appropriate option

1. How many newspapers are published in Pakistan?
a) 80 b) 34 c) 56 d) 98
2. How many sports channels do we have in Pakistan?
a) 2 B) 3 c) 4 d) 5
3. Media is not
a) Communication b) Current Affairs c) TV d) Internet
4. Media is
a) Plural of medium b) Communication c) Transportation d) Sharing

5. Who invented paper?
a) China b) Japan c) Korea d) Maldives

6. Social Media app **does not** include the one
a) Facebook b) Twitter c) LinkedIn d) Ms-Word

7. Identify a Religious Channel.
a) Madni Channel b) CNN c) Geo News d) 92 News

8. The role of media in society is
a) To educate society b) provide entertainment c) To enjoy d) To make dispute

B. Write short answers to the following questions

1. Define media and write about media production.
2. Describe any two platforms of media with elaboration.
3. People seem to share a lot of things on their social media. What would you do if you have the liberty to post anything on your social media?
4. Who published the first newspaper?
5. List down channels of PTV.
6. How many categories do each channel have?
7. Define digital media.
8. How false news can be identified.

C. Write detailed answers to the following questions

1. Write about the transformation of media in your own words.
2. Why is media considered false? Do you quote any example in this context?
3. List any three job roles that you find interesting. Give a reason for choosing those roles.
4. Write down the advantages and disadvantages of social media.
5. Write a detailed note on the role of media in education.
6. List down five national channels and explain what part these channels play in society.

CHAPTER 2

HEALTH, SAFETY AND ENVIRONMENT



After completing this chapter, student will be able to:

- Define Health, Safety & Environment.
- Know basic principles of safety.
- Understand standard operating procedures regarding health and safety.
- Apply basic rules of health & safety in workplace environment.
- Understand the types of hazards and preventive measures.
- Adopt basic certification of safety.
- Learn awareness on physically transmitted diseases.
- Learn sanitization process for office safety.
- Know about Ventilation and illumination.
- Know about importance of personal hygiene.
- Learn about importance of personal protective equipment (PPE).
- Know about use of personal protective equipment (PPE).
- Know about fire triangle.
- Identify types of fires and fire extinguishers.
- Learn correct evacuation/emergency procedures.
- Identify and report hazards to concerned.

2.1. Health, Safety and Environment

Health, safety and environment belongs to the department within the company responsible for protecting basic health & safety, thus protecting the environment. Safety is the responsibility of everyone in every industry and so in media production industry.



As an employer or a builder, the builder / contractor is responsible for taking the required precautions to protect the health and guarantee the safety for all workers related to production. Health, Safety and Environment (abbreviated as HSE) is a collection of tools, systems, and processes designed to prevent health of employees against any injury / problems as well as to protect the environment.

Employees are responsible for working safely and complying with applicable health and safety rules. The main goal of having a health, safety and environmental management system is to protect workers from accidents. The occurrence of accidents may result in injury or even death of workforce in industries. With the passage of time, workers began to demand greater safety at workplace and successfully forced the governments and employers to think about their valid demands and to take action. The Governments and other regulatory bodies made legislations requiring employers to ensure the health and safety of their employees at the workplace and also to pay health insurance and other compensations for injuries, deaths and illnesses caused by work activities.

Need of HSE

Thousands of deaths have been reported each year in accidents at workplace and over millions of people get injured. Over two million suffer illnesses caused by, or made worse by, their work. So, preventing employees from such accidents and ill health caused by work should be a key priority of every employer.

Purpose and Importance

Providing health & safety information and training helps you to:

- Ensure you or your employees are not injured or made ill by the work they do

- Develop a positive health & safety culture at workplace which will create a fearless environment for workers
- Find out how you could monitor and manage health and safety better
- Meet your legal obligation to protect the health & safety of your employees.

2.2.Principles of Safety

In organizations where policies have been implemented to conduct all business activities in a responsible manner, assures the health, safety and security of people and thus taking care of the environment by compliance with all applicable legal & regulatory requirements.

2.3.Standard Operating Procedures regarding HSE

Standard Operating Procedures (SOPs) is a set of instructions that explains how to perform work safely. It involves hazardous (Electrical, mechanical, indoor, outdoor, office, and different workplace) equipment, or risky operations. Safe operating procedures are a set of safe work practices and step-by-step instructions required to identify and control hazards in the workplace to help ensuring safety of employees.



2.4.Rules of Health & Safety

In many cases, workplace accidents are preventable. Here are ten rules for workplace safety that you can implement at the workplace.

Responsibility

Everyone has a responsibility of making sure a safe workplace. Your personal safety is your responsibility. When everyone takes charge of their own safety, it creates a safe place for all employees.

Observe Dress Code

Keeping arms and legs covered properly, avoiding extra jewelry, and wearing closed shoes in workplace minimizes common workplace injuries and accidents. We always wear personal protective equipment (PPE), and inspect it for damage before and after use, so that it can be repaired or replaced promptly.

Keep Work Areas Clean

At the beginning of work and end of each shift, clear dustbin, pick up PPE and cables, and put office supplies away. Collect any materials that you will need later to complete your work. Clean your office regularly. Avoid eating habits in any workplace.



Follow Rules

Keep following rules & regulations of the industrial workplace and do not take unnecessary risks.

Report Workplace Accidents or Safety Incidents.

If some incident happens, report it to your immediate supervisor so that relevant actions can be taken. These can add a taking care for an injured worker, fixing the issue that caused the injury.

Follow Emergency Procedures

All workers should be prepared (well trained) and follow crisis methodology in response to the incident. This helps security teams and crisis administrators to deal with the circumstances and decide the most appropriate way of managing it.

Lift, bend, and stretch with care to avoid injury.

Musculoskeletal issues caused by when picking up boxes or heavy objects are a typical reason for wounds. In case you are uncertain of the most ideal way of lifting, twist, or stretch at work, consult your director or organization security official.

Don't use irrelevant tools

Apparatuses or hardware might appear to be instinctive; it is ideal to keep away from objects except if you are prepared to do it in correct way. This isn't just for your safety, but, also for the security of people around you.

Avoid Drugs/Alcohol at Work.

Using drugs and alcohol can impact your work capacity badly because these can weaken the ability of your judgments, physical and mental approach. Thus, the chances of any incident at workplace are high.

Take Breaks

Proper rest helps employees maintain their focus on their work, which contributes to workplace safety. In specific industries, break time can be determined by the supervisors according to the nature of the work.

2.5.Types of Hazards and Preventive Measure

2.5.1. Hazard

A hazard is a source or circumstance that can cause individual injury, instrumental equipment, medical issues, or property damage. A mishap is a circumstance that can cause an unwise risk.



2.5.2. Types of Hazards

There are many types of hazards that may cause any harm to workers, equipment, building other another thing. Below are the common types of hazards.



2.5.3. Security Hazards

Security hazards are the most common workplace risks.

They include:

- spills like cords, rough edges of floor mats, etc.
- falls like working from heights, ladders, roofs, etc.
- Unsafe and moving machinery parts that a worker can accidentally touch.
- Electrical hazards like ragged cords, missing ground pins, improper wiring Confined spaces, etc.



Electrical Hazards

The main hazards of working with electricity are:

- Electric shock and burns from contact with live parts

- Injury from exposure to arcing, fire from faulty electrical equipment or installations
- Explosion caused by unsuitable electrical apparatus or static electricity igniting flammable vapors or dusts, for example in a spray paint booth
- Electric shocks can also lead to other types of injury, for example by causing a fall from ladders or scaffolds etc.



Preventive Measures

You must ensure that an assessment has been made for any electrical hazards, which covers:

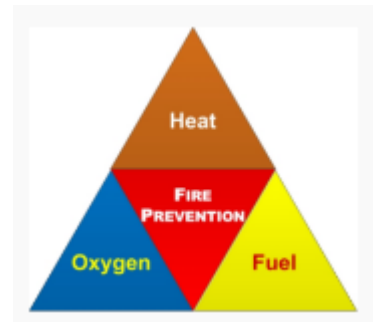
- Who could be harmed by these?
- How the level of risk has been established?
- The precautions taken to control that risk
- The risk assessment should take into consideration the type of electrical equipment used, the way in which it is used and the environment that it is used in.

You must make sure that the electrical installation and the electrical equipment is:

- Suitable for its intended use and the conditions in which it is operated
- Only used for its intended purpose

Fire Hazards

A fire needs three elements - heat, oxygen and fuel. Without heat, oxygen and fuel a fire will not start or spread. A key strategy to prevent fire is to remove one or more sources of heat, oxygen or fuel. The risk assessment should include details on all three elements to minimize the risk of a fire starting / spreading. Emergency procedures must also be in place and



practiced to ensure safe evacuation in the event of a fire. All workplaces should have arrangements for detecting fire. IS 3218 gives a basis for assessing what type of detection system will be appropriate for a workplace and will also give guidance of its installation. Smoke detectors are generally installed for this purpose.

Slip, Trips and Falls Hazards

Trips and falls for any reasons (uneven ground, wet ground, loose cables, etc.) can easily become the most common cause of injuries on the job. Workers must pay large sums of money to cover the cost of all these accidents. If safety regulations are followed correctly, most of these accidents can be avoided. Employers and workplaces both are responsible for ensuring that workforce is working in a safe environment.



2.6. Certification for safety

Employer must encourage the employees to get knowledge and get standard certifications related to work safety so that everyone can work safely throughout their careers. Below are some certifications.

- **Certified Safety Professional (CSP), Board of Certified Safety Professionals (BCSP)**

This is the utmost license among safety experts — and for good reason. On average, Certified Safety Specialists are more likely to get hired, can get attractive salaries, and receive more upgrades and management openings than their peers.

- **Certified Industrial Hygienist (CIH), American Board of Industrial Hygiene (AIBH)**

If you're thinking to advance your profession in health and safety, the Certified Industrial Hygienist (CIH) certification is an outstanding option. The CIH certification is a universally accepted qualification that validates your assurance to shielding the health and safety of workers and the public.

- **Certified Safety and Health Manager (CSHM), Institute of Hazardous Materials Management (IHMM)**

Another famous certification among safety experts is the CSHM. This certification emphasizes both technical knowledge as well as business administration skills. Professionals with this certificate are in high demand. According to IHMM, this certification is ideal for people who

are seeking executive positions in their organizations, such as manufacturing, construction, healthcare, education, and more.

- **IOSH Level 3 Certificate, Institute of Occupational Safety and Health (IOSH)**

If you've operated in the field of safety and health even for a while, you've likely seen the IOSH title in your colleagues' email signature or on their visiting card. IOSH is the world's largest affiliation body for safety and health specialists, and their certifications are commonly recognized. IOSH's Level 3 Certificate is a well-accepted qualification that delivers an understanding of safety and health in a business framework.

2.7.Awareness on Physically Transmitted Diseases

There are numerous irresistible infections that might affect the wellbeing and efficiency of the workforce. Microorganisms can be found at almost every workplace. Infectious disease can cause great hazards in working environment.

Do You Know:
Some types of bacteria Many live in your body without causing mischief, and some might even assist you stay healthy.

Infectious hazards are also known as biohazards. They include:

- Blood and other body fluids
- Fungi/mold
- Bacteria and viruses
- Plants
- Insect bites
- Animal and bird droppings

Common Diseases Spread at work

Although it would be impossible to discuss every infectious disease that could potentially affect individuals in the workplace. Some of these infectious diseases include:



Tuberculosis (TB)

TB is spread through the air from one person to another. Tuberculosis (TB) is caused by bacteria *Mycobacterium tuberculosis* that most often affect the lungs. workers nearby may become infected by breathing in the air that contains TB bacteria.

Spread of drops

During sneezing and coughing, you can taint someone else through droplets. This type of transmission happens immediately. The droplets may be breathed in by people who are nearby and polluted an object or surface. Examples of diseases spread by droplet.

- Common Cold.
- influenza (the flu)
- COVID-19.

Through Contact with Skin

Some infections are transmitted directly if the skin is exposed. Infections can be spread when the skin touches with a contaminated object.

2.8.Sanitization process for office safety

Keeping a clean workplace helps us from spread of diseases at workplaces. Microbes can be developed on surfaces that has not been sanitized. Since the work surface looks perfect doesn't mean it's sterile and germs free.

2.8.1Cleaning Procedure and Schedules

Normally soap and other basic level cleaning materials are used only in cleaning process of the workplace but actually it also need to be disinfected. Simple cleaning will remove any dirt or grease from surface, but it will not necessarily kill any bacteria or other germs. Only proper disinfectants can kill these harmful germs and can ensure that the area can safely be used to work.

2.9. Ventilation

Ventilation is the process of removing contaminated air from workplace and injecting clean air. The general purpose of ventilation in buildings is to provide healthy air for breathing.

Air Conditioning

Air conditioning is a system that is used to maintain the temperature in an interior space by eliminating the heat and humidity from the workplace. Our air conditioner quickly converts gas to liquid and vice versa using chemicals that remove hot air from indoor place. Broader speaking, an air conditioning system controls the temperature, humidity, and air quality in indoor spaces.

2.10. Importance of Personal hygiene

Effective personal hygiene is very important. Develop good personal hygiene habits to help maintain good health and hygiene. It needs to keep your hands, head and body clean to forestall the spread of germs, gases and chemicals etc. Your own cleanliness is useful for your own wellbeing and furthermore affect the lives of everyone around you.



In order to reduce the risk of infection by biological agents follow good occupational hygiene practices:

- Wash hands regularly and especially before eating, drinking or smoking.
- Wash any cuts and grazes immediately with soap and running water.
- Cover any existing cuts, abrasions or breaks in the skin with waterproof dressings and/or gloves.

- Avoid hand to mouth/eye contact.
- Take rest breaks, including eating meals and taking drinks, away from potentially contaminated work areas.

Hygienic Clothes

Dirt and bacteria can also surface on clothes. As part of your personal hygiene habits, it is important to take care of your clothes through regular washing and changing especially if you or your family are unwell. To ensure that your clothes are hygienic and clean, use disinfectant to your clothes to kill any bacteria.



2.11. Personal Protective Equipment

It's the equipment that shields laborer from wellbeing and dangers at work environment. This includes defensive clothing, uniform, shoes, cap, goggles, gloves or other dress to protect the wearer's body from injury or disease.

The importance of PPE

PPE looks different in various environments. Medical staff may wear masks and protective clothing, face shields and outfits, construction workers may wear helmets and work boots, whereas electric workers use insulated gloves etc. PPE is similarly significant in all settings, since it limits the danger of workers becoming genuinely harmed because of a risk.



As a front-line worker in any sector, your safety is supreme when working on-sites. PPE is significant on the grounds that it sets you up for any wellbeing and dangers and furnishes you with extra insurance in case of a mishap or catastrophic event.

List of Personal protective Equipment

- Gloves
- Face Shields
- Goggles and glasses
- Masks
- respirators
- Eye Protection
- Hard Hats
- Gowns
- Hearing protection device

Safety Measure

Following are the safety measures related to Personal Protection at work: -

- Physically eliminate the hazard from the workplace. If dangerous Equipment causes multiple injuries, the manager should remove it.
- Replace the hazards with safer alternatives. If a worker on a construction site is injured by using a specific tool, the manager should replace the tool with a safer and more effective tool.
- Ensure that workers have the personal protective equipment needed to complete the job without being injured.

However, use of PPE is equally important in all environments because it minimizes the risk of fatal injuries to employees due to danger.

Training of Using PPE

Employers should ensure that employees who use PPE understand why it is required, when to utilize it, and to whom to report if the PPE is damaged.

Employer should prepare and train workers on the best way to utilize PPE accurately and guarantee they do as such. Manager and supervisors should monitor and guarantee that workers realize how to utilize PPE accurately. It is significant that worker should consistently wear PPE when the workplace is dangerous. Employers should not allow exemptions for jobs that just take a few minutes. Employers should routinely check whether PPE is fit to be utilized.

2.12. Using PPE

The term personal protective equipment (PPE) refers to a vast group of products e.g., safety helmets, safety footwear and harnesses, eye protection, gloves, high-visibility clothing, etc. designed with the aim to protect users against low, medium and high-level hazards.

- Head hazard: all kinds of helmets, safety helmets and anti-collision caps are suitable personal protective equipment to avoid head hazards.
- Eye hazards: The PPE series includes safety glasses, goggles, face shields and face shields.
- Breathing hazards: breathing systems / devices and air-supplied helmets are some of the PPE options for breathing hazards.
- Physical hazards: typical work clothes, jumpsuits and specially designed protective clothing can be selected as effective PPE.
- Foot and leg hazards: preventive measures can be taken by using safety boots / shoes, waterproof midsoles, leggings, etc.
- Hand and arm hazards: Potential PPE include gloves, hand guards, wristbands, armbands, etc.
- Masks should be used as part of a comprehensive do it all. which includes maintaining physical distance, avoiding crowded, closed and close contact environments, good ventilation, washing hands, and covering sneezes and coughs.



2.13. Fire Triangle

The fire triangle's three sides represent the three components of fire hotness, fuel and oxidization. Each side of the triangle represent one of three parts expected to have a fire, fuel and hotness. Fire

is a synthetic response and without one of these parts, fire can't exist. The air that encompasses us contains around 21% oxygen.



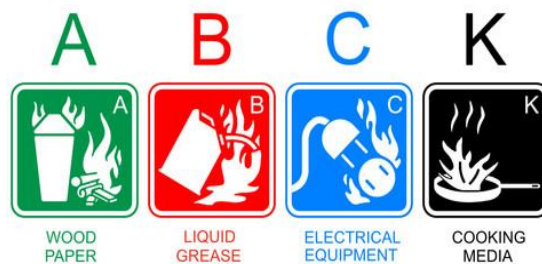
Types of Fire

Fire extinguishers are designed to specific types of fire. There are six different classes of fire and several different types of fire extinguishers.

Classes of Fire

- Class A fires involving strong materials like wood, paper or materials.
- Class B fires involving combustible fluids like petroleum, oil and diesel.
- Class C fires involving gases.
- Class D fires involving metals.
- Class E fires including live electrical contraption.
- Class F fires including cooking oils, for example, in extreme fat fryers.

Types of Fire Extinguishers



Water Extinguishers

Water extinguishers are one of the most effective tools to fight against Class A flames produced by strong materials like paper, wood and other materials. Water fire extinguishers have a red mark.

There are four distinct kinds of water extinguishers water jet, water splash, water with added substances and water fog or haze.



- **Water Jet Extinguishers** work by splashing a jet of water at the consuming materials, cooling them and forestalling re-start. They should not be utilized on live electrical equipment.
- **Water Sprinkle** dousers utilize an exceptionally fine splash of water drops; every bead is encircled via air which is non-conductive.
- Water with added substance works by adding the synthetic compounds to the water implies that a more modest extinguishers can deliver a similar fire rating as a bigger douser.
- **Water haze or dimness**, dousers apply water as fog, or mist, the beads are a lot more modest than those from the water splash extinguishers

Foam Extinguishers

Foam extinguishers can be utilized on Class A and B fires. They are more qualified to smothering fluid flames like fuel or diesel and are more flexible than water stream extinguishers since they can likewise be utilized on solids like wood and paper. They are not reasonable for use on free streaming fluid flames. Foam extinguishers have a cream-hued mark.

Powder Extinguishers

Powder extinguishers are a decent multipurpose fire douser in light of the fact that they can be utilized on Class A, B, and C flames. They can likewise be utilized on flames including electrical equipment, but they don't cool the fire so it can walk out on. Powder fire extinguishers can likewise make a deficiency of visibility and can make respiratory issues. Powder fire extinguishers have a blue mark.

Carbon dioxide extinguishers (CO₂)

CO₂ fire douers are great for places with numerous electrical gears, for example, workplaces or server rooms, since they can be securely used to smother fires including electrical equipment. Dissimilar to froth fire quenchers, carbon dioxide fire douers don't leave any buildup. They can likewise be utilized in Class B fires, which are fires including flammable fluids like paraffin o fuel. The functioning guideline of a carbon dioxide fire douser is to smother the fire and remove the air supply. Carbon dioxide fire extinguishers (CO₂) have a dark name.

Wet chemical extinguishers

Wet compound fire douers are appropriate for Class F fires including cooking oils and fats, like fat, olive oil, sunflower oil, corn oil, and spread. Whenever utilized appropriately they are extremely viable. Wet synthetic compounds rapidly extinguish the fire, cool the consuming oil and artificially respond, framing a cleanser like arrangement, fixing the surface and forestalling restart. Wet compound fire extinguisher has a yellow mark.



Fire blankets

Fire covers are mostly utilized for hot oil fires, for example, browning skillet or little profound singing container. They can likewise be utilized for individuals whose garments are on fire. They used by extinguishing blazes, keeping oxygen from entering and smothering it.

2.14. Evacuation / Emergency Procedures

Set out directions for what should be done in case of a crisis. plainly state what is to occur in a crisis and who is answerable for each step at the help. Before an emergency occurs, determine the exit closest to your location, the safest route, and alternate exits. Leave the nearby area, but it is still available for emergency rescuers. If time permits during the evacuation, please ensure that your workplace is safe and take away personal belongings such as keys, wallets, medicines and glasses. If there is a fire or other dangerous situation, please evacuate immediately and leave your personal belongings.

Evacuation of a Building

- Walk fast but do not run.
- Do not use lift.
- Gather outside at your assigned get together region, where your administrator will consider for all staff.
- If you can't get back to your building, hang tight for guidelines from Public Safety, your building supervisor or any other person in control.



When you hear fire alarm

- Pull the closest alarm (situated at any exit)
- Clear the building and continue to a get together across the road and away from the building
- Keep access ways and streets clear.
- Anticipate directions from Campus Security.
- At the point when the all-clear signal is given, reappear the building through the main door.
- Report the fire.

Mobility Impairment:

Unless authorized by the police or firefighters, do not use the elevator when the building's fire alarm is sounding. If you or the person with you cannot be evacuated, ask someone to tell emergency responders your identity and location, and you or the person with you cannot be evacuated due to a disability.

If smoke is detected and you cannot safely reach the emergency exit landing site, move to a room with windows and close the door. Go to the window and open it. Get the attention of someone below by wavy arm or colorful fabric.

Deafness or Hearing Impairment

Numerous buildings are furnished with visual signals for alarms. If someone does not realize that the alert is sounding, please draw the person's attention through eye contact, and touch it if necessary. Gestures may be helpful, but if the person does not read lips, if it's not too much trouble, be ready to compose a short statement.

2.15. Hazard identification & reporting

Hazard identification is the procedure of noticing possible causes of harm or damage from doing a job task in a specific work area. Detecting workplace hazards is critical to implement controls that will help safeguard the safety of workers and other stakeholders. Hazard identification is part of a hazard assessment, or assessing risks related with a hazard and taking action to remove it or reduce risks involved with it.

Hazard identification assesses potential risks (e.g. noise, manual handling, excavation, etc.) observed within the work premises.

Hazard Assessment

A hazard assessment reduces the probability of workplace accidents from occurring and ensures the safety of your employees. Easily perform (fire risk) assessments by following the steps below:

Look – Walk around the facility and look for out-of-place items. Identify potential or existing hazards. Learn how to identify common workplace hazards.

Think – Evaluate identified hazards and determine their underlying causes. Set appropriate controls to mitigate the likelihood of recurrence.

Act – Implement corrective actions or controls.

Monitor – Perform regular inspections and reviews to ensure that standard operating procedures and safety control measures are followed.

Hazard Prevention and Reporting

Below are the important points related to prevention and reporting:

- If anybody at workplace notices any kind of potential hazard, he / she should immediately report to the supervisor / manger. The reporting could be written, verbal or any means that is possible that time.
- Describe the nature of work and select the protective equipment available and needed to protect the employees from harm. Proceed with identifying the hazards present.
- Capture photo evidence of the situation or object that may cause serious problems to workers.
- Assign an action to a supervisor for review and immediate resolution.
- State observations and rate the overall assessment if the work site is safe or not.

Key Points

- Hygiene is important in the workplace because it contributes to a healthy workforce.
- HSE is a collection of tools, systems and processes designed to prevent health problems and injuries for our employees and to protect the environment
- Although medical staff may wear masks and protective clothing, construction workers may wear helmets and work boots.
- Safe operating procedures are a set of safe work practices and step-by-step instructions required to control identified hazards in the workplace to help ensure employee safety
- Replace the hazards with safer alternatives. If a worker on a construction site is injured by using a specific tool, the manager should replace the tool with a safer one.

- Fire triangle's three sides represent the three components of fire hotness, fuel and oxidization.
- Class A fires including strong materials like wood, paper or materials.
- Powder extinguishers are a decent multipurpose fire douser in light of the fact that they can be utilized on Class A, B, and C flames.
- The bacteria are put into the air when a person with active TB Disease of the lungs or throat coughs or sneezes.
- Ventilation is the process to clean the air by providing outside air and eliminating dirty air.

Activities

1. Discuss the standard operating procedures (SOP's) regarding basic safety (personal hygiene and vaccination, first aid treatment, allergy test, age limit policies, environmental hygiene etc.)
2. Perform the use of PPE kits, gloves, Uniforms, Shoes, Hair net, beard net, masks etc.
3. Perform the experiment of fire Extinguishers and Fire Safety Equipment.
4. Perform correct evacuation procedures and incidents reporting through role play.

Notes for Teachers

- Discuss with students that why Health, Safety and Environment is a major concert about any workplace
- Tell students that almost every industry may have some types of hazards
- Ask students about various types of protentional hazards in various industries
- Ask Students about their interest about doing certifications related to Safety
- Help students to make a formal form for hazard detection and reporting

EXERCISE

Select the most appropriate option

1. The primary goal of the safety and health is to prevent workplace _____
 - (a) Injuries
 - (b) Object
 - (c) PPE
 - (d) Media
2. Which voltage can hurt people whether they touch it directly or indirectly through some kind of conductive material?
 - (a) Voltages above 10 volts AC
 - (b) voltage below 30 volts
 - (c) Voltages below 50 volts AC
 - (d) Voltages above 50 volts AC
3. What is the first step of avoiding accidents at work place?
 - (a) Follow safety precautions
 - (b) don't do anything
 - (c) None of these
 - (d) don't touch
4. Ventilation is the process of providing _____ in room.
 - (a) Inside air
 - (b) Dirty Air
 - (c) Random air
 - (d) outside Air
6. PPE stand for
 - (a) Power protective Equipment
 - (b) Personal productive equipment
 - (c) Personal protective Equipment
 - (d) Poor productive equipment
7. What is class of fire caused by fluids like petroleum, oil?
 - (a) Class A
 - (b) Class B
 - (c) Class C
 - (d) Class D
8. Powder fire extinguishers have a _____ mark.
 - (a) Green mark
 - (b) Yellow mark
 - (c) Red Mark
 - (d) Blue mark
9. Which fire extinguishers is suitable for the line electrical fire?
 - (a) Foam
 - (b) Water
 - (c) Halon
 - (d) Sand
10. How to stop bleeding in injured person?
 - (a) Apply bandage
 - (b) Apply pressure on the wound
 - (c) Drop water
 - (d) Supply more blood

Give short answer to the following question

1. What is HSE?
2. What is purpose of Health, safety and environment?
3. Define the Hazard.
4. Define Ventilation.
5. Describe three personal hygiene.
6. Describe personal protective equipment.
7. Enlist Personal protective Equipment.
8. Describe two rules of HSE.
9. What is Fire Triangle? Write four types of fires.
10. Describe Water extinguishers.

Answer the following questions in detail

1. Define Hazard? Explain different types of Hazards and which preventive measures are adopted.
2. Which diseases can be transmitted physically at workplace?
3. Define classes of fire and discuss different types of extinguishers.
4. Define PPE? How and when we use personal protective equipment (PPE).
5. Discuss the standard operating procedures (SOPS) regarding basic safety personal hygiene and vaccination.

CHAPTER 3

PHOTOGRAPHY



After completing this chapter, students will be able to:

- define photography
- know purpose of photography
- describe different techniques of photography
- understand components of camera (lens, light, chassis, battery, tripod, memory card, shutter, lcd screen and image sensor)
- know about handheld shooting process
- learn about tripod shoots
- know about adjustment of focus
- learn about exposure of camera
- know about density of camera
- learn about shutter speed of camera
- learn about white balance and iso for image stabilization
- learn about indoor and outdoor shooting

3. Introduction to Photography

3.1. Photography

The word Photography literally means ‘drawing with light’, which derives from the Greek ‘photo’, meaning *light* and ‘graph’, meaning *to draw*. Photography is the process of making pictures by means of capturing light on a light-sensitive medium, such as a sensor or film. Light patterns reflected or emitted from objects are recorded onto a light sensitive medium or storage chip through a timed exposure. Traditionally the product of photography is called a picture, an image or a photograph. The term photo is an abbreviation of photograph.

3.2. Purpose of Photography

Photography is another development of media forms. Just like other media technologies, photography extended the ability of communication. It serves various purposes such as, conveyers of news, scientific evidence, historical documents, work of art, and record of family. Photography is done in various fields and for various purposes. Some of the purposes are briefly discussed below:

- Making photographs for commercial and advertising purposes. The goal is to sell products, services, or ideas.
- Making photographs for recording moments such as wedding, get-togethers, and birthday parties etc.
- Photography is used at a professional level for portrait making.
- Making photographs for entertainment such as doing photography for magazines and picture-based stories.
- Photographs can provide legal evidence about something that happened for a specific purpose. Something is proven when we are shown a photograph of it. For example, the use of photography for crime investigation.

3.3. Techniques of Photography

Different techniques of photography can be adopted to achieve professional results which can fulfill the purposes of photography. Some of the techniques will be highlighted in this topic.

- Photographic techniques can be divided into two categories on the basis of camera handling, which are as follows:

a. Handheld photography

b. Tripod photography

- Photographic techniques can also be divided on the basis of the environment in which photography is being done. On this ground, photographic techniques can broadly be divided into following categories: -

- Outdoor photography
- Indoor photography
- High Speed Photography
- Night Photography
- Motion Blur
- Black and White Photography
- Monochromatic Color Photography
- Smoke Art Photography
- Macro Photography
- Long Exposure Photography

Activity

Group presentation on techniques photography

3.4. Components of Camera

In this topic, we will learn basic components of the professional quality cameras. Some of the most essential components of a camera are listed as follows:

- Chassis
- Viewfinder
- LCD screen
- Shutter
- Shutter release
- Mode dial
- Memory card



- Image sensor
- Lens
- Battery
- Flashlight
- Zoom ring and focus ring

Chassis / Camera Body

The camera body is the main box, to which all the components of camera are attached. It is the part of the camera which is held when using the camera. It contains image sensor, LCD screen, shutter release button, shutter, and associated circuitry. Camera lens(es) can be attached and detached from the camera body.

Viewfinder

The viewfinder is what you look through to compose the picture. A photographer finds a spot to focus on, by looking through the viewfinder. There are two types of viewfinders, i.e., optical and digital. Optical viewfinder is the rectangular-shaped eyepiece on a camera that is held close to the eye, allowing the photographer to see what is being photographed. Optical viewfinder and the way it is used have been shown in the figure.



LCD Screen

An “electronic viewfinder” is a camera viewfinder in which the image captured by the lens is electronically projected onto a micro-screen. The LCD screen acts as the electronic viewfinder as shown in the figure.

Shutter

The length of time for which the image sensor is exposed to light is controlled by part of camera called “shutter”. The shutter functions like a door that opens and shuts. The shutter is made of different materials depending on the type of camera and manufacturer.

Shutter release

The shutter release is the button that must be pressed in order to take the photograph. It is usually found on the right front as you hold the camera.



Mode Dial

Mode dial is used to change the camera modes. Different scene modes can be chosen by rotating the dial. Some of the mode dials of different cameras are shown in the figure.



Memory card

Memory card is a type of storage medium used to store photos and videos. Two most popular Memory Cards are the SD (Secure Digital) and CF (Compact Flash) cards. Memory Cards come in different sizes and storage capacities. Some of them can be tiny in size also called Micro SD Card. As the images and videos taken by digital cameras take a lot of storage space. Therefore, mostly memory cards having capacity of more than 16 GB are used.



Image Sensor

Image sensor is a sensor that detects and conveys information used to make an image. When light passes through the lens, aperture, and shutter, it hits the recording medium, which records the image.

Lens

The basic purpose of a lens is to focus the available light so that it can be recorded by the recording medium. Different types of lenses have their own characteristics, which can control focal length, and viewing angle. Different types of lenses can be used to capture wide area image, closeups, sports or an object at a great distance.



Battery

Like other digital devices, camera needs a power source to operate, which is provided through battery.

Flashlight

Flashlight can be embedded or detachable on front side of the cameras. The purpose of flashlight is to produce a flash of artificial light where natural light is not enough to photograph something.

Focus Ring and Zoom ring

“Focus ring” is rotated to adjust the focus of the camera whereas “zoom ring” is rotated to change the focal length. Zoom ring allows to zoom in and out of the scene being recorded.

3.5.Handheld Photography

Activity for students

1. Students will perform assembling of camera.
2. Set camera with tripod

Hand-held photography is the technique in which a camera is held in the camera operator's hands as opposed to being mounted on a tripod. Hand-held camera shots often result in a shaky image, unlike the stable image from a tripod-mounted camera. This method is used to get quick photographs and the photographer must be expert / trained to get these shorts. To prevent shaky shots, a number of image stabilization technologies have been used on hand-held cameras

including optical, digital and mechanical methods. However, settings of the camera can also be adjusted for the hand-held photography. For example, increasing the shutter speed etc.

3.6. Tripod Photography

A tripod is a three-legged device which is used to securely and steadily hold a camera. Most tripods have a central pole and height adjustable legs and are used in conjunction with mount to which a head is fixed. Tripods are used for still as well as motion photography to prevent camera movement and provide stability. When photographs with slow shutter speed need to be taken, it is necessary to use tripod because even a little camera shake will produce a blurry image. Use of a tripod in such situations will maximize sharpness of objects in the image by reducing the camera shake. A tripod can also help achieve precise composition of the image, or when creating multiple images of the same scene. Tripod is also helpful in photographing at certain heights.



Do You Know:

When describing a digital camera, the term "resolution" refers to the number of pixels of the digital image produced by the camera, usually expressed in "megapixels". For example, a camera that captures 1600 x 1200 pixels, produces an image with a resolution of 1.92 million pixels, which is called a 2.0-megapixel camera. By multiplying the vertical and horizontal dimensions, you can get 1.92 million pixels. For marketing purposes, this number is then rounded to 2. Higher resolution means better quality, the quality of lens and the image capture chip are also important.

3.7. Adjustment of Focus

Focus, in terms of photography or videography, is the point where the objects in the frame are sharpest. When taking a photograph, it is essential that at least a part of the image is in focus. Adjusting this focus can be done by following two ways:

Automatically: Using autofocus option, the camera can automatically select the focus point(s). This is done by pressing the shutter halfway. When using autofocus, there are two factors to understand: focus points and focus modes. Focus points are the squares that can be seen in the

viewfinder when framing the image. These Adjusting the focus determine where the point of focus in an image will be. The other factor is focus modes. Types of focus modes available vary between cameras. However, most cameras have at least two autofocus modes:

- **Single shot focus mode:** The single shot focus mode keeps the focus point once the shutter is half pressed, even if you reframe the image.
- **Continuous focus mode:** Continuous focusing continuously recalculates and readjusts the focus until the image is taken.

Manually: Focus point can also be selected manually. This can be done by rotating the focus ring on the lens until the area you want in focus becomes sharp / clear.

3.8.Exposure of Camera

Exposure of camera refers to the amount of light that touches the camera's sensor while taking a photo or video. Exposure of a photograph refers to the level of brightness or darkness in it. The exposure settings of camera can be adjusted by changing ISO, shutter speed and aperture size of a camera. A correct exposure in a given scenario is obtained by properly tuning these settings.

Larger aperture size and ISO values are associated with increased exposure of the image. Likewise, lower aperture size and ISO values produce lesser exposure. However, the faster shutter speeds are associated with lesser exposure and slower shutter speeds are associated with increased exposure.

3.9.Density of Camera

When any image or video is displayed on a screen or printed, it has physical properties that is pixel density. Pixel density of a camera refers to the concentration of pixels on a particular surface or device. It is measured in pixels per inch (ppi) and pixels per centimetre (ppcm).

3.10. Four Essentials of Photography

Photography is a form of communication that can be understood universally. Since photographs can be so widely understood, we should be concerned with whether what we have to say is worth saying. The four essentials of photography are light, composition, aperture, and shutter speed. These must be considered while taking the photograph.

Light

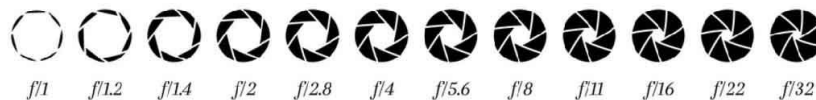
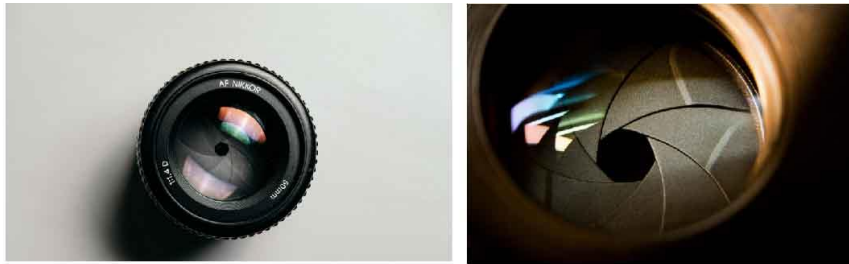
Light is an important part of the image, and there are many different types of light. Each of them can be used to create different emotions or feelings in the picture. The photographer's job is to control this light to obtain the best and required results. Indoor and Outdoor photography has different requirements of light.

Composition

In photography, composition refers to the placement of various elements of the scene within a frame. “Composing an image” means arranging the elements in the way that best suits the central idea or purpose of your work.

Aperture: Depth of field

Aperture refers to a hole in the lens through which light passes before reaching the recording medium. It controls the amount of light and the depth of field recorded. The aperture size is



measured in f-stop/f-value e.g., f/16, f/11 and f/8. Aperture size can also be written in numbers such as, 16, 11 and 8. The higher the f-stop value, the larger will be the opening in the lens. Whereas the smaller is the f-stop value, the smaller will be the opening in the lens. Lower f/stops give more exposure because they represent the larger apertures, while the higher f/stops give less exposure because they represent smaller apertures. The maximum and minimum aperture sizes vary between cameras.

Besides exposure, the aperture size also determines the depth of the field, which is the sharpness of the area behind the subject which is being focused. The lower is the f/stop value, the less depth of field will be recorded, hence the blurrier will be the background. The higher the f/stop, the greater the depth of field will be recorded; hence the sharper will be the background.

Do you know?

In photos and videos, the subject refers to the object (or person or creature), shown in the photograph or video. Subject is prominent point and is the focus of the scene.

Shutter speed: Time

Shutter speed refers to the time the shutter remains open and is recorded in units of seconds, tenths of a second, or hundredths of a second (e.g. 1, 1/10 or 1/2000). The higher the shutter speed, the lesser light is recorded (and vice versa). The right choice of shutter speed is important especially when objects to be recorded are moving. Shutter speed controls how long we capture light and the amount of movement recorded in the image. Most cameras have shutter speeds between 1/1000s and 1s. Common shutter speeds are: 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500, and 1/1000. When you use a faster shutter speed, the shutter stays open for a shorter time. This freezes the movement but reduces the light recording time. Slower shutter speed means the shutter stays open longer, which blurs the motion but allow lighter to be recorded. Fast shutter speeds over 1/100 are good for hand-held shot, and slow shutter speeds lower than 1/100 are better for low illumination conditions.

3.11. White Balance

For a correct white balance of the camera, "color temperature" of the light source must be taken into account. The color temperature refers to the warmth or coldness of white light. The more orange the light is, the warmer the color temperature is. Likewise, the bluer the light is, the cooler is the color temperature. Direct sunlight at noon is considered to be a "normal" color temperature, so all light sources are compared to this as the standard. For example, light from an incandescent light bulb appears to be more orange than the sunlight at noon. White balance setting in camera is used to adjust the color temperature of the scene being captured.

The following white balance presets are also available in cameras:

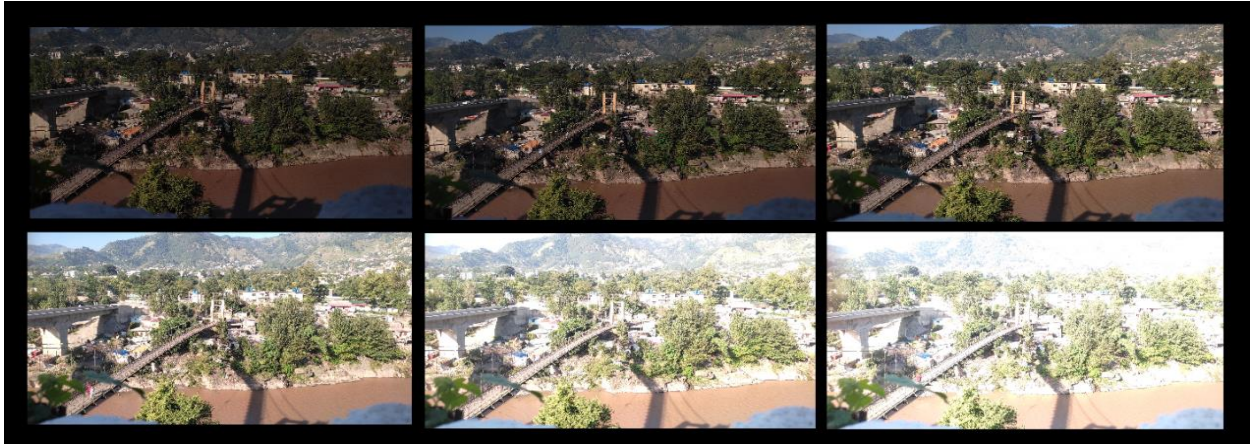
- **Auto(A):** This preset automatically adjusts the white balance depending on ambient light.
- **Shade (House with a Shadow):** This setting adds orange color to the photograph.
- **Choose Color Temperature (K):** Color temperature can be changed manually.
- **Incandescent (Light bulb):** It is used under tungsten light bulbs.
- **Fluorescent (Glowing Tube):** It is used under fluorescent lights or if the photograph looks too green.
- **Direct Sunlight (Sun):** This white balance setting is used in shooting outdoor shooting with the sun shining on the subject.
- **Flash (Lightning Bolt):** It is used when flashlight of the camera is being used while making pictures.
- **Cloudy (Cloud):** It is used while making pictures in shades or on cloudy day. With this white balance setting, images produced have warmer color than sunlight.

Figure below shows camera shots captured with different manually selected white balance values.



ISO

ISO is the sensitivity of the camera's sensor to light. The higher the ISO, the more sensitive the sensor is to light. However, if ISO is increased too much, the lens of camera will produce grain or noise. Standard ISO values are 100, 200, 400, 800, 1600, 3200, 6400, etc. Whenever ISO is decreased, it decreases the amount of light by half.



A high ISO of 800 and above allows you to use a faster shutter speed in low light conditions, but it adds noise to the image making it look grainy. If too high ISO is used, the image looks washed away, however it would appear dark if too low ISO is used.

3.12. Indoor Versus Outdoor Photography

Indoor photography refers to taking photographs inside a building or structure. For example, taking shots inside a restaurant, a photo studio, home or office etc. The term outdoor photography is mostly used when referring to taking photographs without using artificial lights. Outdoor photography is done outdoor in natural lighting conditions.

Do you know?

While taking landscapes and group shots, you can get wonderful results with aperture of around $f / 11$.

Both indoor and outdoor photography have certain requirements, settings, pros and cons. But one factor which must always be taken into consideration and never overlooked is *“Light”*. Good lighting is vital if you wish to shoot mind-blowing photos. So, finding a spot with sufficient lighting is essential, whether you are taking photos, indoor or outdoor. In this perspective, indoor



photography is easier because the photographer has full control over the light sources. For indoor photography, several light sources can be used. The direction of light, intensity of light sources, and their distance from the subject have influence on result of photograph. Flashlight of camera and other light sources can be selected and used depending upon the requirement for the photo shoot. However, obtaining balanced, well spread and well illuminated environment indoor is costly as compared to outdoor in daytime. For creating natural effects in the photograph shot indoor, natural lighting sources can be used, e.g., illuminating the shooting location by opening all windows and doors.

An example of a good outdoor shot

In indoor photography, the photographer has more control over the background as compared to doing photography outdoor. For outdoor photography in the daytime, lower ISO and smaller aperture size is required as compared to doing photography at night.

Key points

- Photography literally means to ‘draw with light’. Photography is the process of making pictures by means of capturing light on a light-sensitive medium, such as a sensor or film.
- Photography serves various purposes such as, conveyers of news, scientific evidence, historical documents, works of art, and record of family events.
- Shutter is the component of a camera which opens and closes according to the adjusted shutter speed.
- Shutter is the component of a camera which is used to control the shutter speed of a camera.
- Shutter release is the button which needs to be pressed in order to take the photographs.
- In photography, a tripod is a three-legged instrument which is designed to hold a camera securely and steadily.
- In tripod photography, camera is mounted on a tripod while doing photography.
- In hand-held photography, camera is held in the photographer’s hands
- The term “resolution” refers to the number of pixels of the digital image produced by the camera.
- The term “pixel density” refers to the concentration of pixels on a particular surface or device.
- White balance is used to balance the color temperature of the image.
- Overall, the image can be evaluated based on the shutter speed, ISO, white balance, lens type, density of camera and exposer of camera.

Activities

1. Capture image (portrait and landscape) of indoor by using different setting of camera.
2. Capture image (portrait and landscape) of outdoor by using different setting of camera.

Notes for Teachers

- Help students in understanding the assembling and disassembling different kinds of cameras.
- Discuss the use of ISO, Shutter Speed, Focus, Exposure and other parameters (various combinations) in detail and their usage.
- Discuss with students about the photography as a career.
- Discuss with students about the requirements of indoor and outdoor shooting

EXERCISE

Select the most appropriate option

1. The literal meaning of “Photography” is _____
 - a. making a picture
 - b. drawing with light
 - c. recording
 - d. capture
2. _____ is used as a display technology in cameras.
 - a. LCS screen
 - b. LCD screen
 - c. camera lens
 - d. Camera Shutter
3. Photographs captured by the camera can be stored on _____
 - a. Memory card
 - b. ATM card
 - c. Image sensor
 - d. Printer
4. The basic purpose of a _____ is to focus the available light so that it can be recorded by the recording medium.
 - a. Shutter
 - b. Lens
 - c. LCD screen
 - d. Printer
5. In photography, a tripod is a _____ legged instrument which is designed to hold a camera securely and steadily.
 - a. two
 - b. three
 - c. four
 - d. five
6. When any image is displayed on a screen or printed, it has a physical property that is _____
 - a. Pixel density
 - b. pixel weight
 - c. Pixel Density
 - d. Pixel Accuracy

- 8 Describe the purpose of flashlight in camera.
- 9 What aperture settings do we need for outdoor shooting?
- 10 What will be aperture settings for far-away subject in indoor and outdoor shooting?

Answer the following long questions

1. What are techniques of photography? How can we use these to produce quality photography?
2. Elaborate the functions of major components of a camera.
3. Define density of camera. Also explain how focus can be adjusted for photography.
4. Write necessary conditions and requirements of indoor as well as outdoor photography shooting.
5. Describe basic implications of handheld as well as tripod photograph shooting.

CHAPTER 4

VIDEOGRAPHY



After completing this chapter, students will be able to:

- learn about concept of videography.
- identify purpose of videography.
- know about video formats.
- describe different techniques of video production.
- understand components of camera
- know about hand-held shooting process.
- learn about tripod shots.
- understand different types of lighting system
- learn about location selection for recording
- understand about studio lights.
- learn about warm and cool lights equipment
- understand about intensity of light
- know about adjustment of focus
- learn about exposure of camera
- know about density of camera
- learn about shutter speed of camera
- learn about white balance and iso for video stabilization
- learn about indoor and outdoor video shooting

4. Videography

4.1. Introduction

From a technical point of view, videography refers to the use of a camera (smartphone camera, pocket camera, electronic camera, etc.) to record video electronically. The person who records the video is known as the "videographer". Technically, a "video" is actually a series of images (frames), that are captured and finally displayed at a particular frequency. A single image or frame can be obtained by stopping the video at a specific frame in the sequence.

Do you Know

Motion Pictures are works that contain a series of related images that are intended to be shown with a projector, digital display, or other device. Examples of motion pictures include movies, television shows, video games, animations, and similar types of works.

4.2. Purpose of Videography

In the past, films were only shown on a large projection screen in a movie theater. Today, we are watching a lot of content every day on smartphones, laptops, tablets, TVs etc. Now the access to video content is easy, which benefits both individuals and businesses. People can create all kinds of videos and share them with anyone. Today's smartphones can record high resolution 4K video. In short, technology advancements have given access to videography to almost everyone. Video styles and techniques depend on the purpose for which the video is created. Some of the purposes of doing videography are mentioned below:

- Brand awareness
- Advertisement of a product
- Documentary films
- Capturing moments in an event such as a wedding
- Webinars
- Animations
- Educational or tutorial videos
- Presenting reviews of a product or place
- Testimonial videos
- Recording interviews
- Entertainment, dramas and movies

4.3.Video Formats

Different video capturing devices record videos in different formats. With the passage of time, the interoperability between devices playbacks got improved. Now a days, a single device can record video in various formats. These formats, however, have different properties and qualities. Understanding the format that a camera shoots in, helps in estimating how much storage space will be required to shoot a video footage. Most of the video editing software can handle major formats. Different video formats have been briefly discussed as follows:

- **AVCHD**

AVCHD is an abbreviation of Advanced Video Coding, High Definition. This is the default format jointly developed by Panasonic and Sony, this file format is used for recording videos with cameras of both the brands. Due to the high video-quality it supports, this format is very popular among professional videographers. 3D videos can also be recorded in AVCHD format.

- **MKV**

Matroska or MKV is a free and open-source format. It was originally developed and used as a standard video format for multimedia files such as movies and shows. A single MKV file can comprise a large number of images, subtitle tracks, and audio.

- **AVI**

AVI is an abbreviated as Audio Video Interleave. This video format was once considered the absolute best choice in the market. It was developed by Microsoft in the 1990s, and although its popularity has declined with the emergence of new compression formats, it is still widely used. Some camera brands such as Olympus and Nikon use this format. It offers full compatibility with PC and Mac devices.

- **MP4**

MP4 is another Apple product. MP4 video format was created for low bandwidth compression, which means that the image quality is significantly lower than other file types. Since it is compatible with Apple devices as well as other devices (such as Xbox360), it is being used in iTunes store.

- **FLV**

FLV stands for Flash Video Format. It is complementary to another Flash video format, SWF. FLV is one of the most common video formats, however, it has some major shortcomings. For example, IOS devices do not support Flash, which means it cannot be played on iPad and iPhone.

- **MOV**

MOV is Apple's QuickTime movie format. This video format was created for movies and allows videographers to break down files into different tracks to store different types of data. Canon DSLR cameras uses a variant of MOV.

- **WEBM**

WEBM, as the name suggests, was developed to be used on websites. This video format together with HTML5, produces very small-sized videos that can be easily streamed with almost no-load times. Due to the improvement in performance and limits of online platforms, its popularity has recently declined significantly.

- **WMV**

WMV is an abbreviation of Windows Media Video. It was created by Microsoft to dominate the field of online streaming. This is the smallest video size available and is ideal for email sharing. Major shortcoming of this format is that the video quality during and after compression is drastically reduced.

Do You Know:

There is no one size fits all when it comes to video sharing. The good news is that it is actually easy to transfer between video formats. If you do, make sure to always save the original file to avoid degradation of image quality due to file compression.

4.4. Different Techniques of Video Production

The production techniques adopted to produce a video vary from country to country, person to person, and business to business. Different videography techniques depend on the purpose for which the video is created.

Based on camera and voice recording, video production can be divided into two types:

- Multicamera production
- Off screen voice

Multicamera production: In this type of video production, multiple videos of the same subject are captured at the same time, which are then integrated to make a single video. For example, a scene of drama or film is recorded by using multiple cameras, then the final video is made by cutting and editing specific parts of scene from each camera.

Off screen voice: In this technique of video production, video does not capture and present the voice of the captured scene. However, the voices and videos are recorded separately and then the final video is a video with a dubbed voice.

Planning about which elements or shots need to be taken in order to tell a story or demonstrate something, is important. For example, close-up shots are used to capture details of the subject, such as the facial expressions of an actor in a movie scene. Based on composition of the frames, techniques can be categorized into four major groups:

- Close-up Shot
- Long Shot
- Medium Shot
- Extreme Long Shot

Close-up Shot: A close-up shot is a shot of an object or person to capture the details of the subject. When filming a scene of movie, close-up shots are used to frame the face of characters in order to convey their emotions to audience. Close-up shots are also used to reveal details of an objects or the environment in which the video is being shot. For example, close-ups can be used to show the viewers that attention needs to be paid to certain symbol that is being carried out throughout the video.

Medium Shot: A medium shot is taken with a medium distance of subject from the camera. In dramas and film making, videos are captured with medium shot where back and forth dialogue between the characters are shown. Medium shot allows the viewers to see the details of the subject as well as the surrounding settings. For this reason, medium shot is also called “sweet spot”.

Long Shot: A long shot is also referred as wide shot. Long shot is used to show full length of the subject as well as a considerable portion of the surrounding area. In filmmaking, a long shot is often used as an establishing shot.

Extreme Long Shot: Extreme long shot is used to capture larger areas e.g., landscapes. This type of shot is also called extreme wide shot. In this shot, subject is so far away in the frame view, that

it is not necessarily the focus anymore. This shot is used to show the audience where the action is taking place.

Based on camera movement, techniques can be divided into following categories:

Handheld shot: These shots are taken with video camera in hand instead of being mounted on tripod.

Floating cam shots: The shots taken by moving subject as well as subject mounted on dolly, are called floating shots.

Crane / jib shot: A crane / jib shot is the one captured at heights. It is captured by using a crane or jib to lift the camera and videographer. This technique has been replaced by drone video recording.

Activities

- Group presentation on techniques of videography
- Video shooting using handheld, floating and drone

4.5.Components Of Video Camera

Almost all modern digital photographic cameras can be used for recording videos as well. However, cameras designed especially for videography, provide more useful features for recording various kinds of videos. Variety of video cameras are available today (Web cams, camcorder, professional cameras), each varying in components, technology, and sizes etc. However, there are some essential components which are common in all video cameras. These components are briefly discussed below:

Lens:

The lens on a video camera serves as the same function as a still camera's lens. It draws in light and captures the image at which the camera points. This telescopic piece can have multiple lenses within it. A number of dials on the tube will shift the lens positions by turning them, and this controls how the lenses focus the light they receive to clarify the picture.

Image Sensor

Image sensor is a sensor that detects and conveys information used to make video frames. While making a video, light passes through the lens, aperture, and shutter, then it hits the image sensor, which records the frames of the video.

Viewfinder

The viewfinder is directly connected to the lens and is meant to provide access to the image for the user. This can be a simple eye-sized window, or it may be a small pixel screen that folds into the camera when not in use; many models have both versions. Viewfinders also double as a video screen for playing back the recorded image.

Microphone

The lens picks up only the visual images for the camera, meaning this alone would create a silent picture. Video cameras, therefore, also include microphones that record sound in the area. The microphone is usually mounted next to the lens and pointing in the same direction so the audio and video are closely in sync.

Recorder

The recorder processes the images received by the lens and the sound from the microphone and records them to memory. On older analog cameras, this would record the image onto a magnetic tape within a cassette. Some cameras would take full VCR tapes, but others require miniature versions of these cassettes or other formats like Hi8. Digital cameras eliminate the need for cassettes. The camera instead records the image as a computer video file. In most cases, this file is in JPEG format.

Controls

The camera's main controls include the Power switch and the Record button. It will also include playback buttons such as Play, Stop, Rewind, Fast Forward and Pause. The controls also include output ports to connect the camera for playback. All cameras should include the basic red/white/yellow RCA cables to connect to any playback machine, but they can also include USB or FireWire controls for connection to a computer.

Battery

Battery power is essential for camera use. Every camera is equipped with a rechargeable battery. Most batteries are lithium-ion based, and each is made and designed to work specifically with its camera model only. A full battery charge can usually take 12 hours, meaning an overnight charge will suffice

Quadcopter Drone

A “Quadcopter drone” refers to a drone that has four rotors and is remotely controlled instead of being controlled by a pre-programmed, onboard computer. Quadcopter drones with camera, can be used to make videos from certain height.



Tripod

In photography and videography, a tripod is a three-legged device which is designed to securely and steadily hold a camera. Most tripods have a central pole and height adjustable legs and are used in conjunction with mount to which a head is fixed. A tripod is a supplementary component in videography to hold camera.

4.6. Handheld Videography

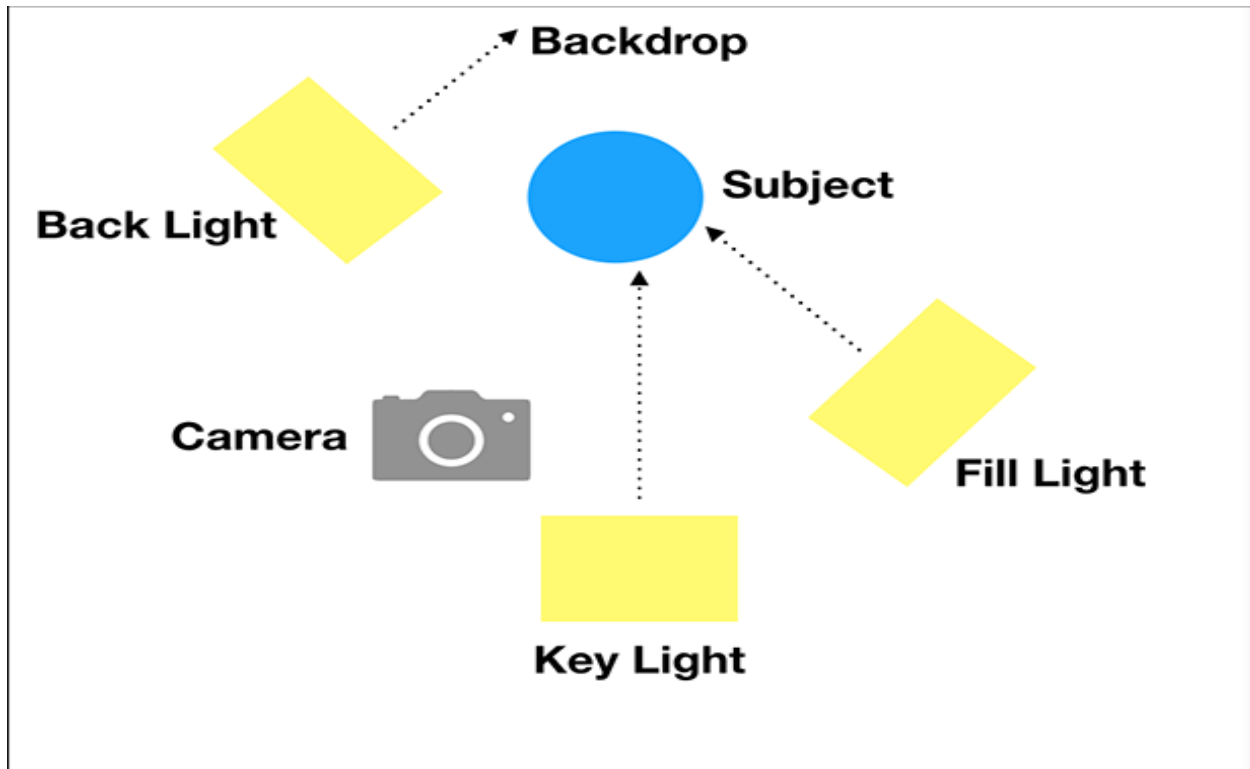
Handheld videography is recording the video with the video camera in hand. There aren't any devices used to stabilize the shots and to keep the motion uniform. The videographer uses his hands and his motion to capture video. Videos that are recorded using handheld videography are shaky and the motion in the scene is not uniform. Some special scenes are captured with handheld approach e.g., display of rush or urgency. People who don't own tripods also use handheld videography.

4.7. Tripod Videography

Tripod videography is easier and can produce quality shots as compared to handheld recording. As we know, tripod provides stability in the shots, sing tripod is essential in professional

videography. Other than stability, tripod also provides other functions. For example, time lapse videos are shot using tripod.

4.8.Types of Lighting Systems



Various factors contribute in making a successful video for a specific purpose. One important factor among those is lighting. It is important that you understand the advantages of each method and be able to make full use of these to achieve the purpose for which video is being made. The following are different types of lighting systems used in making videos:

- Key lighting
- Fill lighting
- Backlighting
- Side lighting
- Practical lighting
- Motivated lighting
- Bounce lighting
- Soft lighting
- Hard lighting

Key Lighting

The key light refers to the main light source being used for shooting a video. It is the most direct and intense source of light in the video. If the key light is placed behind the subject, it would darken the frame however the scene would look dramatic. Placing camera too close to key light should also be avoided because the lighting will seem extremely flat.

Fill Lighting

Key light sometimes creates shadows, and fill lighting is used to illuminate these shadows. Fill lighting is also used to decrease contrast in the scene, by illuminating the objects that are not subject but need to be shown. For example, a fill lighting can be observed in Figure 4.11.



Backlighting

Backlighting deals with lighting up the background of the shot in a certain way. For example, If the scene is supposed to dark and mysterious then small red lights are used. Background lighting gives the whole frame a nice contrast and makes the video interesting.

Side Lighting

Side lighting, as the term suggests, reflects your scene from the side, parallel to the object. Sidelight highlights the texture or edges of the scene. It creates a better sense of depth in a certain way. For example, by using side lighting, the distance between the subjects can be highlighted and manipulated. Side lights can also be used to add mystery to the image.



Practical Lighting

Practical lighting is about using daily life light resources for example candles, lamps, television screens, tube lights and other sources whose light will be shown onscreen. These are usually used to bring the emotion of a night scene in a movie shoot. Sometimes practical lighting is used to create skillful artistic effect of lighting on the subject.



Motivated Lighting

Motivated lighting is about using artificial lights to imitate a natural light source such as sunlight, moonlight, and street lamps at night. Motivated lighting is also used to enhance practical lights.



Bounce Lighting

Bounce lighting is basically bouncing or reflecting the light from a high intensity light source towards your subject or scene using foam, or any light-colored surface or silk boards. Arranging lights in this formation creates a wider area of light which is more evenly spread out. Bounce lighting is used where a clean and wide spread of light for the whole environment is required.

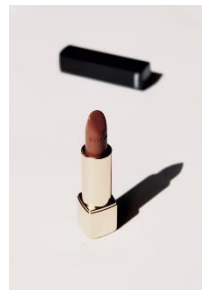
Soft Lighting

Soft lighting is a balanced lighting setup. It is used for both the situational and aesthetic purposes. In term of situational purpose, it is used to produce lighter contrast in the frame being shot. When soft lighting is used, the transition between the light and shadows is smoother and less noticeable. In terms of aesthetic purpose, soft lighting is used for beautification of the subject by minimizing the blemishes, wrinkles etc. Devices such as, soft boxes, octas and rotaluxes are used to soften the lights being used for videography.



Hard Lighting

Hard lighting refers to strong and focused light. It creates harsh shadows and highlight the contour of the subject. Hard lighting is used to create an intense look to the frame or scene being recorded. Hard lighting is used to draw attention of viewer towards the main subject or to the main area of the scene.



1.1.Location Selection

One of the important aspects of videography is location selection. As it gives the context of what is happening in the scene. For example, for natural videography, a beautiful mountain or forest is selected. There are several things that are kept into consideration while selecting a location: e.g. the purpose of shooting, aesthetic of location, background noise, lighting and sufficient place.

1.2.Studio Lights

Studio in terms of videography refers to the building or room which contains setup for producing a specific video. A studio has various lightings and sets, which are used according to the purpose and requirements of the video. A set consists of scenery and props which are required to be shown for shooting a specific video. The important things to work with are Foreground, background, midground, lighting grid, dimmers and reflectors



1.3.Warm And Cool Light Equipment

Colour temperature of light is actually the “colour” of white light radiated by a perfect black body at a given temperature. It is measured in degrees Kelvin (K). Smaller kelvin value, that is below 4000K is considered “warm light” whereas a high Kelvin value, that is, above 4000K is “cool light.” Warm light appears in orange, yellow and red tones. Whereas a cool light appears having predominantly blue factor. Some of the cool and warm light equipment are discussed below:

Tungsten Lights: These lights work at high temperatures and produce warm light. Tungsten bulbs are often used to simulate sunlight because they produce warm light.

HMI Lights: HMI is an abbreviation of “Hydrargyrum medium-arc iodide”. HMI bulbs emit a 6000K colour temperature light to mimic daylight. These lights are bright, cool and flicker-free.

Fluorescent lights: The colour temperature of a fluorescent varies between 2700K to 6500K. These lights are used to light interiors and are more compact and cooler than tungsten or HMI lighting.

LED lights: LED is an abbreviation of “light emitting diode”. Various LED light bulbs are available ranging in colour temperatures. For example, vintage and filament LED bulbs produce light around 2700K, while some LED bulbs produce light as low as 1900K.

1.4.Intensity Of Light

Intensity of light refers to the power of light at a given position. The intensity of light source is measured in *lumens*. Light intensity controls both, the brightness and illumination of the subject. The objects closer to the light source appear brighter as compared to the distant objects. This happens because the light spreads out as it travels farther. Intensity of light captured in a video is dependent on following factors:

- Exposure settings of camera
- Intensity of light source used
- Distance of objects from the light source(s)

1.5.Adjustment Of Focus



Focus is a combination of lens aperture and light. Focus, in terms of videography, is the point where the objects in the frame are sharpest. In videography, the focus in videos is adjusted using lights and camera settings. Camera settings can be adjusted manually or by using the autofocus system of the camera. Lighting grids can also be used to focus on the objects that are more important than others. By adjusting the camera lens, different types of focus can be achieved, which are discussed as follows:

Deep Focus: Deep focus is used when all the subjects in the frame are important to be shown. In this type of focus, all the objects are in the focus, whether they are in the foreground, background or midground. Everything in the scene is clear and sharp. Hence, there is a balance in the frame.

Shallow Focus: In shallow focus, subject is in focus (i.e., clear) whereas the background is out of focus (i.e., blurry). Shallow depth of field is used in shallow focus. Shallow focus is used to convey emotions and to direct the eye towards specific objects.

Soft Focus: Soft focus is somewhat similar to shallow focus, as subject is in focus (i.e., clear) whereas the background is out of focus (i.e., blurry). However, as opposed to the shallow focus, a glow is added around the subject. Soft focus is used to indicate that the shown scene may be a dream or fantasy; it's not entirely real.

Rack focus: Rack focus is used to shift attention from one point to another in successive frames of the video. That is, the camera changes the focus from one subject to another while the video is being recorded.

Tilt Focus: Tilt-focus is used to create a miniature effect, by defocusing parts of the frame being shot. In this type of focus, foreground and background is out of focus, whereas particular objects are in focus.

Do you know?

Resolution of a video is the number of pixels contained in each frame. The more the resolution of camera, the clearer and more realistic the video appears.

1.6.Exposure Of Camera

In videography, exposure refers to the amount of light that touches the camera's image sensor while recording video. Exposure in a video is mainly dependent on two things, that are, lighting condition and camera settings. Videos that are shot in different lightings but with same camera setting, have different exposure to light. In a given lighting setup, the settings for exposure of camera can be adjusted by changing:

- Aperture
- ISO
- Shutter speed

1.7. Density Of Camera

When any video is displayed on a screen or printed, it has a physical property, that is pixel density. Pixel density of a camera refers to the concentration of pixels on a particular surface or device. It is measured in pixels per inch (ppi) and pixels per centimetre (ppcm).

Do you know?

The **frame rate** is the number of consecutive occurrences of a single image per second. There is no perfect frame rate for videography. They all produce different results. When trying to capture the slow motion of a subject, video can be shoot at higher frame rate.

1.8. Shutter Speed of Camera

Shutter speed is the amount of time the camera sensor is exposed to light, while capturing frames of the video. It is measured in seconds or fraction of a second, e.g., 1 second and 1/60 seconds etc. By decreasing or increasing the shutter speed, the rate at which shutter opens and closes is actually being increased or decreased.

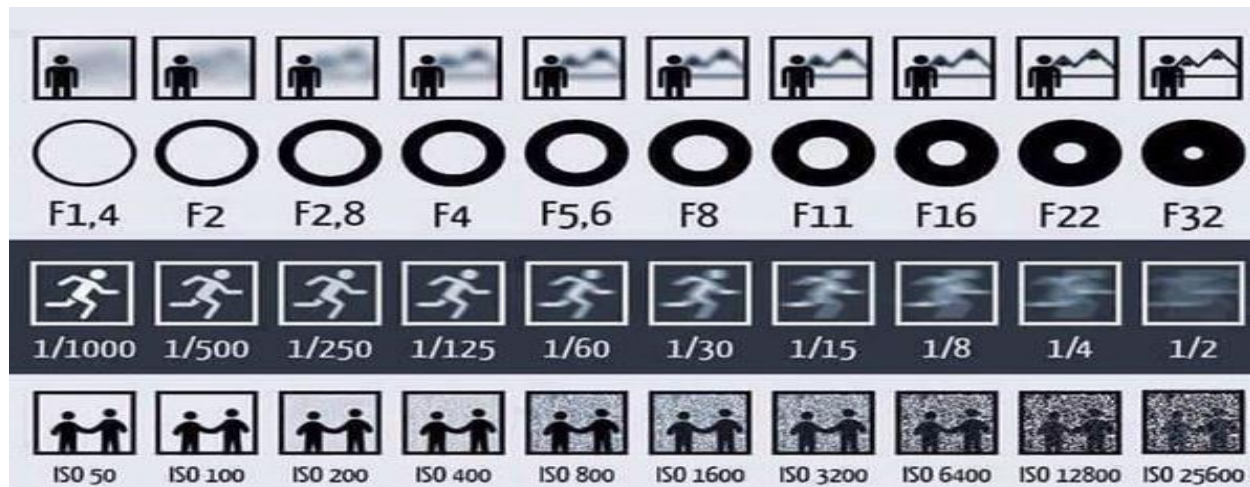
A frame rate of 24 fps with a shutter speed of **1/48 or 1/50** will give your footage a smooth cinematic look and feel. Higher frame rates, such as 60 fps with a shutter speed of 1/120, will allow you to slow down your footage at the editing stage and create ultra-smooth slow-motion scenes.

1.9. White Balance and ISO



Most digital video cameras have a “Native ISO” or “Optimal ISO” setting, which is the ISO on that camera that gives you the best signal-to-noise ratio, that is, the best picture with the least noise. If you're shooting mostly outdoors, maybe you want a camera with a lower native ISO. White balance is the camera setting that is used to set the color temperature of the frames. Color

temperature affects the perception of coolness or warmth of the scene. Figure 4.21 shows frames captured with different manually selected white balance values.



Generally, the following white balance presets are available in cameras:

- **Auto(A):** This preset automatically adjusts the white balance depending on ambient light.
- **Shade (House with a Shadow):** This setting adds orange color to the photograph.
- **Choose Color Temperature (K):** Color temperature can be changed manually.
- **Incandescent (Light bulb):** It is used under tungsten light bulbs.
- **Fluorescent (Glowing Tube):** It is used under fluorescent lights or if the photograph looks too green.
- **Direct Sunlight (Sun):** This white balance setting is used in shooting outdoor shooting with the sun shining on the subject.
- **Flash (Lightning Bolt):** It is used when flashlight of the camera is being used while making pictures.
- **Cloudy (Cloud):** It is used while making pictures in shades or on cloudy day. With this white balance setting, images produced have warmer color than sunlight.

Indoor and Outdoor Video Shooting

Whether to shoot outdoor or indoor depends on the purpose and requirement. In outdoor video shooting, the videographer has lesser control as compared to indoor video shooting. The control here refers, especially to lighting and voices. For example, for outdoor video shooting, wind can interfere voices of characters, natural light can have stronger or lesser intensity than needed, and so on. In indoor lighting, audio as well as lighting is more controllable. In outdoor shooting a slower shutter speed and smaller aperture size is better to be used.

Activities

1. Record indoor by using different setting of camera
2. Record outdoor by using different setting of camera

Notes for Teachers

- Discuss with students that how videography is different from still photography
- Discuss with students that how indoor shooting is different from outdoor shooting
- Educate students about how to use different types of studio lights and light effects
- Explain videography as a profession

Key Points:

- Videography refers to the use of a camera to record video.
- Videos can be captured by holding camera in hand, mounting on tripod, fixing on quadcopter drone, or mounting on jib etc.
- The basic purpose of lens is to focus the available light so that it can be recorded by the medium.
- Image sensor is a sensor that detects and conveys information used to make video frames.
- In a digital camera, videos are stored on memory card.
- Handheld videography refers to recording the video(s) with the camera in hand.
- Tripod videography refers to recording the video(s) with camera being mounted on a tripod.
- The key light refers to the main light source being used for shooting a video.
- Each light source has intensity as well as colour temperature.

EXERCISE

1. Select the Most appropriate option

A “video” is a series of _____ that are captured and finally displayed in a sequence.

- a. media
 - b. images
 - c. frames
 - d. pictures
2. WMV stands for _____ format:
- a. Windows Media Video
 - b. Web Media Video
 - c. Web Movie Video
 - d. Windows Mobile Video
3. The basic purpose of _____ is to focus the available light so that it can be recorded by the medium.
- a. shutter
 - b. lens
 - c. flashlight
 - d. chassis
4. Chassis of a camera is also called _____.
- a. LCD screen
 - b. camera body
 - c. image sensor
 - d. camera lens

5. A device used to steadily hold a camera while shooting a video is called_____.
- camera body
 - tripod
 - lens
 - camera stand
6. Exposure of camera can be adjusted by changing_____.
- aperture and lens
 - shutter speed
 - ISO and contrast
 - aperture, shutter speed and ISO
7. Main light source used while shooting a video is called_____.
- fill lighting
 - practical lighting
 - key light
 - indoor light
8. At a given position, _____ refers to the power of light.
- white balance of light
 - intensity of light
 - ISO of light
 - Contrast of light
9. Density of camera is measured in _____.
- pixels per inch
 - pixels per centimetre

- c. pixels per centimetre
 - d. points per inch
10. While capturing frames of the video, _____ determines the amount of time the camera sensor is exposed to light.
- a. shutter speed
 - b. white balance
 - c. ISO
 - d. lens

Give Short answer the following questions

1. Define videography.
2. What is white balance of a camera?
3. Name at least four types of videos formats.
4. Elaborate multi camera production.
5. Describe the uses of a tripod in videography.
6. What is the function of LCD screen of a camera?
7. What is a reflector in terms of videography?
8. What is meant by background in videography?
9. Which light is used to highlight midground of a scene?
10. What is the function of lens of camera?
11. Define chassis of camera.

Answer the following questions in detail

1. Elaborate the importance of using different types of lighting systems in making videos

2. Discuss adjustment of focus in videography.
3. What are different components of a camera. Discuss in detail.
4. Describe techniques of videography in detail.
5. Discuss the factors to be considered for location selection in videography.

Chapter # 5

Script Writing



After completing this chapter, student will be able to:

- define script writing.
- know the purpose of script writing.
- know the basic structure of script writing (beginning / setup, middle / conflict, and end /resolution)
- generate different ideas about script writing.
- demonstrate story telling.
- develop plot of story (dialogue, scenes and formatting.
- know about working on story board.
- learn about scripts for tv commercials.
- know techniques of scripts for reporting.
- comprehend the structure of script for documentaries.

5. Script Writing

5.1 Introduction

The word Script is derived from the Latin word *scribere*, that means "to write". We may write a script for a film, a movie, a play, a school drama, a wedding function. Even the grocery list you write was also considered as script in old fashion. However, in the modern era, script writing is the process of lettering stories in the screen play. Script writing is also known as screen writing.

Scriptwriting is the process of writing down the movement, actions, expressions and characters in screen play format. Mostly writers pen down for films, video games, commercials, screen plays, television, online web series, commercials, documentaries and reports etc. We need to understand that writing a novel is entirely different from writing a screen play. So, if you write a simple sentence, it would not be understandable until we add some more elements in it like adding flashbacks of pasts etc. For example, if a writer writes an ad of a washing powder, the writer needs to take care this script depicting cleanliness, healthiness, quick stain removal, freshness and ease of use etc. The ad duration is normally 15-90 seconds. The scriptwriter has to deliver all these messages within this short frame of time in the mind of audience. Another example of this is sad scene of a drama. It is the responsibility of the script writer to pass the feelings of grief in the audience. They may use depressive words, set up in the room, past flashbacks etc.

Types of Screen Plays

The six main script types are:

- Cinematic Film script
- Live-Action TV Series.
- Short-Form Film and Video Content
- Animated TV Series like cartoons
- Video Games.
- Short Web Series and Mini-Series.

5.2 Purpose of Script Writing

Pacing scenes for screen is always challenging. The first most important step to create any video project is screen writing. It is equally necessary for each type of project i.e., motion picture, a webinar, short training video, YouTube video etc. Script actually describes each shot and dialogues of the video. Script is not only limited to writing dialogues. It is a complete package of planning the entire video. It involves dialogues, expressions, locations and all other things for each shot.

Some basic questions that each script answers are:

1. What is going to be shot in the video? (Main purpose)
2. Where this scene is going to be filmed? (Location)
3. What is going to happen in this second of film? (Time frame)
4. What dialogues are going to be delivered in this shot by actor or voice over? (Dialogues writing)
5. How much action will happen in this shot? (delivery /acting)
6. Is the shot really depicting the real idea what the writer wanted to convey? (Final results)

The script answers all these questions for every second of the screen. So, by this we conclude that a script is basic ingredient to any screen project. We cannot work without a script. Having a script in hand makes it really easy to shoot. It not only saves time but a huge expense as well.

5.3 Basic Structure of Script Writing

There are various structures of screenwriting. But the most common used is the classic one. It is also known as Three Act Structure. It is the most common used structure. The reason of its excessive use is its simplicity. Everything, has, for sure, the start, middle and the end. It works on the same frame. The classic structure divided the screen play into three parts. The parts are the set-up, conflict, and resolution. Numerous screenplays and films follow this format. This is a basic go-to-structure for each film of cinema. No film can be said completed without this structure.



Numerous screen and script writers and consultants have written volume of books on writing script and handling it properly. While the story of films and plays may differ, but the basic layout of the plot remains the same. It includes a beginning, a mid and end, shaped and paced by few elements or moments.

Setup

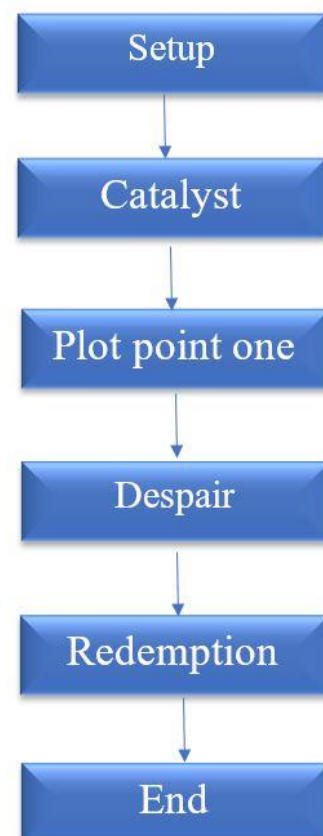
Setup is the start of your screenplay. Setup is the introduction to your film, it consists of the opening image, defines characters of the story and the main idea of the film. It needs to be interesting so the reader and viewer both remain engaged in the story. The setup usually takes start pages with lots of visual and emotional drama to keep the audience engaged. Making it clearer we are not talking about the turns and twists of the story, just the main idea is enough to keep captivating. One great example of setup is the trailers we see before films. They mention actors, main idea and starting line of the film.

The Catalyst

The catalyst is actually ‘Call to Action’. It is the **event** that **makes** your protagonist part of the story. It can be a piece of information or an event that drives the main character which is usually named as “hero” of the film to set the rest of the story events in motion.

Plot Point One

We need to plot a point to mold the story. It is the turning point of the story, which is commonly named as intermission of the film. Usually, in films and plays the hero ushers into second act. He leaves his normal world and commits to begin the new life of story. In screenwriting, the end of act one is where the hero reaches their first major turning point.



The Despair

This is the disappointment point of the screen act. All the hopes and good wills are lost. The main character feels disappointed and aimless. The goal of the hero seems to be unreachable. The external and internal conflicts are heightened and main character reaches low point. This is where the heroes feel defeated, and perhaps they won't succeed in their endeavors.

The Redemption

At this stage, the main character either conceive of a winning plan or the hero is emotionally strengthened to solve the problem and resolve conflict once and for all. We can say this is the energetic stage to defeat the problems. **As** the redemption **progresses**, the hero pushes forward with an attempt that might save the day.

The End

This is the wrapping stage of your script. It is not necessary that story should reach a happy end or a neat button ending. The end should give a conclusion or sense of closure. The end is the most important part of any screen play. People usually carry the end part in their minds to their homes. We may not exactly remember the whole story of the film or dramas after few years of watching. But we may easily remember its ending. The scriptwriter should keep the end more engaging for viewer.

5.4 Generating Different Ideas about Script Writing

The first step of script writing is generating an idea. Idea generation is the key to write a solid script. It is like putting the train on track. Being human, we may have many ideas or may take inspirations to generate ideas. Here are few inspirations for idea generation for a screen play:

- **Surrounding Real Life Events**

The easiest and common way to take inspiration is your own life. You can write on the happenings related to you or your surroundings. Sharing travel experiences, life stories, sad and happy moments and cultural differences are a good way to start with.

- **Media Inspiration**

Media plays a vital role in inspiring youth. It is a common practice to take inspiration from films, music, peer groups and adapt them in your own way. Tiktok challenges like Ice bucket

challenge is one of the popular inspirations from media. Usually, films carry same genre and code, like love and horror films. It is easy to write on defined norms and code.

- **Be Your Own Inspiration**

You can write about your own happy and sad moments. Biography and lesson-based scripts are written by people with great pain or happiness.

- **Work Backwards**

You can write your script on your passion. Twitch is the new social media that is promoting people to play video games with voice over. This is great technique for people who love video games.

- **Stick to a Typical Genre**

Some people write scripts for all types of work. But few restrict themselves to a specific genre like romance, horror, entertainment, history or action etc. Writing in one domain makes it easier to play around in the start of the career.

Examples of scripts based on ideas generation

- | | |
|------------------------------|--------------------------------|
| 1. Based on a true story | Joy, The Wolf on Wallstreet |
| 2. Influenced by other films | Star Wars, Kill Bill |
| 3. Based on legends | Mulan, Gladiator |
| 4. Based on a novel | Dexter TV series, Blade Runner |

5.5 Story Telling

Storytelling or narrative is a method to present connected events to tell an interesting story. A great narrative unites sets of distinct concepts, ideas or plot into a narrative essay, novel or film. Narrative is an ancient practice from people talking and sharing their daily basis stories and poetries.

Types of Narrative Writing

Linear Narrative

In linear narrative, the scenes and events are presented in the order of which they are occurring. In linear narrative, scenes are created by delivering the dialogues of the first person, second person and third person in order. The reader discovers the events of the character's life unfold in chronological order.

Non-linear Narrative

In non-linear narrative the events of the story are not presented in order of happening. In this type of narration, the scenes are clarified with the help of supporting elements. We often visualize flashbacks and other fictitious devices to shift the chronology of a story. Novels are true example of non-linear narrative. These types of projects usually build the feeling of suspense throughout the project.

Quest Narrative

In quest narrative, the story is usually based on one main goal and its achievement of the character. The character works tirelessly to achieve its goal. In this type of narration, the character is in another space like foreign or any island and the issue is situated in another land. The hero faces great difficulty to reach the desired location and achieves his goal.

Viewpoint Narrative

Viewpoint narratives are usually a type of narration designed to express the opinions of viewpoint or personal experience in the story. All the moods, feelings, and other sensory details are presented through the narrator's own life and thinking.







5.6 Develop Plot of Story

Once the script is ready and checked, now it is time to plot the story. Although, script has given us a lot of information about when and how of the project. Plotting the story now involves producers, directors, and management boards to actually visualize and plot the project. Each task is assigned

to a team. In narrative writing, a plot is the sequence of events that make up a story, whether it's verbal, written, filmed, or sung. The plot is the story, and more specifically, how the story develops, unfolds, and moves in time. Plots are typically made up of five main elements:

1. Exposition: At the beginning of the story, characters, setting, and the main conflict are typically introduced.
2. Rising Action: The main character is in crisis and events leading up to facing the conflict begin to unfold. The story becomes complicated.
3. Climax: At the peak of the story, a major event occurs in which the main character faces a major enemy, fear, challenge, or other source of conflict. The most action, drama, change, and excitement occur here.
4. Falling Action: The story begins to slow down and work towards its end, tying up loose ends.
5. Resolution / Denouement: Also known as the denouement, the resolution is like a concluding paragraph that resolves any remaining issues and ends the story.

5.7 Working On Storyboard

			
Scene 1 Wide to medium zoom in on door	Scene 2 Medium of mom, dad, & kids leaving and saying goodbye	Scene 3 Mom & kids get on escalator	Scene 4 Mixed shots on escalator and calm elevator music
		Are you going to extremes to keep your family safe on winter roads?	Make it easy this winter www.abctires.com
Scene 5 Medium shot stepping off escalator into truck	Scene 6 Long shot of monster truck driving away	V.O. Same ↑	V.O. get the #1 rated all season tires at ABC Tires
		Scene 7 Slide	Scene 8 Slide

The story board is similar to any organizer, that graphically arranges your script. They are a powerful method to present script in the form of graphics. Each scene is visually described with the help of drawings call by cell. Each cell presents the story, explain the happenings, and presents the passage of time. They are the sequential drawings to narrate the story. Story boards are bit sized chunks that allows the author to pay attention to each cell of the script.

5.8 Script for Tv Commercial

The time span of TV commercial is short. The time to win over the target audience lies between 15, 30, 60 or 90 seconds at maximum. A well-paced TV commercial script can only be conveyed in this little time.

The best commercials scripts can be achieved by defining a clear storyline, the obvious tone for the target audience, an engaging theme, and a clear call to action. The below picture depicts the story with timeline.

SIUE Advertising
1 Hairpin Dr.
Edwardsville, Illinois
BROADCAST DEPT.

CLIENT: Big Brothers Big Sisters
PRODUCT: House Raffle
WRITER: Gerry Butler
LENGTH: 30

VIDEO	(SHOW TIMES)	AUDIO	(TRT)
<u>FADEUP ON:</u>		<u>FADEUP ON:</u>	
1. WS OF GERRY OPENING DOOR WALKS TO COUNTER	(:02)	1. <u>MUSIC:</u> (LOW UPBEAT MUSIC PLAYING IN BACKGROUND)	(:02)
<u>CUT TO:</u>			
2. MS OF DAWN AT COUNTER	(:02)	2. <u>DAWN:</u> How can I help you?	(:04)
3. MS OF GERRY'S FACE	(:03)	3. <u>GERRY:</u> Hi, I saw a sign for a house raffle...? What's that about?	(:07)
4. MS OF DAWN	(:04)	4. <u>DAWN:</u> That is for the 23 rd annual House Raffle right here! Just \$100 will enter you in the drawing!	(:11)
5. CU OF GERRY'S FACE	(:02)	5. <u>GERRY:</u> But what will I win? A House?!	(:13)
6. CU OF DAWN TALKING	(:04)	6. <u>DAWN:</u> Exactly! 1 st place winner wins a HOUSE! But it doesn't stop there. We select 44 other winners who receive a cash prize! But you better hurry there is an early bird drawing of \$1,000!	(:23)
6A. CU OF GERRY LOOKING AT PRINT AD	(:03)	7. <u>GERRY:</u> Oh my goodness! Let me go run and get my check!	(:26)
6B. MS OF DAWN TALKING	(:03)		
7. WS OF GERRY TALKING THEN RUNNING OUT OF DOOR	(:03)	8. <u>VO:</u> For more information visit our website at www.bbbsil.org	(29.5)
<u>DISSOLVE TO:</u>		<u>MUSIC:</u> FADEOUT UPBEAT MUSIC)	
8. FULL SCREEN ADVERTISEMENT FOR HOUSE RAFFLE	(3.5)		(30)
<u>FADE OUT:</u>			
	(0.5)		

Defining a Clear Storyline

A simple screen story can never be boring because It's always easy to understand it. The beginning, middle, and end of a script should be in a logical sequence and clear. Unique and interesting stories capture the audience quickly, introduces tension and provides with a solution in the end.

Many TV ads follow approach of pain and solution point. We need to develop an emotional response in the audience. Emotional response is a blend of both visual and audio running together.

Set the Tone

A funny commercial is enjoyed by everybody. But in real life, it is the most difficult script type for client's approval. It is difficult to find the right tone and align it with the brand. You need to select words that resonates with the target audience. In the month of Ramzan, we see usually donation ads and tone is spiritual in those ads.

Types of TV ad tone may be: Powerful, interesting, happiness, energetic, reliable, trustworthy and sophisticated, classy, sincere, or soothing etc.

Pick a Call to Action

The brand develops an awareness in ad and then translate into a tangible call to action. If a script does not have a call to action, it is failure for sure.

5.8 Script For Reporting:

Scripts for reporting are different from script of a TV ad. In reporting there are no stories, but, the facts about the event or incident. In the start of the news, the reporter usually greets the viewers, tell date and time, goes for headlines in the beginning, the then reports the news in detail.

Elaborating The Headlines

After the small greeting and the main headline, now the reporter starts with brief description of each headline. The first headline is the most important and surprising.



After the first phase of headline short greeting, the reporter opens up on headlines. Initially, they start with shocking and major topic to grab audience attention. It has a very limited period of time but more than TV ad.

5.9 Script for Documentaries

Scripting a documentary is unique in its own. Documentaries may be based on real time scenarios, animal habitat, and people living in rural areas or special ethnic groups. We can only have a major goal of the documentary. The script is only shortened to main idea, location, setups and time. What to say and how to say is usually determined on the set. Editing software are used to cut the pieces that are not suitable according to the goal. Most documentaries are funded by the relevant organizations or NGO's.



EXERCISE

Select the Most appropriate option

1. The average time span of a television commercial is between ____ to _____ seconds.
2. Script writing is the process of writing down the _____, expressions and characters in screen play format.
4. Script is a complete package of _____ the entire video.
5. A _____ ad is loved by all
6. Storyboards are used in business to show _____.
7. The news caster first _____.

Give Short answer the following questions

1. Define script with examples.
2. What questions do a good script answer?
3. Discuss basic structure of script writing.
4. Describe any two steps of writing a script in detail.
5. What are types of narration writing.
6. Describe storyboarding in detail.

Answer the following questions in detail

1. Draw the flow diagram of TV commercial in detail.
2. Write down steps of reporting in detail.
3. Write a script based on moral story.
4. What is storyboard and why it is used?
5. Describe types of narrative writing.

Chapter 6

ADOBE AFTER EFFECTS

(BASIC)



After completing this lesson, students will be able to: -

- Define Adobe After Effects.
- Describe purpose of Adobe After Effect.
- Know about installation steps for Adobe After Effects Software.
- Learn about source material (audio, video, still image)
- Understand concept of the file extension.
- Use Motion Graphics
- Know the attributes of Motion Graphics
 - RGB Color Model
 - Frame size of the composition
 - Resolution.
 - Pixel Aspect Ratio.
 - Alpha Channels
 - Frame Rate
 - Time Code
 - Interpreting Footage
- Start working in After Effects
- Create a new project
- Customize workspaces
- Set a project by using attributes of motion graphics
- Add a composition and arrange layers
- Know types of shapes.
- Comprehend working of the following Time remapping
 - Create Custom Shapes.
 - Know about default properties of shape layers
 - Add/ Edit properties.
 - Create shape groups.
 - Learn about Masks.
 - Create a mask with Pen tool.
 - Edit mask as per requirement.
 - Learn about feathering the edges of a mask.
 - Learn to replace the content of the mask.
 - Understand mask interpolation.
 - Learn about Text Animation.
 - Create and format point text vs. paragraph text.
 - User Animation preset.
 - Learn Text Animation on the path.
 - Animate imported Photoshop text.
 - Animate text using a path animation preset.
 - Describe Puppet tool.
 - Understand Deform pins.
 - Define areas of overlap.
 - Understand stiffening an area.
 - Animate pin positions.
 - Record animation.

- Motion sketch.
- The smoother.
- The wiggler.
- Auto orient.
- Splitting a layer.
- Adjustment layers
- The effects and presets panel Import video clips.
- Import stills.
- Import a sequence of stills.
- Import multilayered Illustrator file.
- Import multilayered Photoshop files.
- Apply Composition as per requirements.
- Apply effects to a layer
- Change parameters as per requirement
- Create keyframes (auto, Continuous, and Bezier Temporal and spatial)
- Learn about Roving
- Learn Animation preset
- Preview your work
- Learn creating Templates for the Render Queue.
- Templates for Render Queue.
- Export using the Render Queue
- Render movies using Adobe Media Encode

6. Adobe After Effects

6.1 Introduction

Adobe After Effects is a 2D and 3D animation software used to create animations, visual outcomes, motion graphics, compositions and other post-production work.

Animation

Animation is a methodology within which figures are manipulated seem like moving pictures.

Composition

Compositing is the method or technique of mixing visual components from different sources into one unite image, typically to create an illusion that each one of those elements is considered as parts of a similar scene.

Visual Effect

In filmmaking, visual effects (VFX) are the creation or manipulation of any on-screen imagery that does not physically exist in real life. VFX allows filmmakers to create environments, objects, creatures, and even people that would otherwise be impractical or impossible to film in the context of a live-action shot Purpose of Adobe After Effects

6.2 Purpose of using After Effects

After Effect is a multipurpose software having many interesting features to create attractive productions. Major purposes of using it are: -

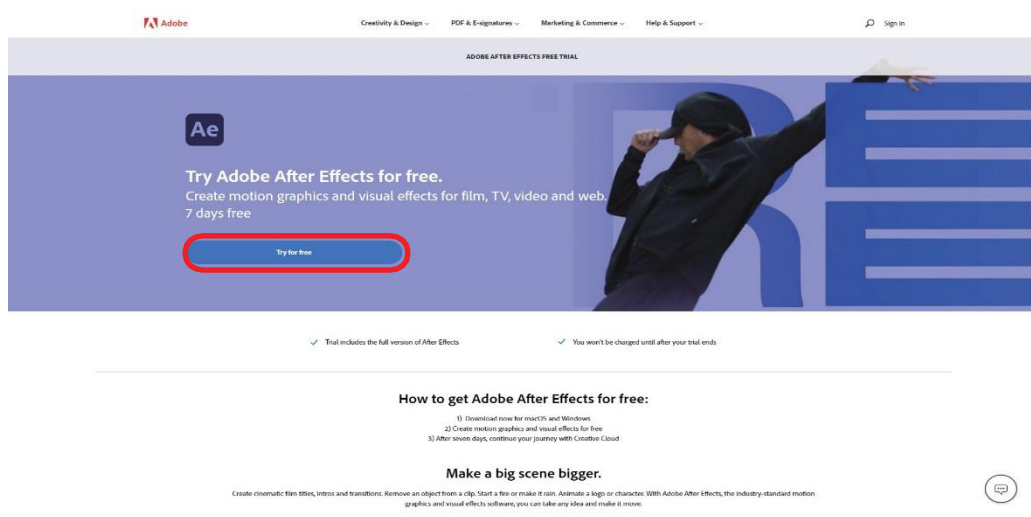
- Create cinematic movie titles, intros, and transitions. Remove an object from a clip. Start a fire or make it rain.
- Animate a logo or character. Even navigate and design in a 3D space. With After Effects, the industry-standard motion graphics and visual effects software, you can take any idea and make it move.
- Animate titles, credits, and lower thirds. Start from scratch or with presets available right from the app. From spin to swipe to slide — your text is on the move.

- Set anything in motion with keyframes or expressions. Or use presets to kick off your designs for unique results. Change a scene’s setting. Add a moving object. Make selective color adjustments. Or choose from hundreds of presets and effects to quickly bring your videos to life.

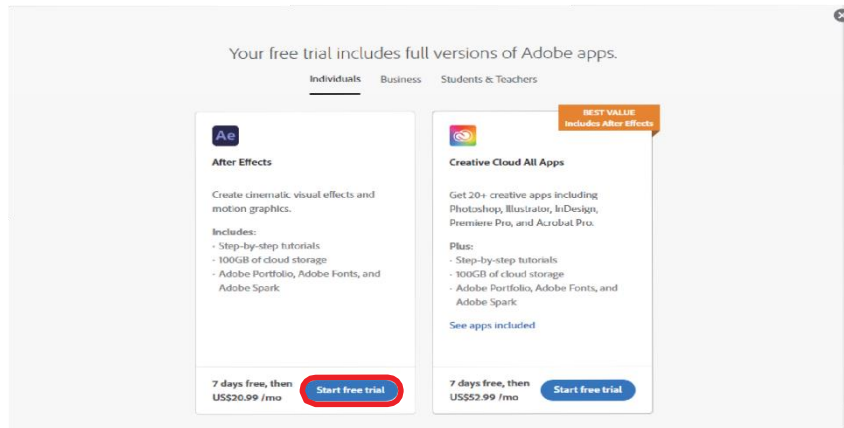
6.3 Installation:

The installation of the software can be done easily from adobe.com website.

Step 1: Go to the URL <https://www.adobe.com/products/aftereffects/free-trial-download.html> as, shown in figure.



Step 2: Click on the “Try for free” button, you will be redirected to the next page, where you will be asked to choose between After Effect or all the creative cloud applications. Click on the “Start free Trail”, as shown in figure



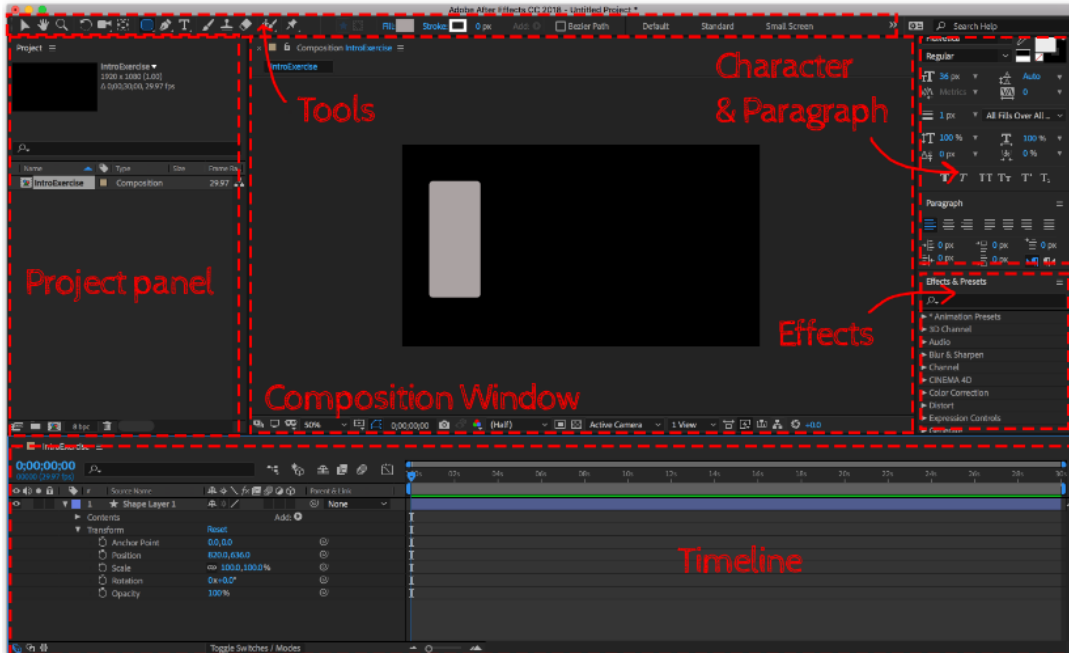
Step 3: On the next page, you will see the complete payment summary. Enter your email ID and other credentials and click on continue.

Now you can start your installed software



Home Screen:

The following figure shows us the home screen and user interface of Adobe After Effects, as shown in figure.



6.4 Source Material

Source materials are the files that are used in After Effects which include videos, images and audio etc. The following terms are explained in detail below.

Audio

Audio is defined as sound, especially when recorded, transmitted, or reproduced. An audio file format/source material is a file format for storing digital audio data on a computer system. The file extension of audio file format includes MP3, WAV, M4A, WMA, so on.

Video

Video is defined as the recording, reproducing, or broadcasting of moving visual images. The file extension of video file format includes MOV, WMV, MP4, F4V.

Still Images:

A still image is a picture in which a grid or formation of image components (pixels) has been mapped to represent a visual subject. The file extension of the still image file format includes JPEG, PNG, TIFF etc.

6.5 File Extension

AEP

An AEP file is a video piece of a written project created with Adobe After Effect. It contains video composition that has audio, image and video clip, a timeline and numerous effect which

will be applied to the movie. AEP files are used for making professional quality video productions.

AET

A guided project is a file with the extension name “.aet”. You will produce templates that are supported by your projects. After effect create a new “untitled project” based on the template. Saving changes to the current project does not have any effect on the template project.

6.6 Uses of Motion Graphics

Graphics design and motion design don't have hard and fast, right or wrong ways to do things like others fields do. It depends on your creative mind and imagination. How will you portray an idea in the form of motion graphics?

Motion graphics are best for outlining or emphasizing facts and illustrating a point you're trying to make. Motion graphics are used when there's no need for narrative or storytelling.

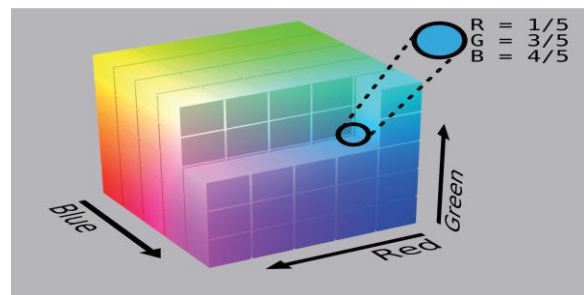
Motion graphic videos can break down your complex services or products and present them in a memorable way. Remember, motion graphics are at their core visual aids, so they excel at teaching hard-to-understand ideas through visuals.

6.7 Attributes of Motion Graphics

Motion graphics is actually graphics style created video. This style combines sound, text, charts, symbols and animation to convey hard information and written information in a compiling and clear way.

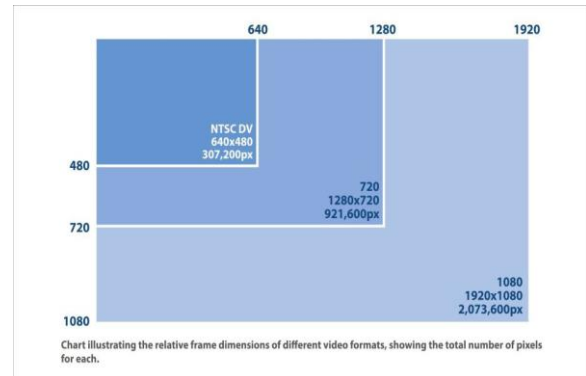
Color Model

The color model is an added substance shading model in which the red, green, and blue essential shades of light are added together in different ways to repeat a comprehensive exhibit of tones. The model's name comes from the initials of the three added substance essential tones, red, green, and blue. RGB colors are primary colors and best for onscreen display.



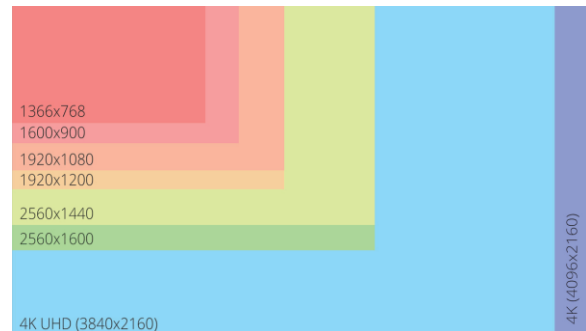
Frame Size

Frame Size portrays the size of a solitary video outline: width x height, estimated in pixels. The width of the frame can be different, contingent upon whether the pixels in the casing are square pixels or non-square pixels. PC designs utilize square pixels, though camcorders utilize non-square pixels. If making illustrations for video along these lines, utilize the square pixel outline size as shown in figure 6.10. To create a video, sequential pictures are used in frames per second technique.

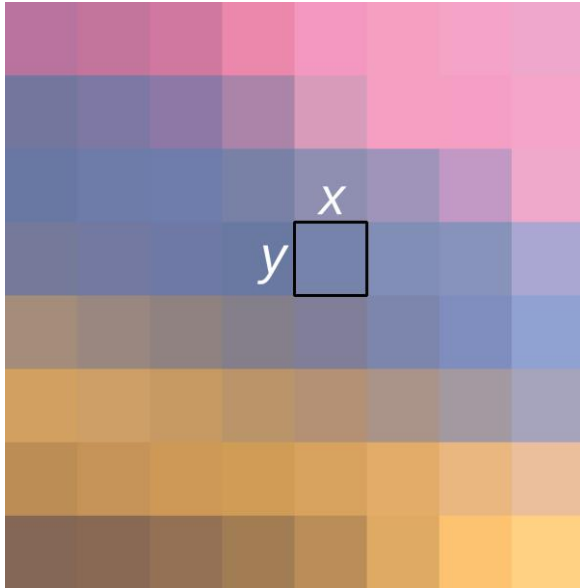


Resolution

The resolution is the number of pixels (individual marks of shading) contained on a presentation screen, communicated by the number of pixels on the lever pivot and the number on the upward hub. The bigger the screen, typically the higher the number of pixels it upholds. The higher the screen resolution means that more objects can be placed on one screen (but smaller in size).



Pixel Aspect Ratio



Pixel Aspect Ratio portrays the connection between the width and tallness of a solitary pixel. Distinctive pixel angle proportions are the justification for why two video pictures with indistinguishable casing sizes can show up as various sizes on screen. Simply, aspect ratio means the dimensions of the picture. These may be square 1:1, wide 1:4 or extra-wide 1:9.

Alpha Channels

Consider it like an imperceptible fourth channel, which saves any straightforwardness settings for the picture. Alpha channels also allow you to confine a specific part of your frame, so it can be altered and stored for later use. An example of the alpha channel is shown in figure 6.13. Alpha channels are used to create transparent (see through) images / part of images.



6.8 Working with After Effects

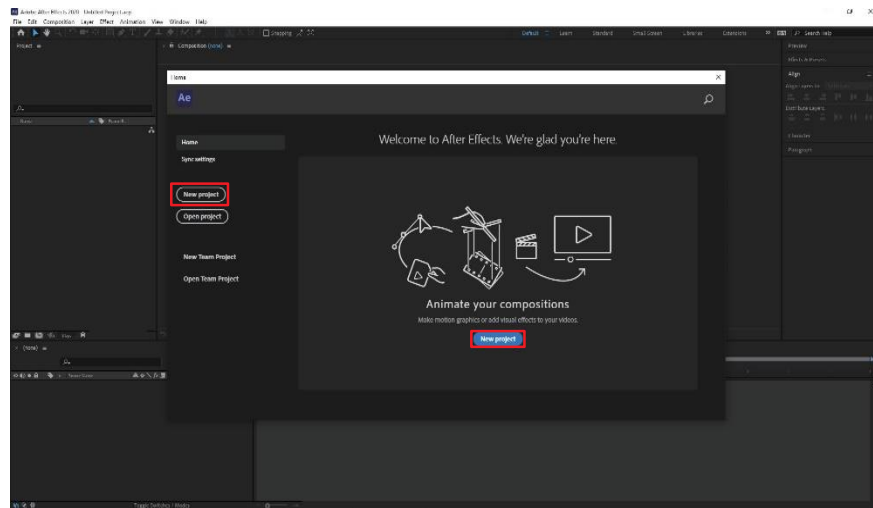
Adobe After Effects is a great software to produce quality videos in less time. Now, you will start working on your first project, customize workspaces, and add compositions.

6.9 Creating a new project

Following are the steps to create a new project.

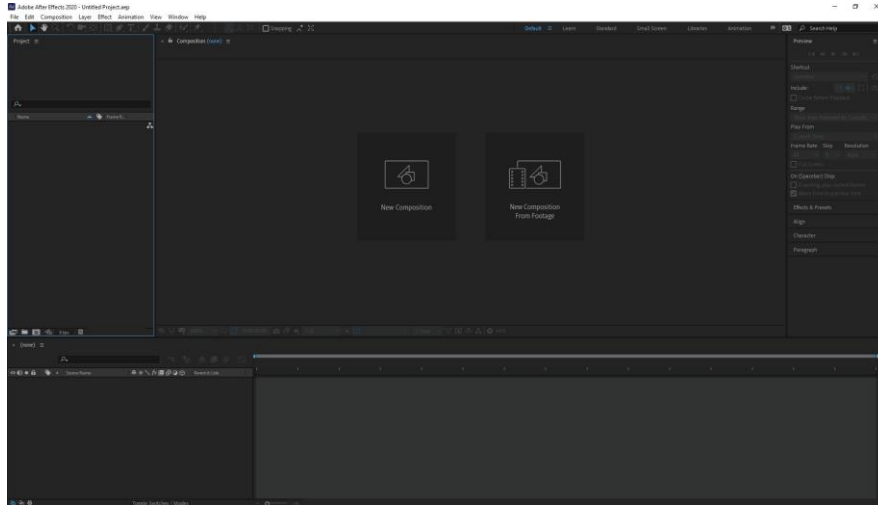
Step 1:

Launch Adobe After Effects. After launching, you see the main interface (workplace). You can see new project buttons as shown in figure



Step 2:

After clicking on the new project button, you are presented with the default workspace of Adobe After Effects. Here you can successfully create your first project, as shown in figure

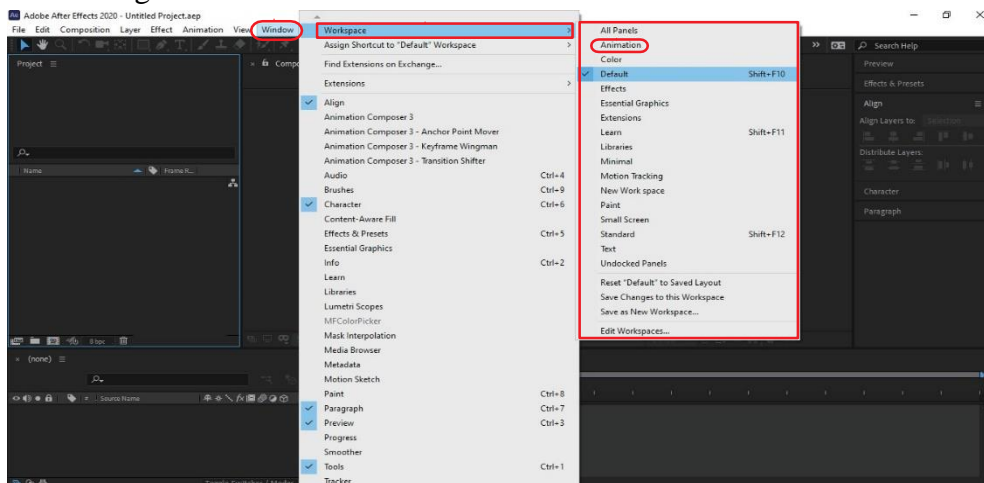


6.10 Customize workspaces

Everyone has their preferences and his / her way of work. Adobe After Effects allows us to customize the workspace according to personal needs. For example, if someone want to create an animation, there is an animation workspace already, which includes essential tools for animation.

Review and concealing boards

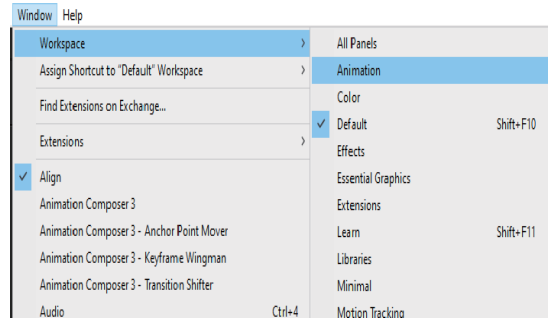
To change your work area, you can open, stow away, move, resize, or dock boards. This usefulness makes the After Effects interface adjustable to meet your inclinations and working style. Following are the means to view and conceal boards.



Step 1:

After clicking on the new project button, if you want to view a panel in your workspace. Follow these steps:

Select Window button > Click on Workspace > Animation to change the current workspace. As shown in figure.

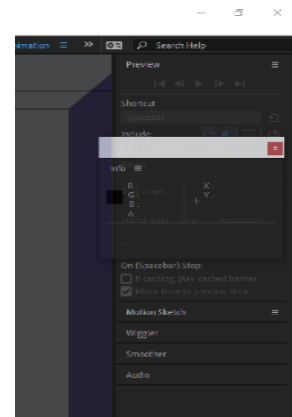


Step 2:

After clicking on animation, you would notice changes, 1st the workspace name has been changed to “animation” and 2nd the workspace panels have been changed as well as shown in figure.

Hiding and collapse panels

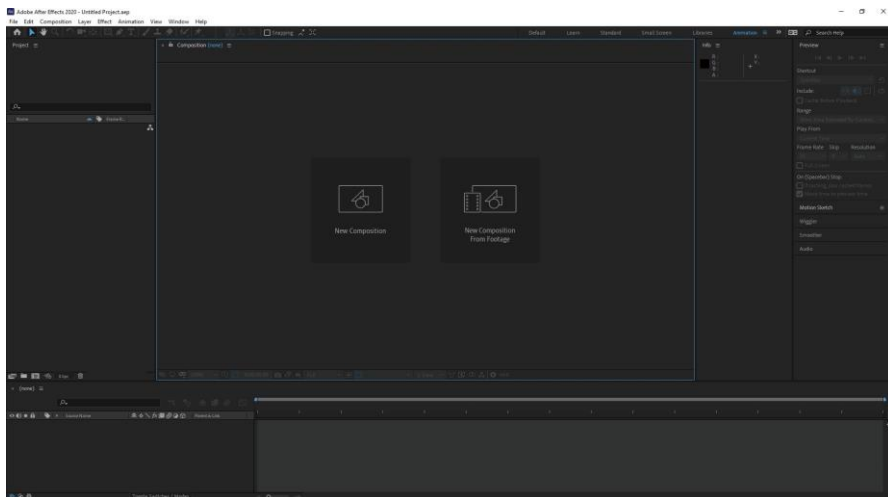
You can also hide unnecessary or not required panels from your current work space, or you can collapse those not required / not in use.



Docking and Un-Docking

Panels are docked to the sides of the application window and stacked one another. This makes a genuinely steady, interlocked interface that can scale to fit a broad scope of screen goals. Periodically, you may track down that the default docked arrangement isn't profitable. In such cases, you can change the default by docking and undocking boards to suit your work tendencies.

Snap the tab at the highest point of the Align board. Press and hold the Ctrl button while hauling



the Align board to the focal point of the screen. This eliminates the board from the docked interface, making it an undocked, or skimming, board as shown in figure 6.20.

Using drop zones

The drop zone is where you can place the panel's Adobe After Effects

Resizing

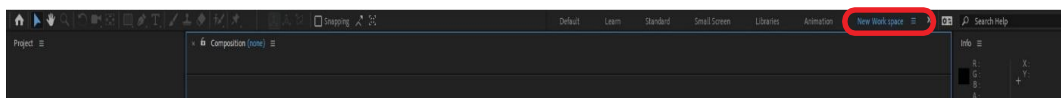
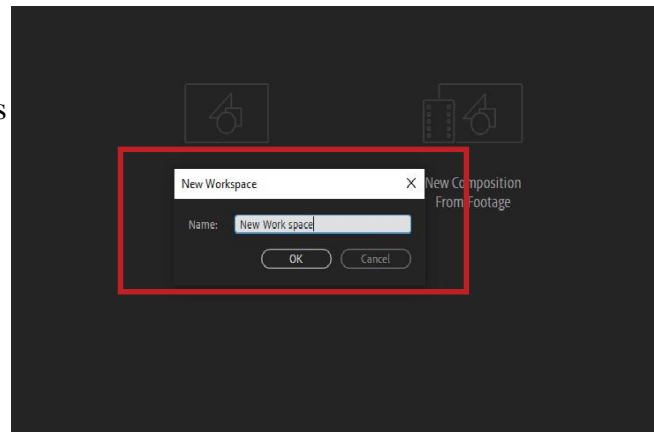
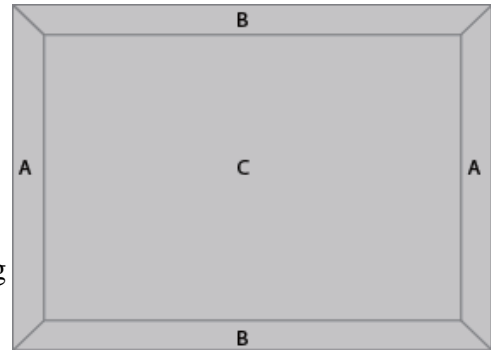
As well as stowing away, opening, docking, and undocking boards, interface let you effectively resize docked boards, so they occupy pretty much room on the showcase. To do this, Spot the cursor on the dim, dark, vertical splitting line between the Composition and Project boards. The cursor changes to a twofold bolt when it is drifting over the isolated line.

Saving workspace

You can save changes of your workspace and save them as a new or revamp the workspace. Custom workspaces grant you to display the panels you require. Here you will save a custom workspace. Steps for saving a workspace are listed below.

Select panels which you wish to be in your new workspace. Close or rest the boards from your workplace. e.g., there are only two panels in the current workspace, and we want to create a new workspace of only these two panels.

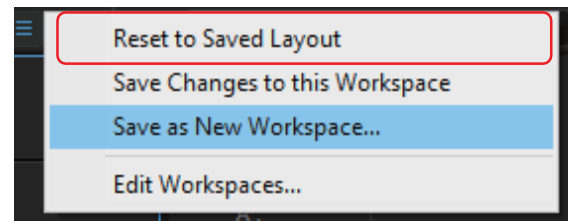
After you clicked either “save as a new workspace” or save changes to current workspace,” a new pop-up will appear. You can give “name” Your new workplace and click OK as shown in figure 6.27.



Your new saved workspace would appear on the upright of your layer bar, as shown in figure

Resetting workspace

If you want to undo the settings of your current workspace layout, you can reset your current workspace setting to default. Select Window button > Tap work Workspace > Select Reset 'Animation' to open the Reset dialog > Click to Rest to Saved Layout.



6.11 Project with Motion Graphics Attributes

So far, we have learned how to create our first Adobe After Effects project without any motion graphics attributes or settings. In this section, we will walk you through how to develop projects based on motion graphics attributes. We will learn how to add our first composition and arrange layers in our timeline.

Before creating any sort of project, first, we need to set the requirement and attributes of that particular project. Which includes setting the framesize, frame rates, pixel shape, time code. Steps for setting project with motion graphics attributes are given below.

6.12 Adding Compositing

A composition in After Effects is almost similar to a film cut in Flash Professional or in Premiere Pro. You render a sequence to make the frames of the last yield film, which is encoded and exported. Steps to add compositing to a project are listed below.

Name the Composition

A new menu will appear after clicking on New Composition button called Composition Setting. This Composition settings contains several options which include composition name, frame size, presets, pixel aspect ratio and frames.

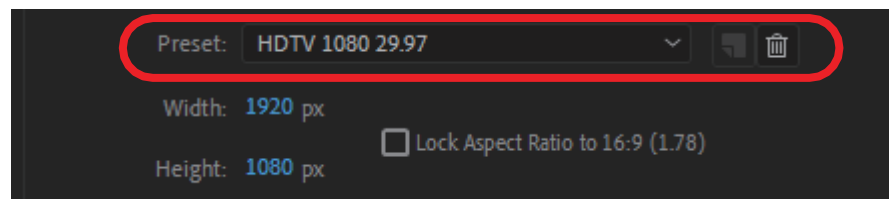
- Step 1:

First set up the composition name, by double clicking inside the box on the right of Composition name as shown in figure.

Composition Name: My_New_Composition

Do you Know:

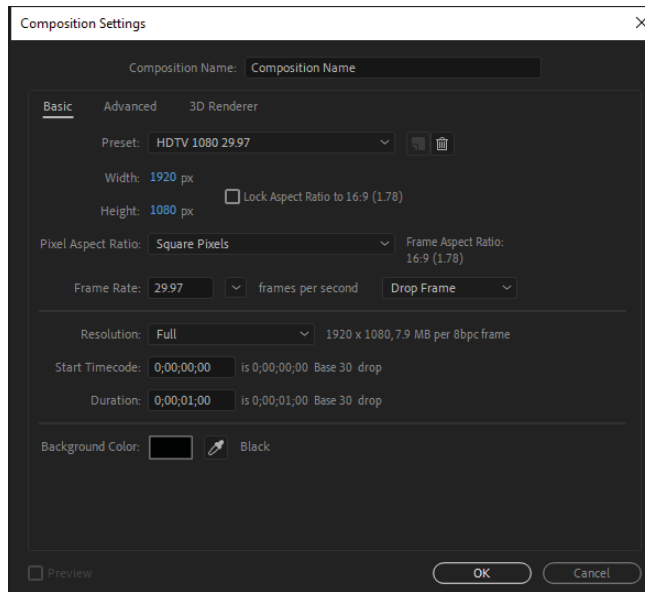
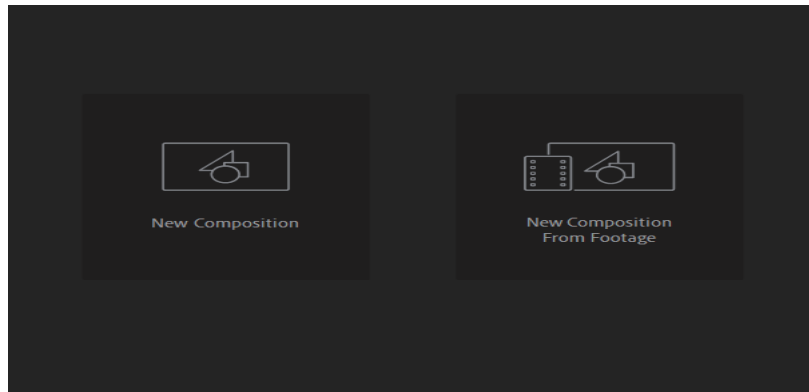
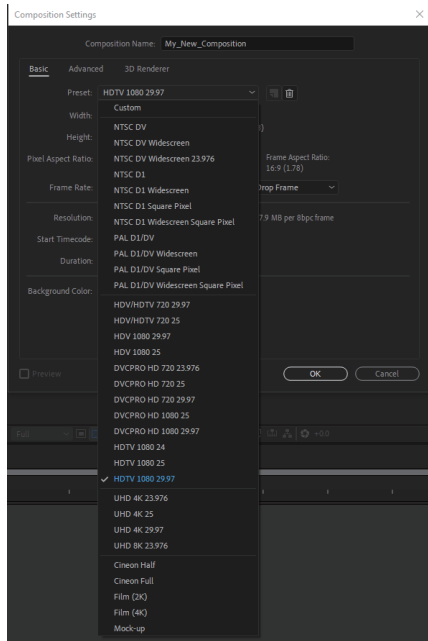
You can set up Frame Size and Frame Rates by using a Presets as well.
PRESETS are already saved frame sizes of different multi-media screens.



A drop-down menu will pop up and you select desired setting according to your requirements. As showing in the figure.

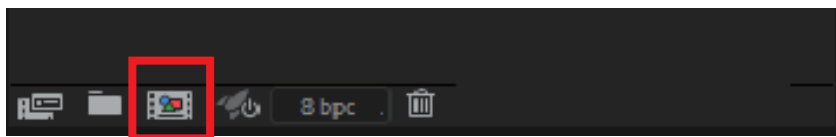
You can create a New Composition in several possible ways. Following are the ways you can create a new composition.

Click on the new Composition button appear in the center of your workspace as shown in figure or Press CTRL + N to createa new Composition.



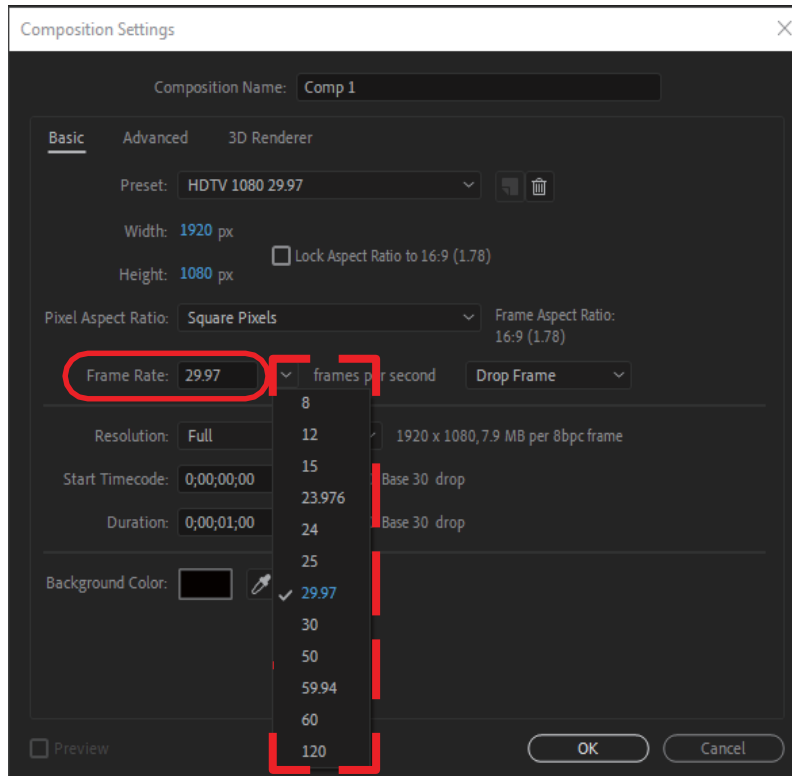
According to the requirements, select your Composition Settings as mentioned in picture below

You can select any preset according to your need



Step 2:

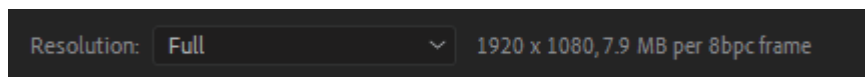
Set up Pixel Aspect Ratio. By default, it is set to “square pixel”, it is utilized essentially in advanced video programming, where movies should be changed over or reconditioned to utilize video frameworks other than the first as shown in figure



Step 3:

After setting up the desired Height and Width of the Frame. The next step is to set the Frame RATE of the composition button as shown in figure.

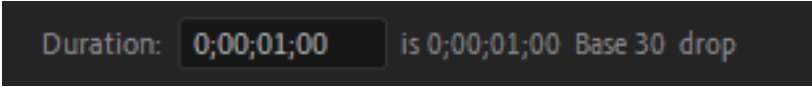
You can enter the number of frame rates manually or click on the arrow and open drop-down menu and then select the required frame.



Step 3:

Rendering resolution is basically a quality of frames shown while preview the media. Remember, this resolution depends on your system capability as shown in figure 6.36.

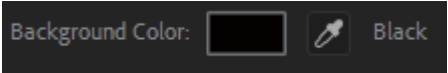
HOURS ; MINUTES ; SECONDS ; FRAMES
00 ; 00 ; 00 ; 00



Step 4:

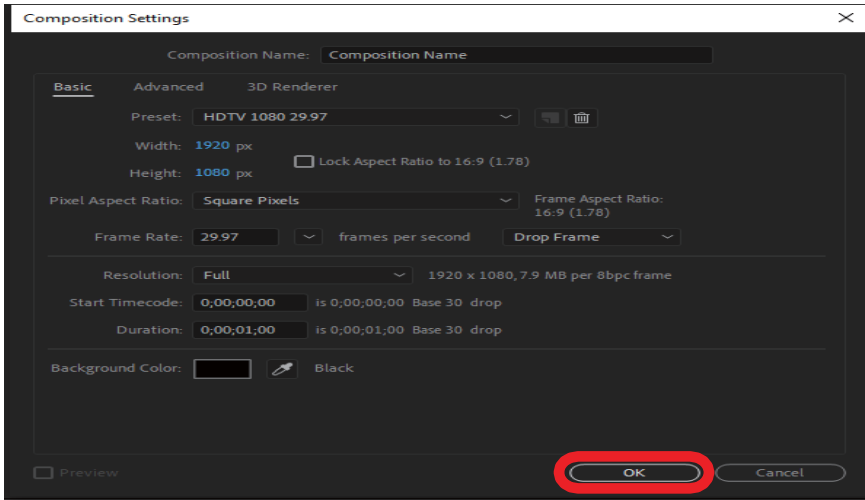
Set the duration of the composition. Duration of a composition means how long your composition would be. Following is the syntax to set duration of a composition. For instance, you want to set duration of a composition to 1 minutes and 10 seconds and 20 frames follows the syntax as shown in figure 6.37 (A) and insert it into the duration box

as shown in figure.



Step 5:

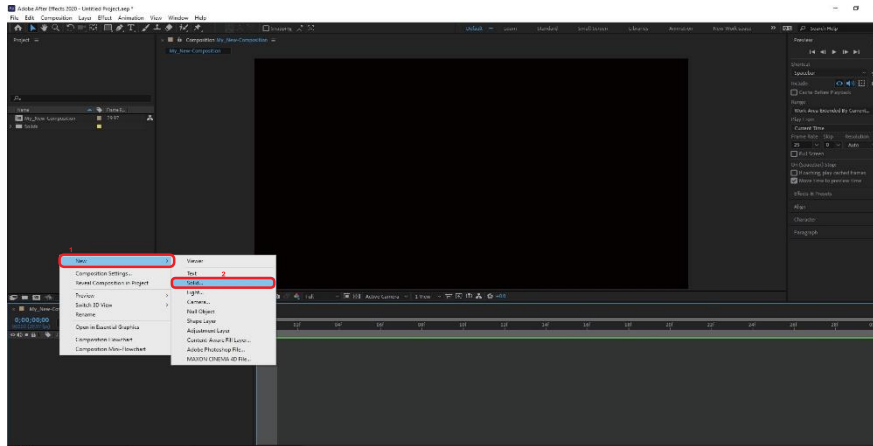
You can also change the background of the composition by clicking on the Background Color Box in figure 6.38.



After you clicked OK button, a regular workspace opened with the composition name on the PROJECT panel on the left side of composition panel as shown in figure below as shown in figure.

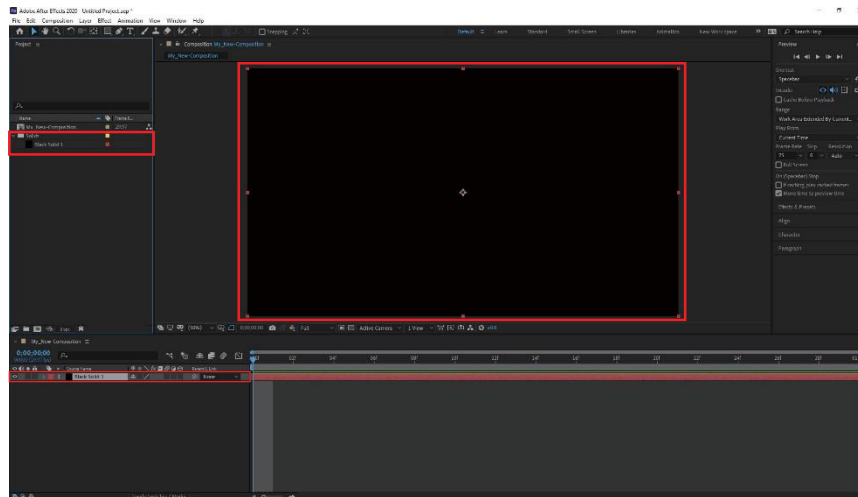
6.13 Arrange Layers

Layers are the components that make up an arrangement. Without layers, the project has no starting edge. Use however many layers as important to make your project. With the help of an example let's look in details what the layers are and how we can add layers in Adobe After Effects composition. After creating a new composition in your project, lets add a “**solid color**” into our time space. Steps to add a layer on a composition are listed below.



Step 1:

After creating a new composition in your project, lets add a “**SOLID COLOR LAYER**”: Right Click on Time-Space > New > Solid > Left Click.



Notice, when you create a solid layer two things that happen. First add new layer is created in time bar and a drop down folder was created in project panel called “SOLID”. Inside that folder there was a solid later named “BLACK SOLID 1” as shown in figure.

6.14 Shapes

Rectangle, Rounded Rectangle, Ellipse, Polygon, and Star shapes offered in the software. Draw a shape straightforwardly in the Composition panel. After Effects adds another shape layer to the composition. You can apply stroke and fill settings to a shape and apply activity presets. Similar drawing tools can make the two shape and mask. Mask are applied to layers to uncover regions or as contribution to impacts. Shapes have their own layers. At the point when you select a drawing tool, you can indicate whether the tool draws a shape or a mask.

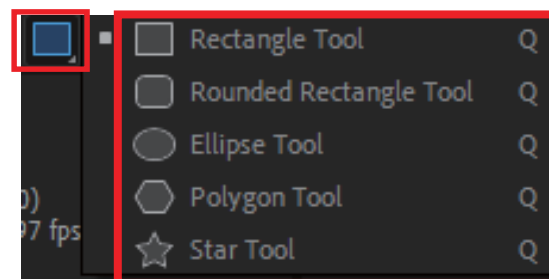
Drawing

We have already understand what are shapes and how many types of shapes After Effects includes. Now let’s see how to draw shapes on a composition. Following are the steps to draw different types of shapes.



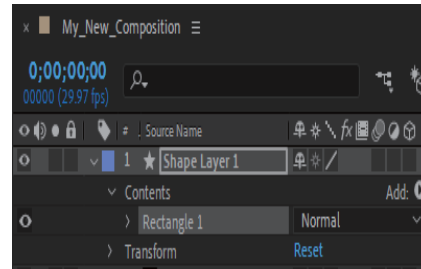
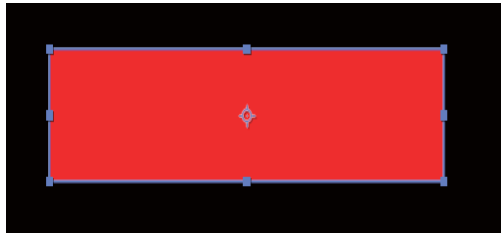
Step 1:

You can locate different types of shape tools visible on top of the tool bar as shown in figure 6.42.



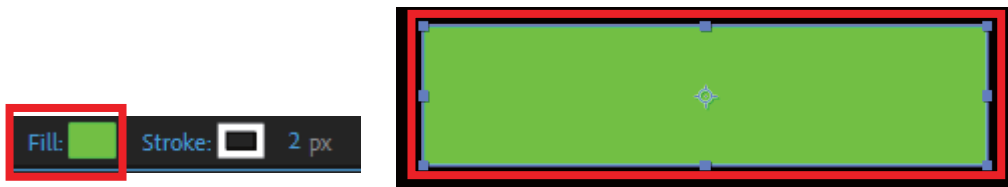
Step 2:

Click and hold the rectangle shape to expand the full tray set of shape as shown in the figure.



Step 3:

Drag down to one side to make the shape. The shape appears in the composition panel, as shown in figure. The following layer has a tag called “SHAPE LAYER 01” is also added to the timeline panel as shown below.



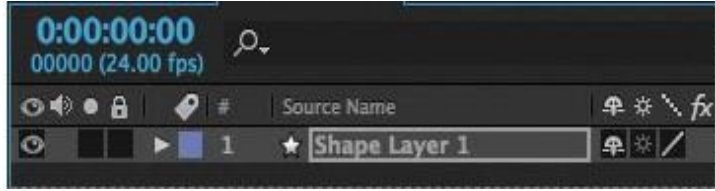
Step 4:

You can change the color of a shape by modifying its Fill settings in the Tools panel. Clicking on to the Fill box opens the Color Picker if the fill is solid, or the Gradient color. You can change the outline color and width of a shape by adjusting its outline (stroke) settings in the Tools board. To change click on Stroke and menu will pop up, then you can apply changes to the stroke of the shape as shown in figure 6.45 (A) and figure 6.45 (B).

6.15 Custom Shape



You can utilize the five tool to make a wide variety of shapes. Nonetheless, the genuine force fit as a fiddle layer is that you can draw any shape. You'll utilize the Pen tool to draw a shape that takes after a tick mark.



Step 1:

Draw a shape that matches with a TICK mark, show in figure 6.47(A). At the point when you make the primary vertex After Effects naturally adds a shape layer to the Timeline board as shown in Figure 6.47.



Step 2:

To draw a tick shape using pen tool, follow these steps:

Select Pen Tool > Click in the middle of composition > Drag as show in the figure below.

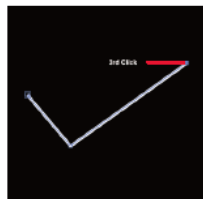


Figure 6.49 (A)

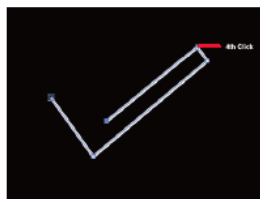


Figure 6.50 (B)

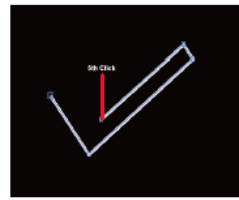


Figure 6.49 (C)

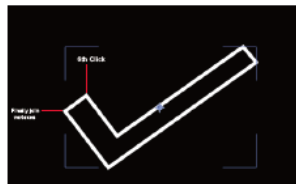


Figure 6.49 (D)

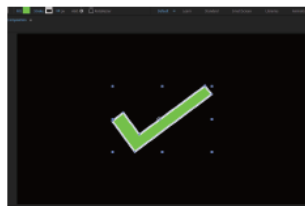
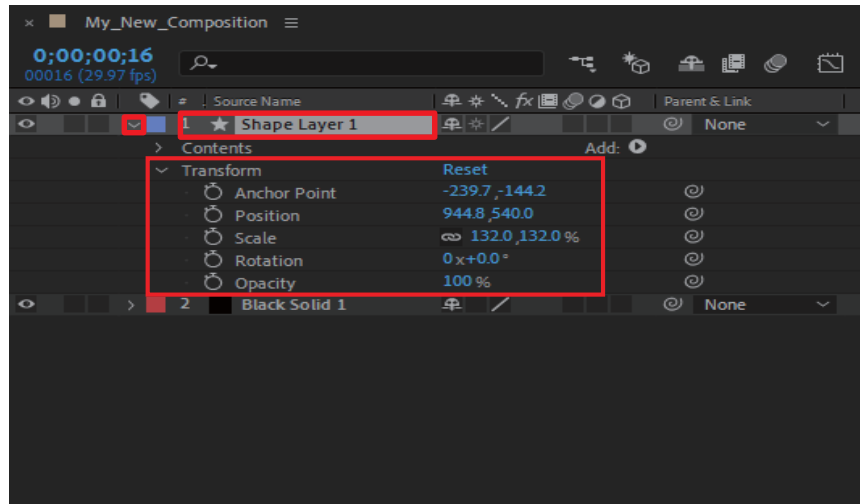


Figure 6.49 (E)

Step 3:

Repeat this step until you can draw a TICK shape as shown in figure. Apply fill color and stroke as shown in above sections.

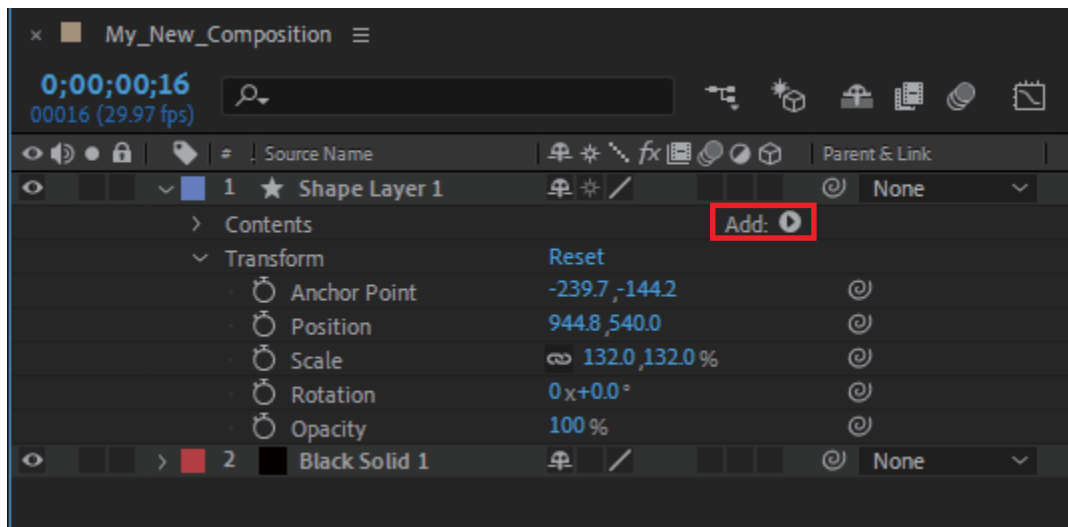
6.16 Default Properties of Shape Layer



Default properties of shape layer includes, “**anchor point, position, scale, rotation, opacity**”.

To view these properties, follow the steps listed below: Choose Shape Layer > Click Drop Arrow on left side of selected shape layer, after that selected shape layer default properties will expand as shown in the Figure 6.50.

6.17 Add New Properties to Shape Layer



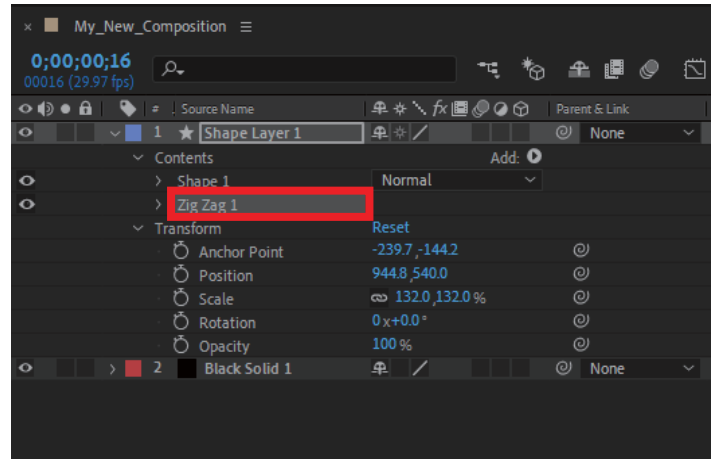
After effects allows us to add properties to shape layers. Which can give artists more flexibility to work and customize their content.

Step 1:

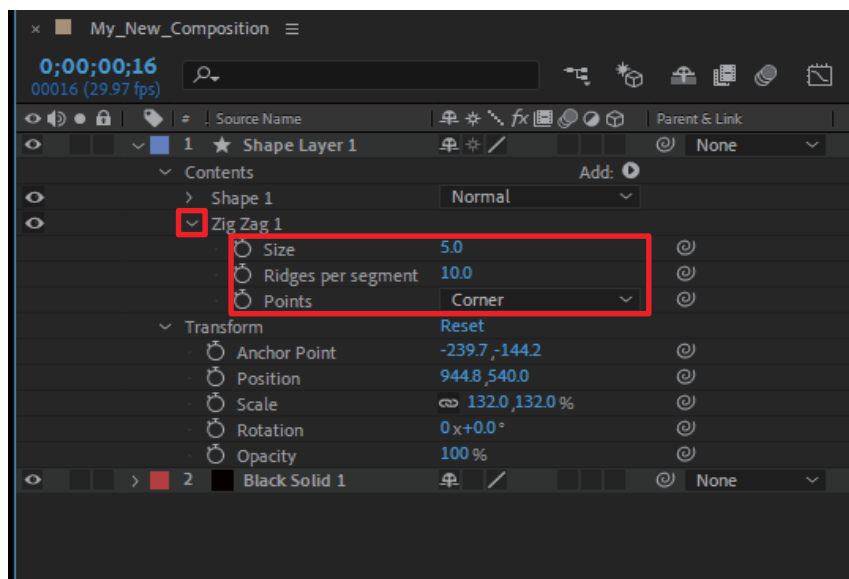
Select the shape layer > Tap to expand transform properties.

Step 2:

After clicking on “ZIG-ZAG” property, you will notice a “ZIG-ZAG 1”

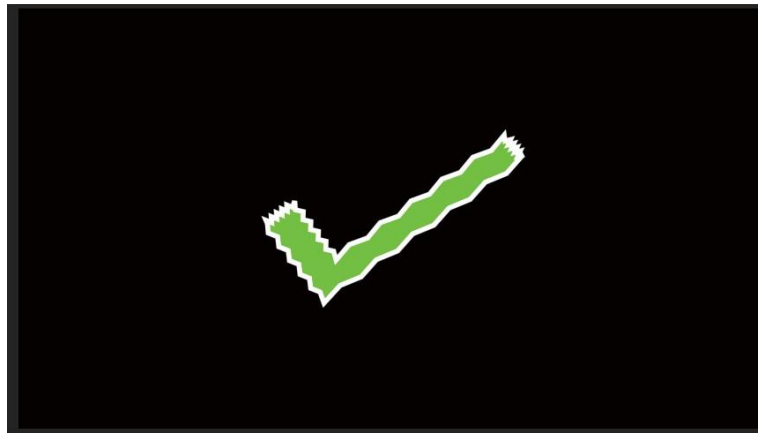


Edit New Properties Shape Layer



We have added new property into the shape layer as shown in figure 6.54 above. Adobe After Effects allow us to customize new property “ZIG-ZAG” attributes as well. To customize attributes of new property, follow the steps listed below:

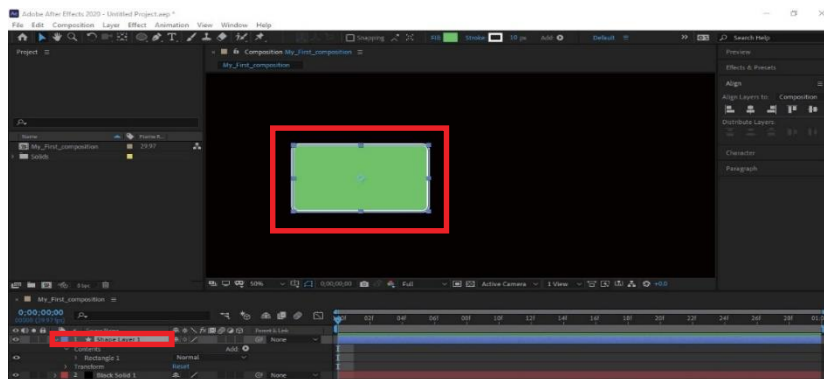
Click on left side arrow of ZIG-ZAG 1 as shown in Figure 6.4.21 > Drop down menu will pop up as shown in Figure > Click any of the attributes to change its values as shown in figure 6.54.



You will notice that the “ZIG-ZAG” property is already applied to a TICK shape layer as shown in figure 6.55.

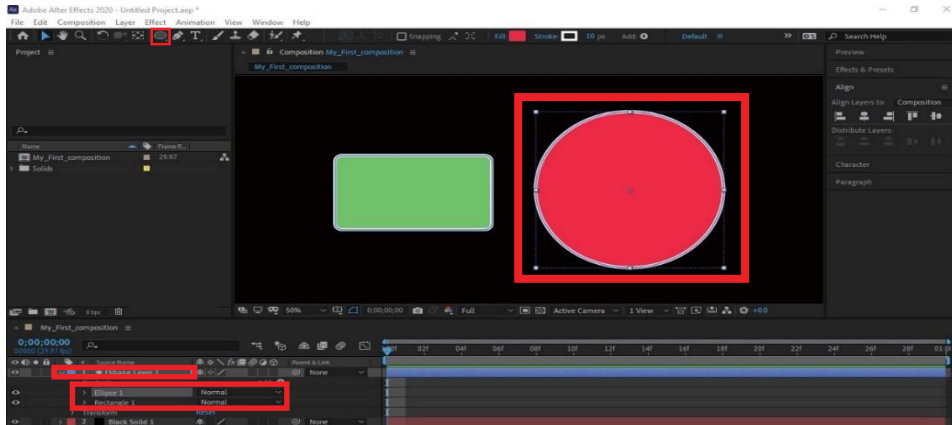
6.18 Creating Shape Groups

As we discussed in the sections above, that shapes play an important role in motion graphics. Let’s jump further with shapes, and combine two or more shapes in a single group. Nesting multiple shapes in one shape layer helps designer to quickly customize and maintain order of multiple layers in large projects. Follow the steps below to create your own shape groups.



Step 1:

Select Shape > Draw Shape > New shape layer creates > as shown in the figure 6.56.



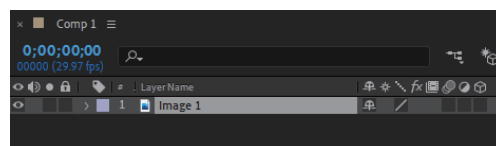
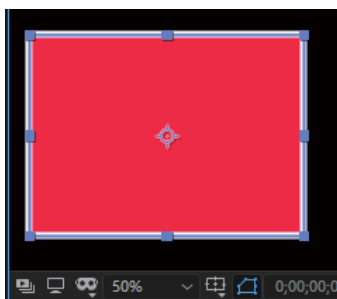
Step 2:

Click on shape layer 01 in timeline panel > Select SHAPE layer 01> Choose new Shape > Draw it on Composition You have created a group having two shapes inside as shown in the figures 6.57:

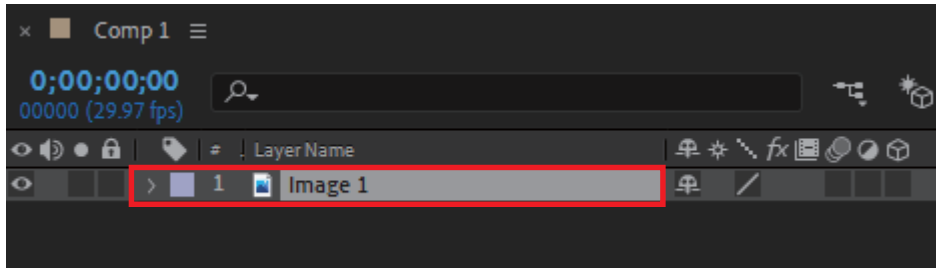
6.19 Masking

Masks are a fundamental that are included in After Effects that allows you to remove and join various components together, form fast and simple advances, and are the premise of enhanced visualizations and compositing work moving plan. Masks in After Effects permit you to decide the perceivably of explicit pieces of a layer, like provisions that may as of now be recognizable on the off chance that you use Photoshop, Illustrator, or other picture altering applications. You can hide an item in a photograph or video, make a pattern, make shapes, or even supplement your companions into their number one music recordings. Mask are made by drawing ways on any layer with a visual part; that is, anything you can make or bring into After Effects that you can really find in a piece.

6.20 Creating Mask with Pen Tool



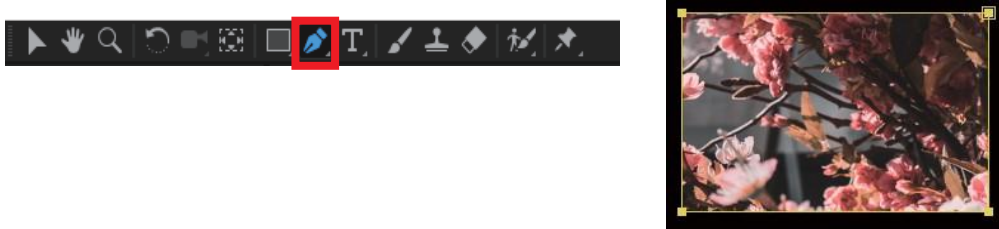
6.21 Edit Mask



To draw a mask on a layer. Follow these steps

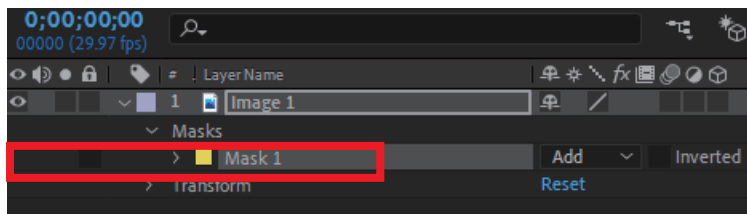
Step 1:

Select your layer > select any shape layer to draw a shaped mask as shown in figure below



Step 2:

Select pen tool to and draw shape on composition viewer as shown in figure 6.60 (A) and 6.60 (B).

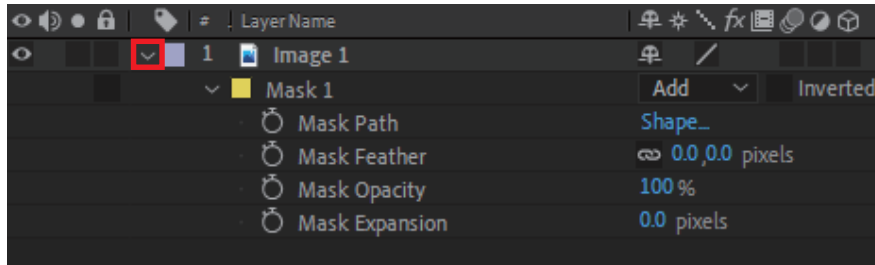


Step 3:

After creating a mask you will notice a property was declared inside shape layer as shown in figure (6.61).

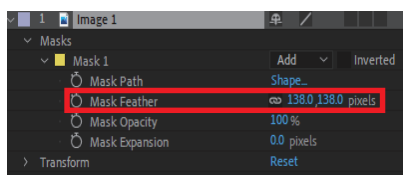
6.22 Feathering the edges of a mask

Feathering is Adobe After Effects term for "soft edges." Making a delicate edge around a determination is a pleasant way of mixing pictures, feature an article inside a picture, or change brutal edges for web illustrations. To apply feather on a masking follow the steps listed below:



Step 1:

Expand the mask attributes by click on the drop-down arrow located on the left side arrow of mask as shown in the figure

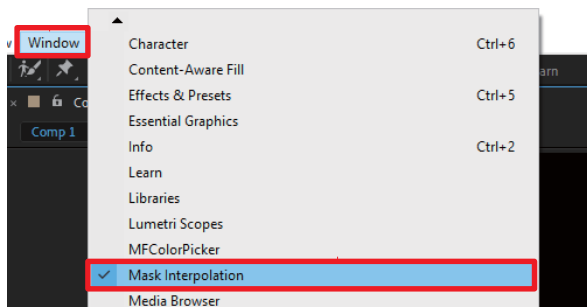


Step 2:

In the wake of using the default ascribes of the cover, you will discover different properties of the mask. Increment the size of the feather until you have arrived at the ideal worth as shown in figure 6.63 (A). After setting up the value to you see on to your composition feather has been applied on your selected mask as shown in figure 6.63 (B).

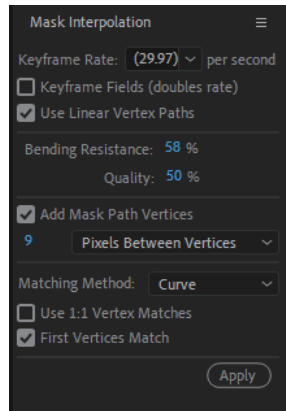
6.23 Understand mask interpolation

Smart Mask interpolation is very useful tool which helps in creating masked shapes tending not to animate smoothly. Smart Mask Interpolation creates intermediate keyframes based on the settings you choose to create smoother mask shape transformations. By default, smart mask interpolation plugin was off. If you need Mask



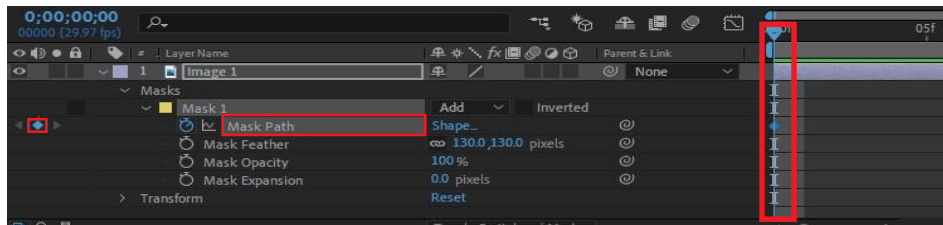
Step 1:

Click on windows > Find MASK INTERPOLATION > Click on it
You will find Smart Mask Interpolation panel as shown in figure
> Click.



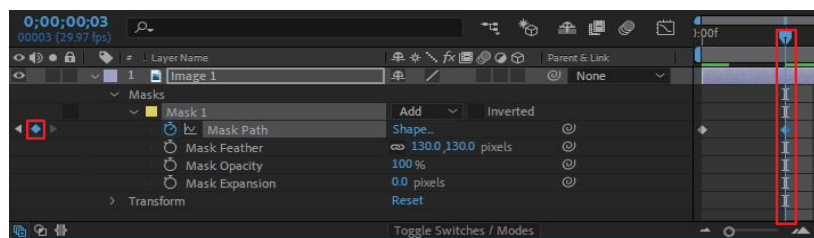
Step 2:

Smart Mask Interpolation panel on right side of composition viewer as shown in Figure > Click.



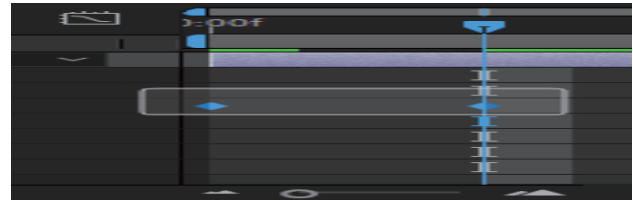
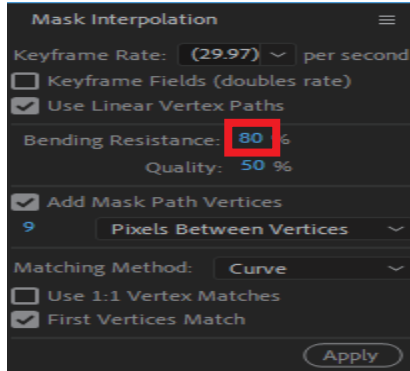
Step 3:

Create a KEY FRAME in mask path attributes Figure.



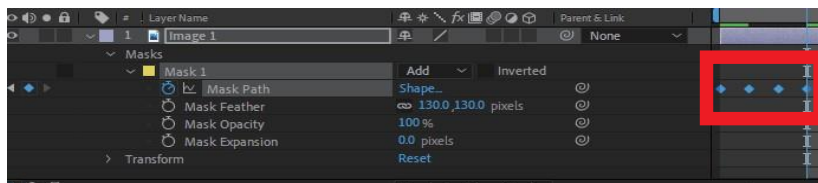
Step 4:

After setting keyframes for 5 sec, select both keyframes as shown in figure:



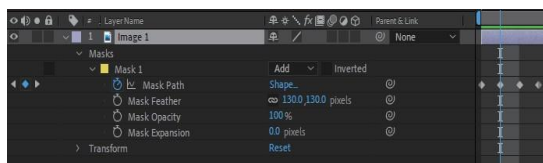
Step 5:

You can play with different values in mask interpolation, but we are looking only at bending resistance and change its value to as desired you want and hit apply button as shown in figure 6.69:



Step 6:

After you have applied the changes, you will notice in the timeline two more keyframes were added as shown in figure



Step 7:

If you slide the play head to two seconds, you will notice some changes in the mask path in the composition viewer. MASK path has been smoothing out, and if you play the animation, you will find

smoothness in animation as shown in figures

6.24 Text animation

Text plays a vital role in telling a story to the audience. The Type tool allows you to add text to your document. Adobe After Effect provides us more in-depth control over text and the ability to customize every bit of a text form (Characters, paths, offsets, lines), and much more. To animate text in Adobe After Effects, follow the steps listed below:



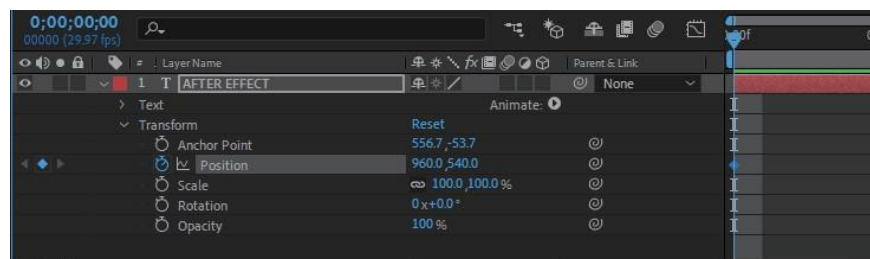
Step 1:

Let's assume you have already created a composition. Select Text Tool from the toolbar as shown in figure 6.6.01 > Click on any area on composition as shown in figure 6.7.2 and type any text.

Key Note:

IF YOU CLICK ONCE USING THE TEXT TOOL ON COMPOSITION VIEWER AND DO NOT INCLUDE ANY TEXT, THE CURSOR WILL

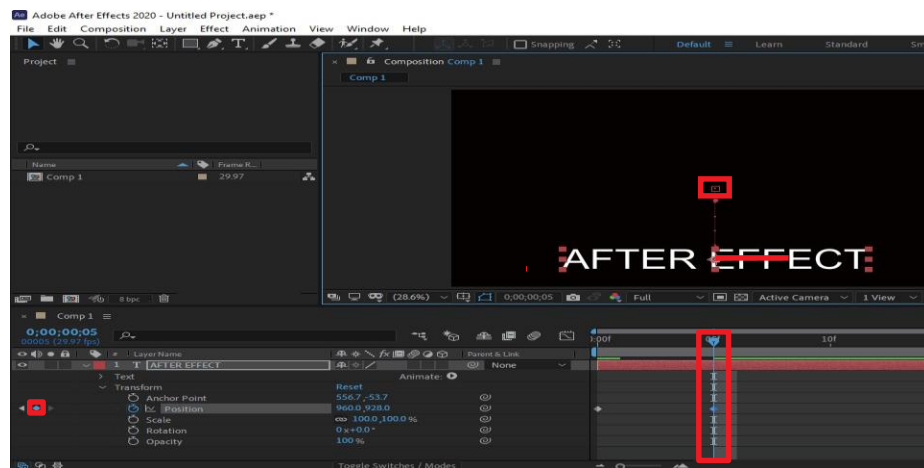
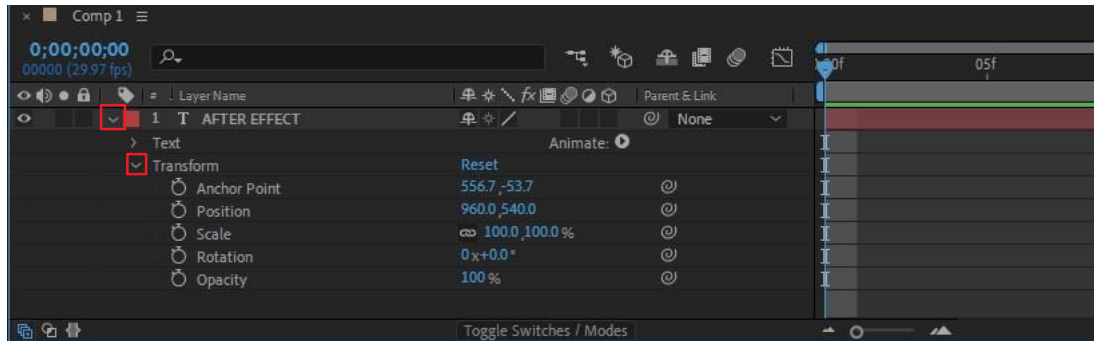
Step 2:



Click on a drop-down indicator to expand the text attributes > Tap on the arrow located on the left side of Transform to expand the “transform” attributes of text as shown in figure 6.73.

Step 3:

Click Position property of text. Set the 1st keyframes at 0 seconds, as shown in Figure 6.74.



Step 4:

Set last keyframes at 5 seconds. After selecting the 2nd keyframe drag the text from one place to another between the composition. You will notice dotted lines from the start point of the text to the end-point. It is called setting up a path for a position, as shown in Figure



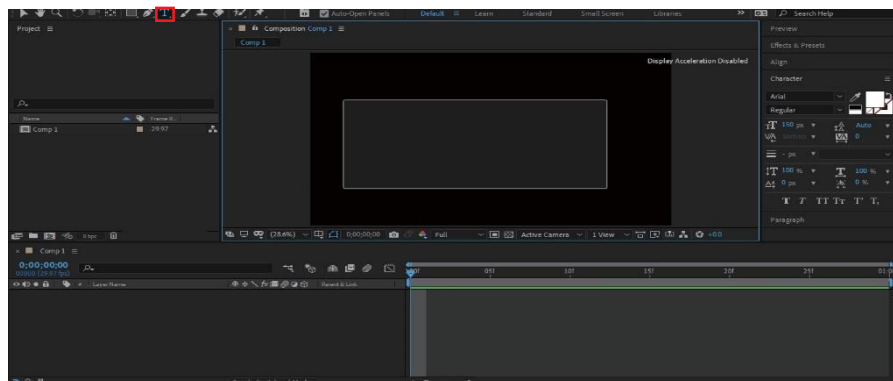
Step 5:

You have successfully animated your first animation, as shown in figure 6.76 below, moving text from top to bottom.

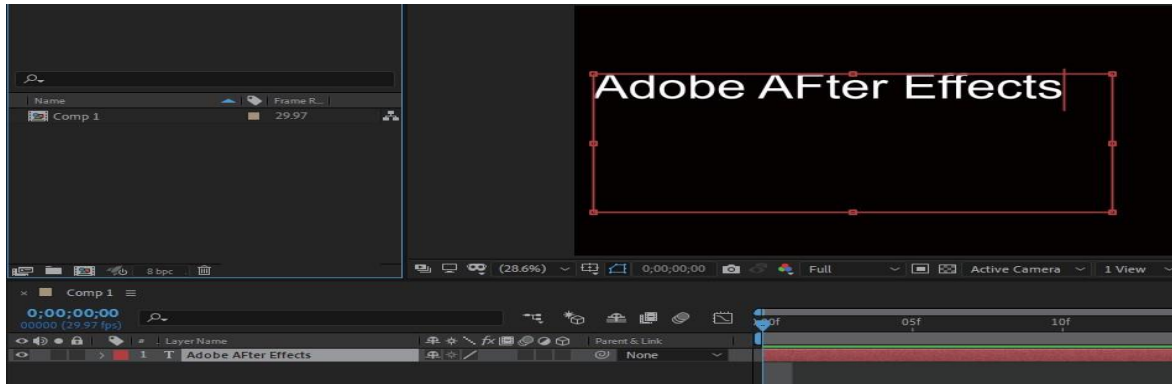
6.25 Creating Point and Paragraph Text

Well, you have to create your paragraph text while creating your first text animation, as shown in figure 6.76 When you click on composition using the text tool, After Effects by default, makes point text in the Horizontal axis.

6.27 Paragraph Text:



After Effects offer the same methods to implement the paragraph Text. To apply paragraph text, select the ROI (Region of Interest) where you want to add text and Select Text tool-type any text in the bounding box, e.g. “after effects,” you have created your first paragraph text as shown in figure.



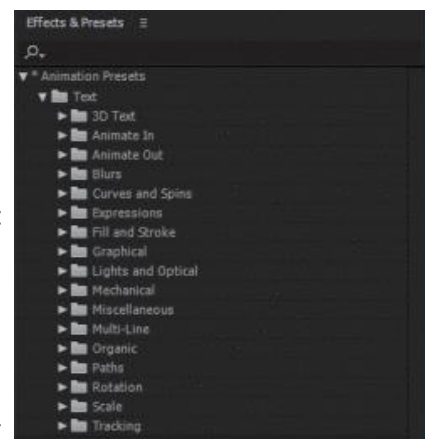
6.28 Use text animation preset

Think of the scenario if you want to need a text animation, but you do not want to create it from scratch, you can use PRESETS.

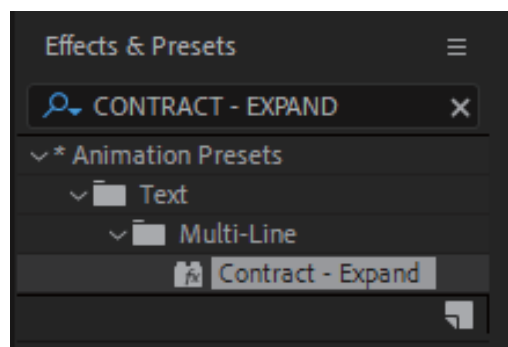
PRESETS are premade created animations to avoid the repetitive task. To use text presets, follow the steps listed below:

Step 1:

Open “effects and presets” panel as shown in figure 6.79. Your effects and preset panel were located on the right side of the composition. If You cannot find effects and preset panel, follow the steps:



Click > Windows > Scroll Down > Find Effects and Preset and Click.



Step 2:

After opening Effects and Preset panel, locate TEXT panel by Clicking Drop down arrow of “ANIMATION PRESET” > Clicking Drop down the hand of “TEXT” > Choose your desired

Preset, we are going to use “CONTRACT - EXPAND,” you can search this in the “EFFECTS AND PRESETS” search bar as shown in figure 6.80.



Fig 6.81 (A)



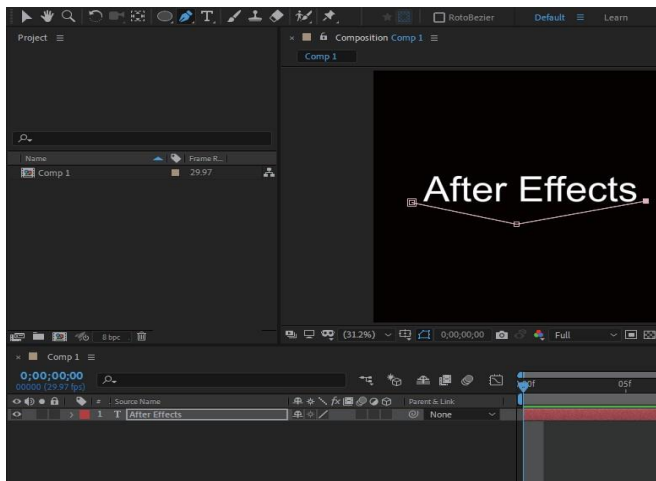
Fig 6.81 (B)

Step 3:

Double-click on the preset. You have successfully applied a preset as shown in Figure (6.6.10) before and after results > If you want to add your text, you can use that as well. Figure 6.81 (A) shows the default preset text, and Figure 6.81 (B) shows Custom text.

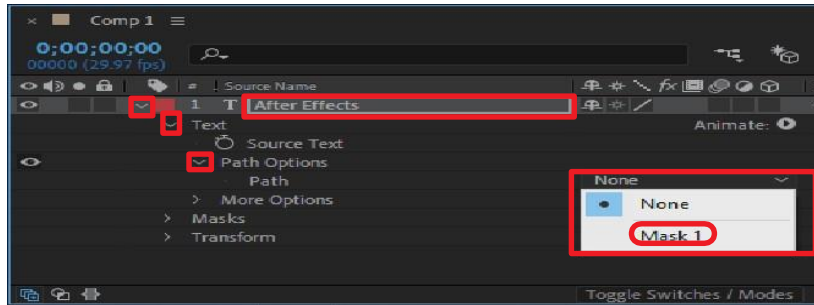
6.29 Text animation on Path

In this section, we’ll learn how to animate text on a custom path, e.g., line path, circle path, etc. Follow the steps below to animate text on the custom path.



Step 1:

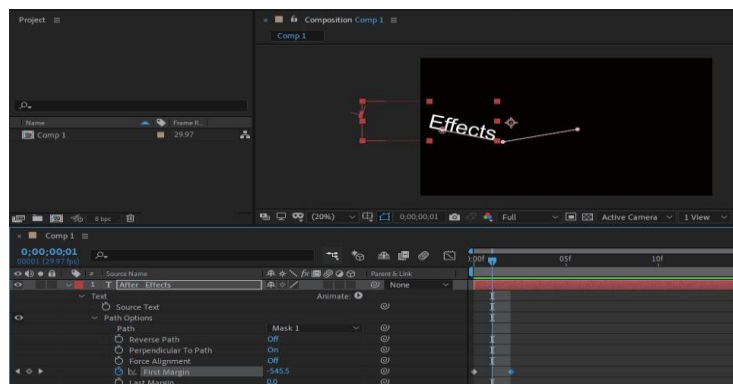
Type custom Text on composition > Select Text layer, create a mask of any Shape we are using pen tool shown in figure 6.82.



Step 2:

Click on Dropdown arrow of text layer > Expand Text attribute > Expand path attribute > Expand path Drop down menu > Select Maskas shown in Figure .

After changing the shape path from “none path” to the “mask path” option, your Text is placed on your desired way by itself. Adjust the spacing of text as well. After setting all the things, open “FIRST MARGIN.” attribute by expanding “More” path options found underPATCH options as shown in the figure:



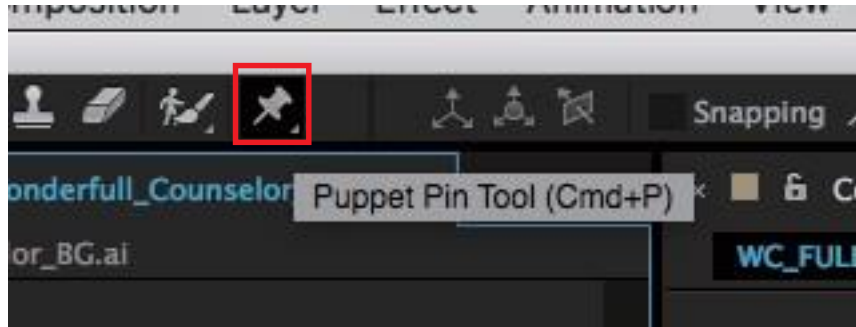
Step 3:

After locating FIRST MARGIN,> Set its value to (-1110), so it was completely away from the composition >Set 1st keyframe at 0 sec andchange the FIRST MARGIN value to 0, set 2nd keyframe at 2 seconds as shown in the figure 6.84.

Press the SPACE bar to play the animation, and you will notice text tomoving on its path from left to right.

6.30 Describe Puppet tool

The Puppet device allows you to add "pins" in the picture, then at that point, move and twist the image depending on where you drive the pins. Each time you click on the image with the Puppet tool, you add a "pin," which goes about as a sort of delicate joint. When working with picture resources (particularly vector plans), unpretentious utilization of the Puppet tool in After Effects can add life to your movement. You can discover PUPPET PIN TOOL in the device as shown in figure (6.7.01).



6.31 Deform pins

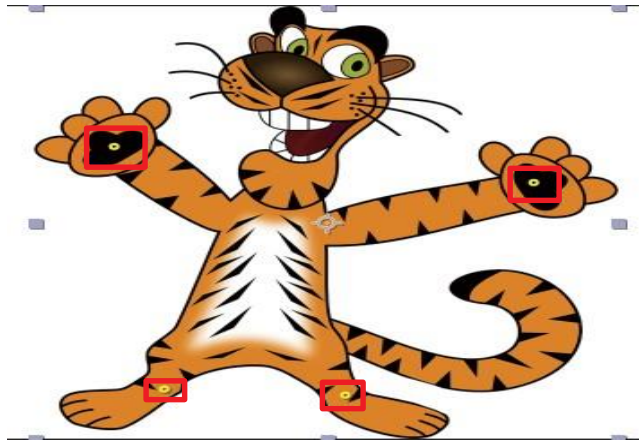
Where you place the Deform pins will decide how an item continues on the screen, so setting the disfigure pins turns into a significant piece of the mani-kin impact, yet additionally turns into a technique. Setting the Deform pins is additionally the initial phase in making a making impact. To deploy the hooks, follow the steps below:

Step 1:

Import an Image to your composition > Select the Puppet Pin Tool as shown in the previous figure 6.85.

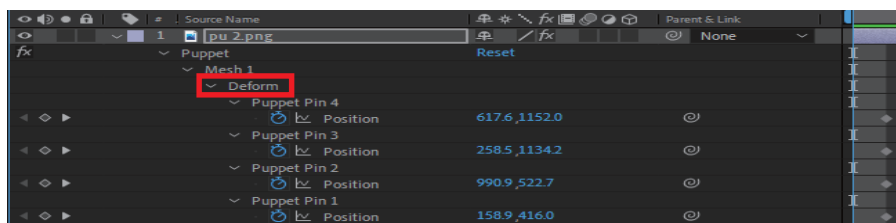
Step 2:

Click on the first area in your object that you want to be able to add a moment. As you can see in the Figure below, the Puppet Pin is labeled as a yellow circle. Continue the process until the last pin as shown in figure 6.86.



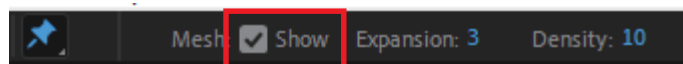
Step 3:

Expand Mesh 1 > Tap expand to see the properties as shown in figure 6.87



Step 4:

Tap on the mark to visualize the mesh on composition as shown in figure 6.88.



Your composition should look like this, as shown in the figure 6.89 below:



6.32 Areas of overlap



Areas overlap mean two pins intersect each other at the same spot. This is called AREA OVERLAP. You can use the PUPPET Overlap tool to overcome this. Simply grab, Puppet overlap tool and pin it between two intersections as shown in

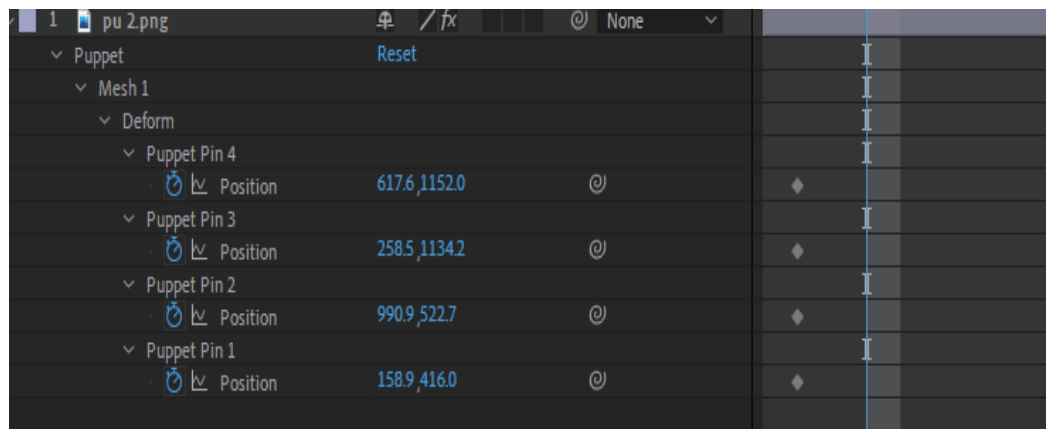
6.33 tiffing tool

The Puppet Starch tool gives you pins to figure out what portions of the space stay unbending and are not mutilated so a lot. You will utilize the Puppet Starch device to characterize the regions that you would prefer not to have the measure of "movement" as different regions as displayed in figure 6.91.



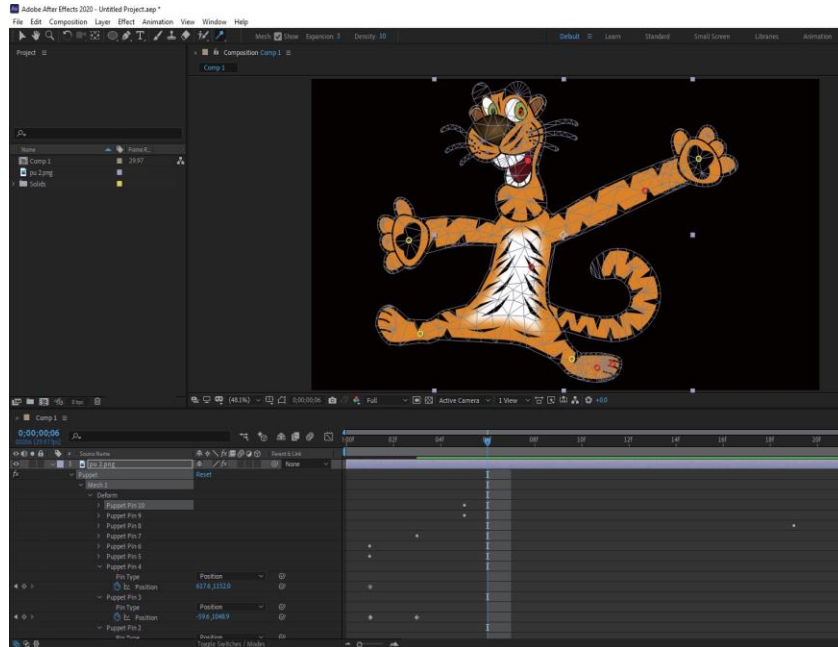
6.34 Animate pin positions

To verify it, select the layer in the Timeline board. Press “U” so you can see all the keyframes. Then, change the position of the Deform pins. Make more keyframes to additionally invigorate the pins as displayed in figure 6.92.



6.35 Record Animation

Adding keyframes and changing the position property to stimulate the Puppet can be a huge load of work. It can moreover be extremely drawn-out. You can use the Puppet Sketch mechanical assembly to save. The Puppet Sketch mechanical assembly allows you to drag the articles into position. Postponed results record the development as you pull pins. Use the Puppet Sketch mechanical assembly by picking Puppet in the Timeline load up, then picking a pin in the position board as displayed.



6.36 Comprehend Time Remapping

Motion Sketch

Motion Sketch is an element in Adobe After Effects that allows you to record keyframes to develop any layer with your mouse continuously. This is the reason it is called 'Movement Sketch': you are

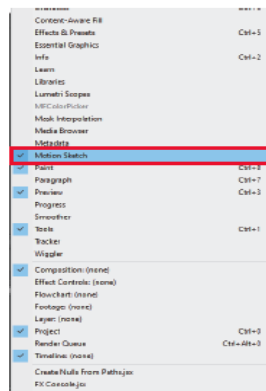


Fig 6.94 (A)

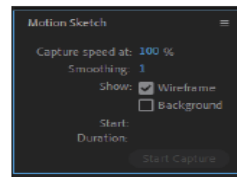


Fig 6.94 (A)

in a real sense outlining the movement of an article in your scene.

Step 1

To see the Motion Sketch panel, go to the main menu and select View > Motion Sketch as shown in figure 6.94 (A) and



Figure 6.95: Composition

Step 2

Draw a shape in composition > Decide the path > Click on the Shape layer > Then Click on the Start capture in motion sketch as shown in figure 6.95.

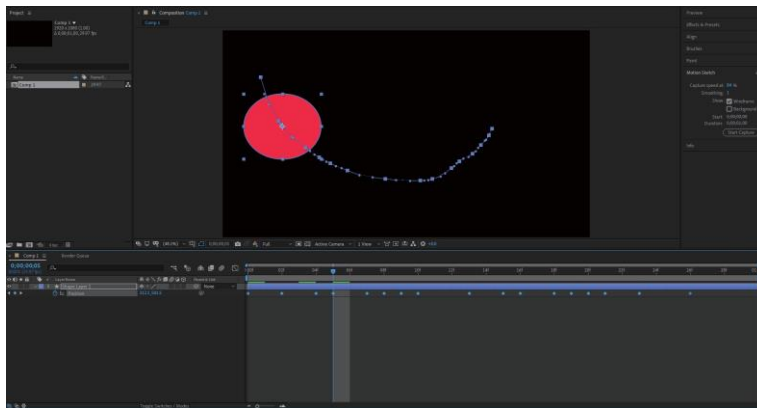


Figure 6.96: Composition

Step 3

Click Start > Draw Path. It will create several keyframes on the position attribute of shape. If you play the video, it flows the same path you draw as shown in figure 6.95

The Smoother

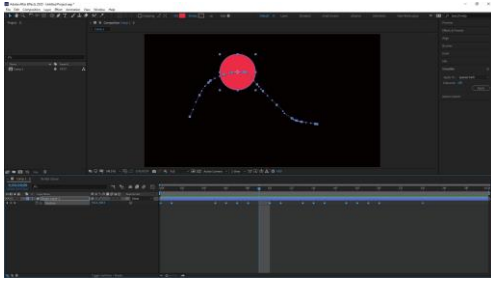


Figure 6.96: Before using Smoother

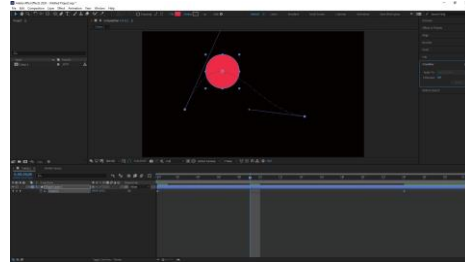
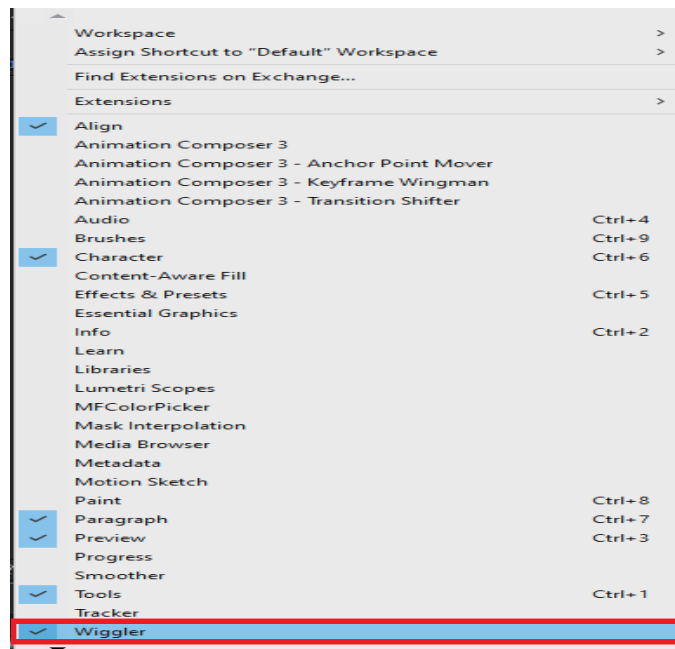


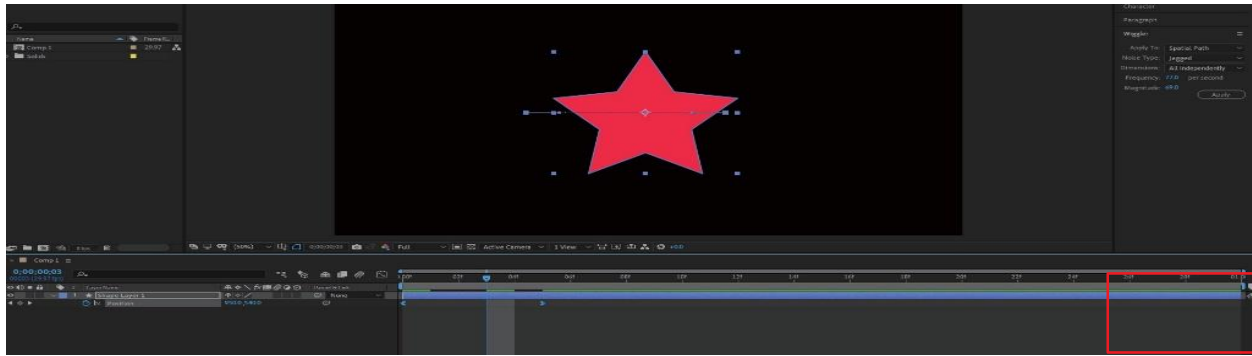
Figure 6.97 : After using Smoother

Smoother is a handy tool. It is used to smooth out curves. For instance, with a created path with motion sketch as shown in Figure 6.08.01, you will notice it is not smooth. So here comes smoother. Simply select the path > open smoother from > window > smoother > Increase the tolerance level. High tolerance is smoother but less detailed. Lower tolerance is more precise but less smooth. And you are done as shown in the Figure 6.96.

The Wiggler

As the name shows, it is used to wiggle any shape and text. To view Wiggler > Windows > Wiggler as shown in figure



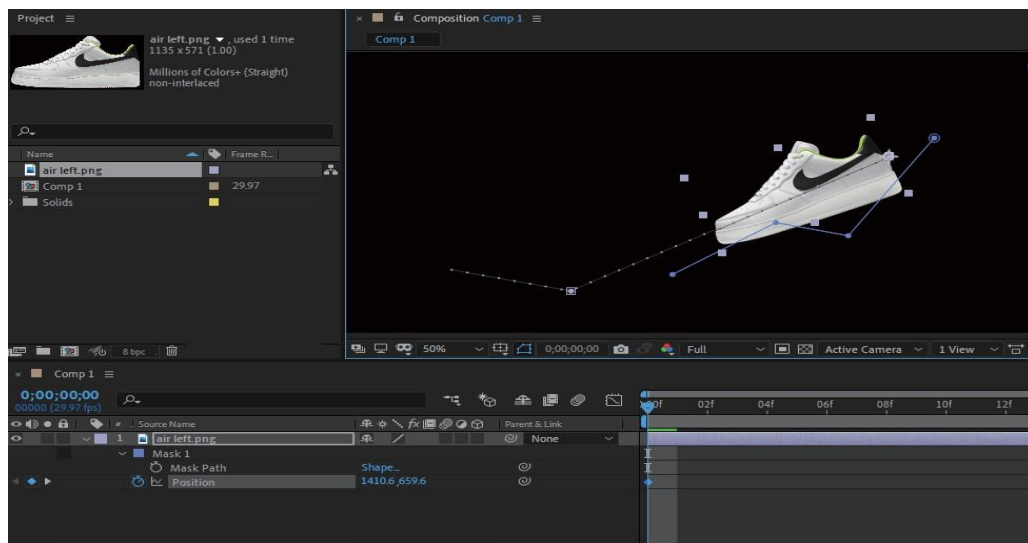


Use of Wiggler

Create a shape in composition > Set 2 keyframes on position attributes as we did in the above sections > Select two keyframes > Adjust wiggler setting > Play the animation as shown in the figure 6.99.

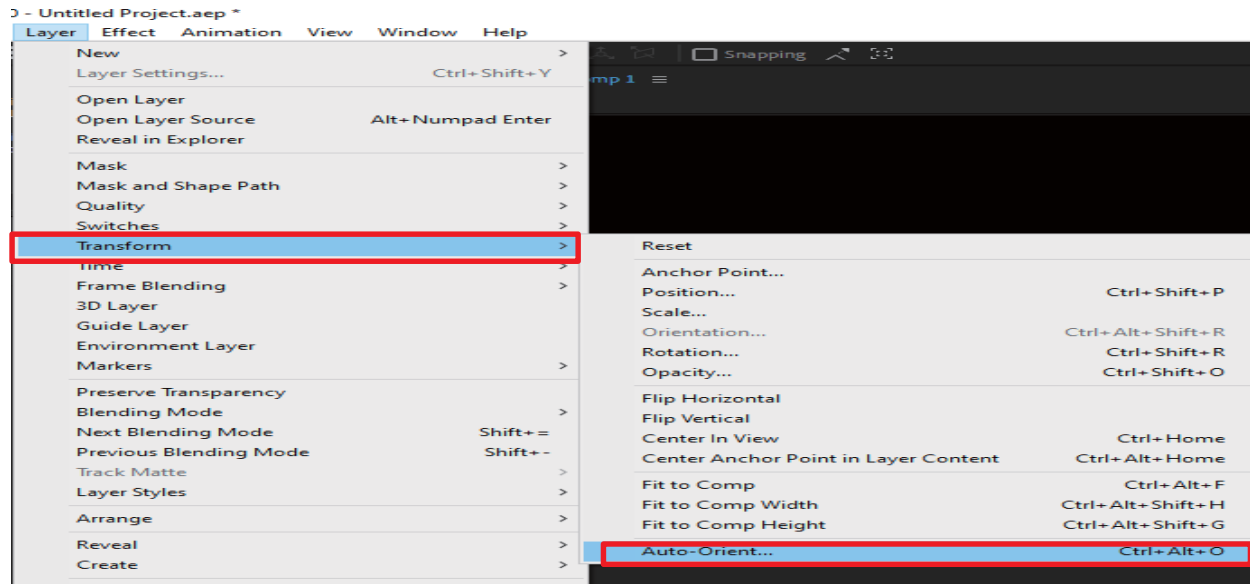
Auto orient

In some cases, we need to shape to auto orient its position along the path to look more realistic. After Effects provides a feature called Auto Orient. If you toggle it on a layer, the layer will allow auto orient itself. Following are the steps to apply auto orient on a layer.



Step 1

Select the layer > Create a path using pen tool > Copy maskpath > select layer again > press P to bring up position attribute > and paste the copies of mask path as shown in the Figure 6.100.



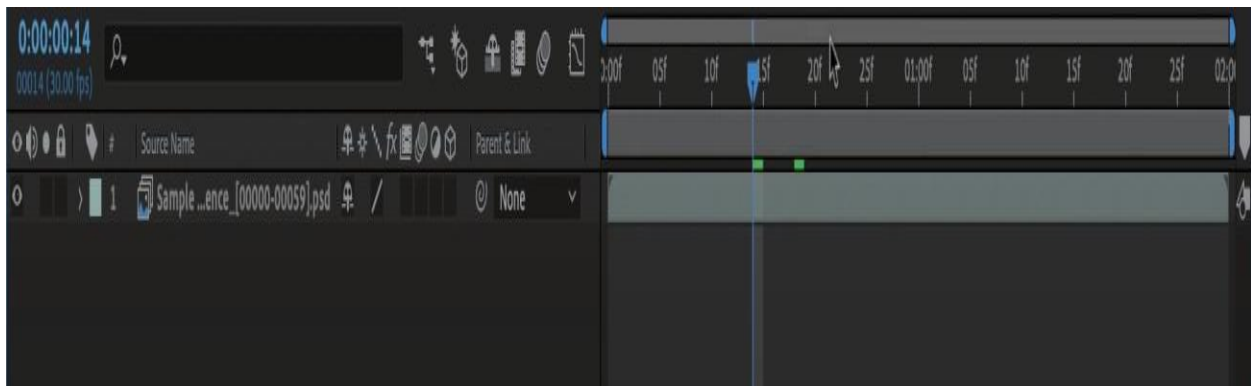
Step 2

Select the layer > Go to Layer > Transform > SelectAuto orient > Done as shown in Figure 6.101

Splitting a layer

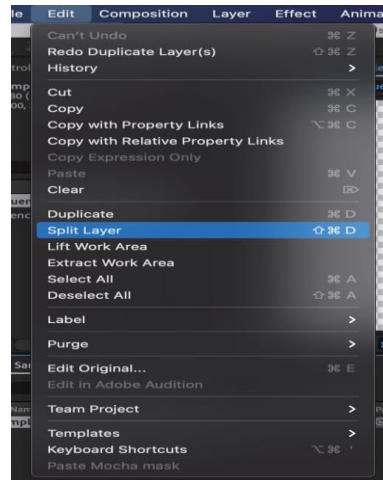
The splitting layer is used for any reason, and it is very

handy. One reason I find myself coming back to time and time again is when working with freeze frames. I want to make a freeze frame but not for the rest of the layer. So I split the clip, moved forward a frame, and split the clip again. Let's take a look at these steps to understand how to split a layer.



Step 1

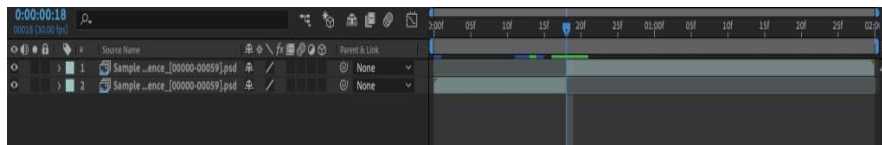
Splitting a layer in After Effects means that you take the selected layer and break it into two layers where the Current Time Indicator is. Nothing else is affected. Keyframes don't move. The layer's start and endpoints don't move. It is just karate chopped at the Current Time Indicator into two layers, as shown in Figure 6.102



Step 2

After selecting splitting time > click edit > split layer.

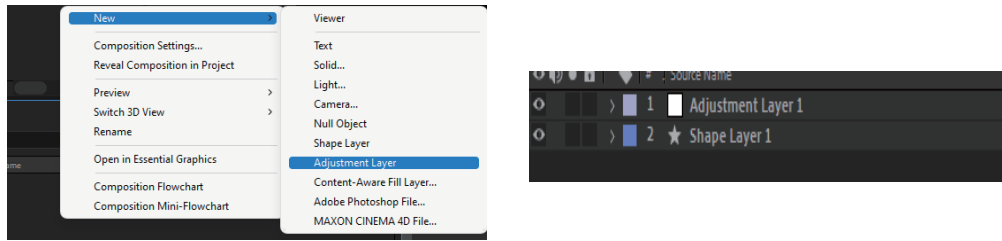
Make sure to select the layer while doing this process, as shown in Figure 6.103.



After splitting, your layers look somewhat likethis, as shown in the Figure 6.104

Adjustment layers

When you apply an impact to a layer, the effect applies just to that layer and not to another layer. Be that as it may, a product can exist autonomously on the off chance that you make a change layer for it. Any impacts applied to a change layer influence all layers underneath it in the layer stacking request. A change layer at the lower part of the layer stacking request has no noticeable outcome.



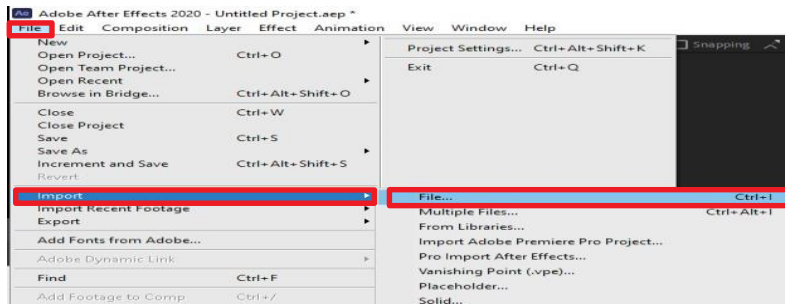
Step 1

Choose Layer > New > Adjustment Layer as shown in figure

6.105 (A). You will notice an “Adjustment Layer 1” in the composition as shown in figure 6.105(B).

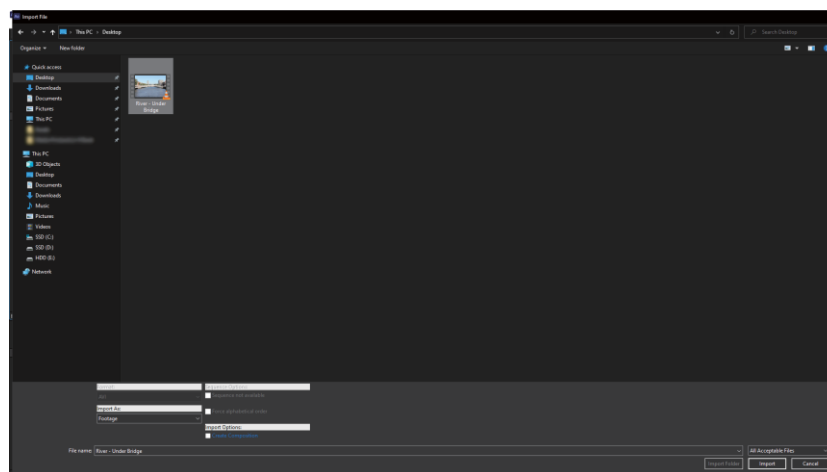
6.37 Import Video Clips

It is easy to import video clips in Adobe After Effects. Following are the steps to import video clips in after effects.



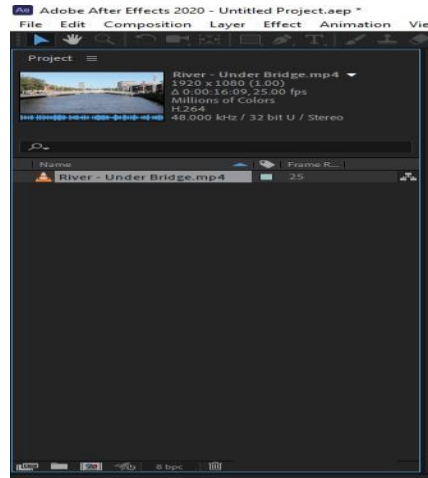
Step 1

Launch After Effects, Go to files > Import > Files as shown in Figure 6.106



Step 2

A dialog box will appear > Locate the File > Click Import > as shown in Figure 6.107.

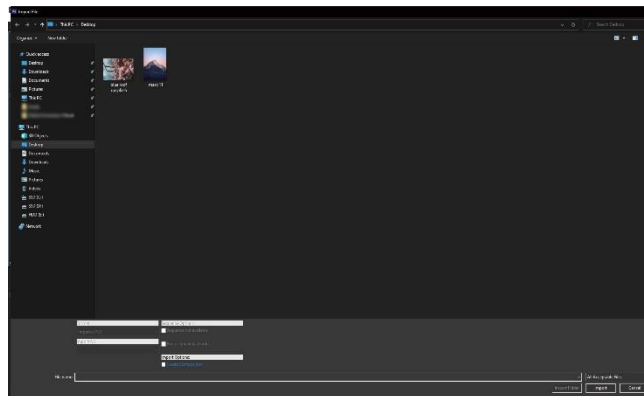


Step 3

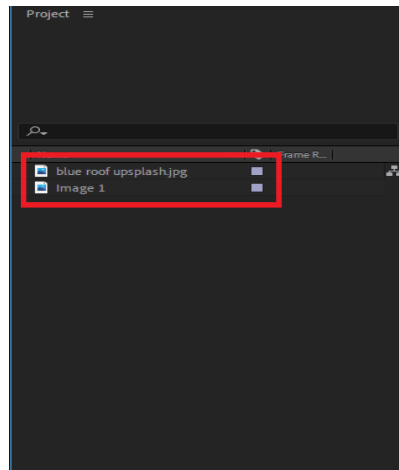
You have successfully imported a file as shown in Figure 6.108

6.38 Import still and sequence of stills

It is the same process as you would import a video file. For importing a sequence of stills, select multiple images at once, as shown in Figure 6.109

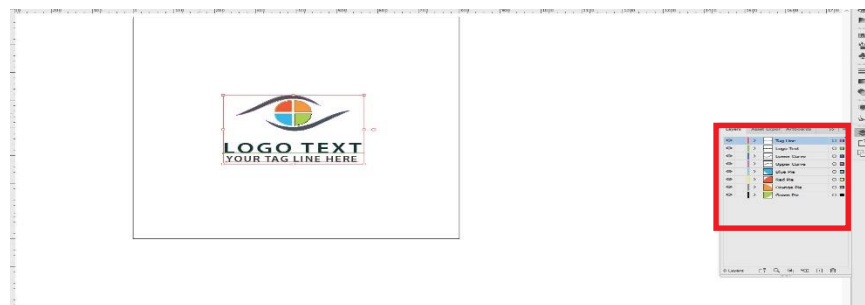


You have successfully imported an image as shown in Figure 6.110.



6.39 Import multilayered Illustrator Files

Adobe gives us a great ecosystem of different work and sync together very well. So we can use illustrator file in After Effect directly without converting or doing any other additional conversion, follow the steps to import AI files in Adobe After Effects.

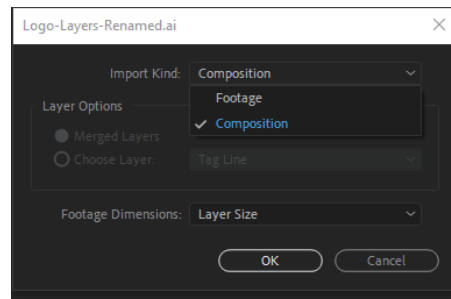


Step 1

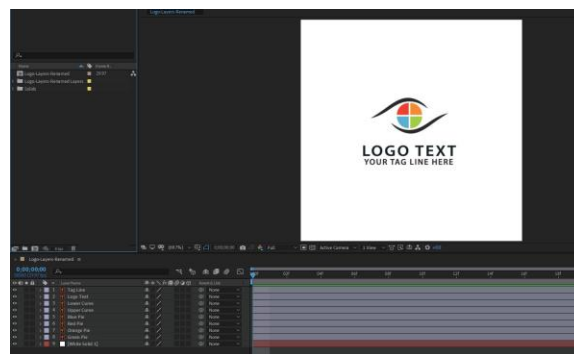
Create a separate layer of each object illustrator, this step is very helpful import layers as they set up in illustrator as shown in figure 6.111.

Step 2

Import AI file by press CTRL + I > Select Import COMPOSITION > Click Ok as shown in figure 6.112



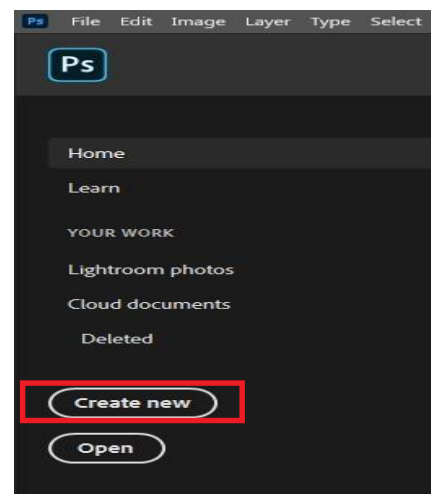
After importing, your project will look something like this, as shown in Figure 6.113.



6.40 Import multilayered Photoshop File

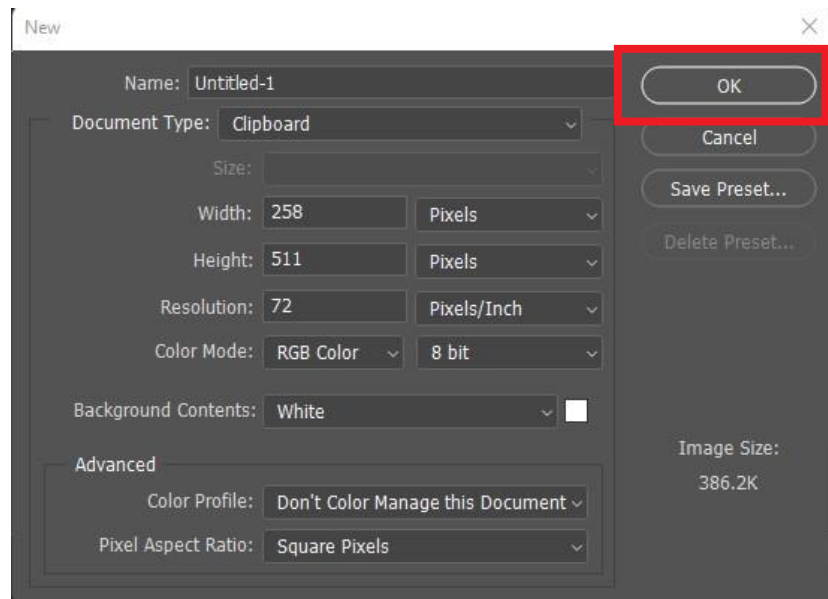
In order to give a unique and professional look, designers always add some fine details to their project and content. These final details can come through altering their work down to a fine cut, blending the sound, and surprisingly fostering the opening titles or illustrations for the substance.

Adobe Photoshop allows us to develop these graphics and titles in the Adobe ecosystem and import them directly after effect. Follow the steps below to import a multilayered Photoshop file in Adobe After Effects.



Step 1

Open Photoshop >Create New Project as shown in figure 6.114:



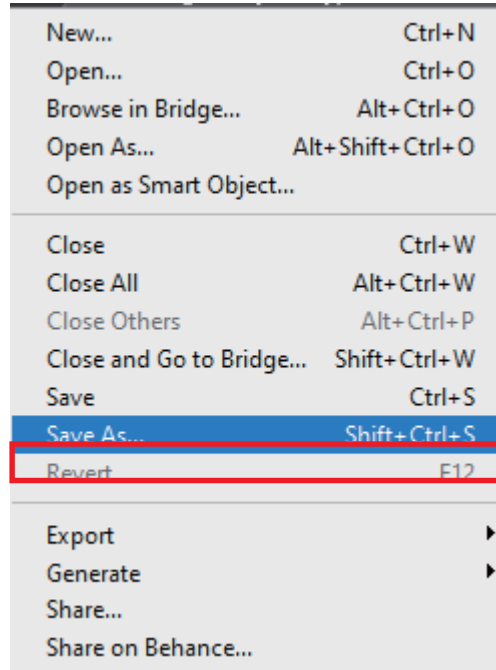
Step 2:

Set the properties of the project in Adobe Photoshop shown in figure 6.115:



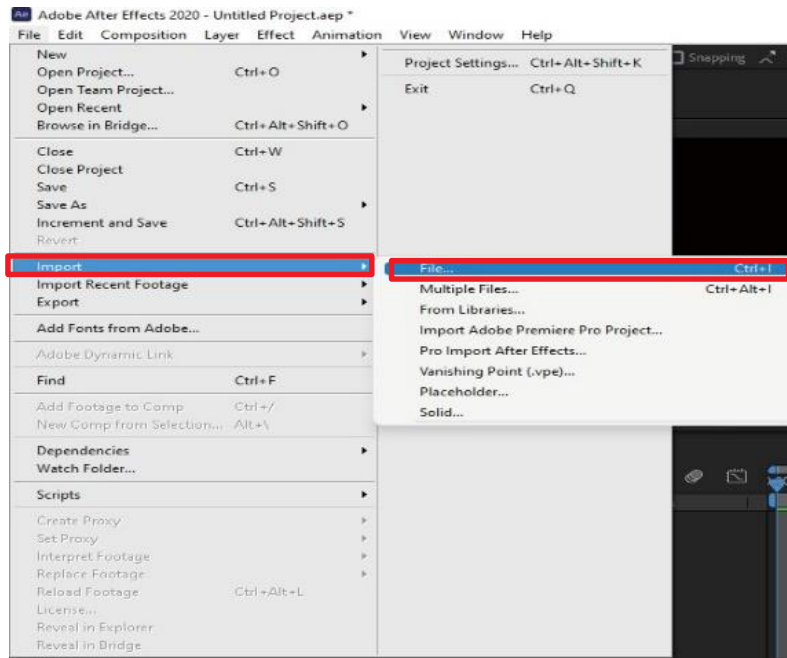
Step 3

Create your required graphics or text as shown in figure 6.116.



Step 4

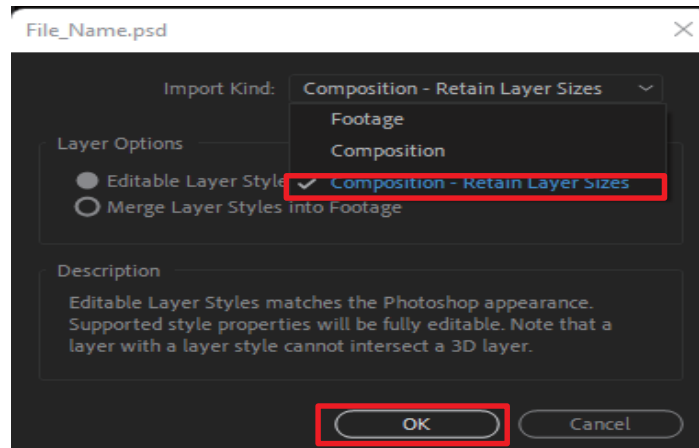
Finally, save the graphics you have created in Photoshop in PSD file format as shown in figure 6.117.



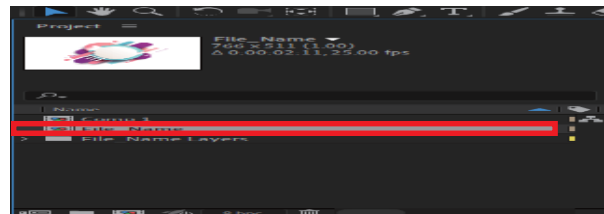
Step 5

After saving graphics of adobe photoshop, now import that file in Adobe After Effects: Click on File Button > Select Import Button > Select file as shown in figure 6.118.

Step 6

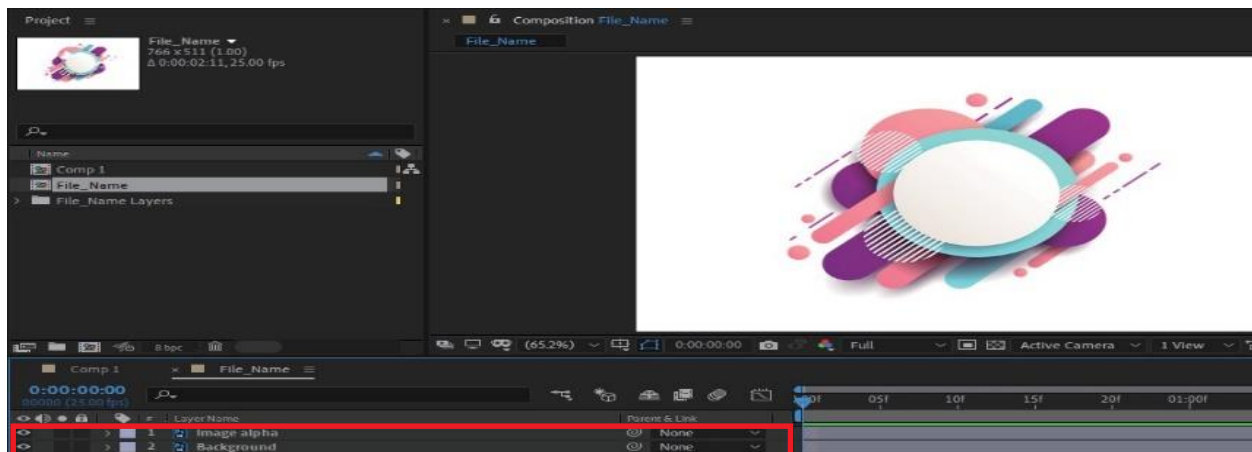


Import layer in Adobe After Effects as “Composition Retain layersize” > Click Ok button. As shown in figure 6.119.



Step 7

You will notice a new composition with the tag “FILE-NAME” is created in the Project panel. Double click on this composition as shown in figure 6.120.



Step 8

After opening this “Filename” composition, After Effects will arrange all of the layers in the same order as in Photoshop, as can be seen in figure

6.41 Key Frame Types

Delayed consequences insertion is how the product computes the qualities between two focuses. This means that if you animate a component utilizing keyframes After Effects, figure out the movement of that component between the keyframes you set.

Spatial

Postponed results inclusion is the way the item registers the characteristics between two core interests. This implies that if you breathe life into a part using keyframes After Effects sorts out the development of that part between the keyframes you set.

Temporal

Utilizing the worth diagram in the Graph Editor, you can make exact acclimations to the fleeting property keyframes made for your movement. The worth chart shows x qualities as red, y esteems as green, and z esteems in 3D only as blue.

Continuous Bezier interpolation

Like Auto Bezier interjection, Continuous Bezier addition makes a smooth pace of progress through a keyframe. In any case, you set the places of Continuous Bezier course handles physically.

Suppose you apply Continuous Bezier introduction to all keyframes of a property after Effects changes the qualities at each keyframe to make smooth advances. Eventual outcomes keep up with these smooth changes as you move a Continuous Bezier key-frame on either the movement way or the worth diagram.

6.42 Bezier

Bezier interjection gives the most exact control since you physically change the state of the worth chart or movement way portions on one or the other side of the keyframe.

In contrast to Auto Bezier or Continuous Bezier, the two-course handles on a Bezier keyframe work freely in both the worth chart and movement way. If you apply Bezier addition to all keyframes of a layer property After Effects make a smooth change between keyframes. The underlying situation of the bearing handles is determined utilizing a similar technique used in Auto Bezier introduction. Eventual outcomes keep up with existing course handle positions as you change a Bezier keyframe esteem.

In contrast to other interjection techniques, Bezier's addition allows you to make any blend of bends and straight lines along the movement way. Since the two Bezier course handles work freely, a bending movement way can out of nowhere transform into a sharp corner at a Bezier keyframe. Bezier's spatial introduction is great for drawing a movement way that follows a complicated shape, for example, a guide course or the diagram of a logo. Existing course handle positions endure as you move a movement way keyframe. The transient introduction applied at each keyframe

In contrast to other interjection techniques, Bezier's addition allows you to make any blend of bends and straight lines along the movement way.

Since the two Bezier course handles work freely, a bending movement way can out of nowhere transform into a sharp corner at a Bezier keyframe. Bezier spatial introduction is great for drawing a movement way that follows a

complicated shape, for example, a guide course or the diagram of a logo.

Existing course handle positions endure as you move a movement way keyframe. The transient introduction applied at each keyframe controls the speed of movement along the way.

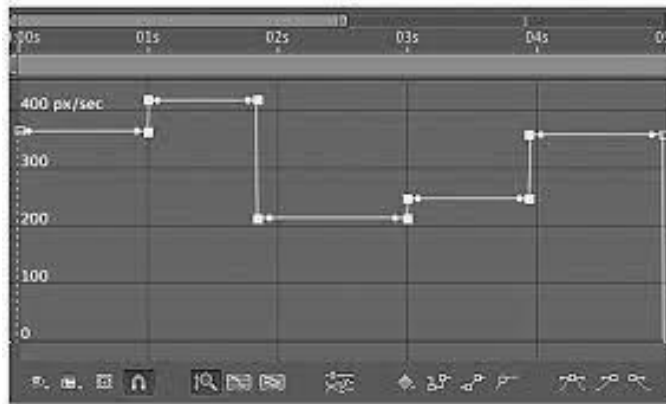
6.43 Auto Bezier

Auto Bezier's addition makes a smooth pace of progress through a keyframe. You might utilize Auto Bezier spatial introduction to make the way of a vehicle turning on a bending street. As you change an Auto Bezier keyframe esteem, the places of Auto Bezier heading handles change consequently to keep smooth progress between keyframes. The programmed changes change the state of the worth chart or movement way sections on one or the other side of the keyframe.

On the off chance that the past and next keyframes likewise utilize Auto Bezier introduction, the state of the portions on the most distant side of the history or next keyframes additionally changes. On the off chance that you change an Auto Bezier bearing handle physically, you convert it to a Continuous Bezier keyframe.

Roving Keyframe

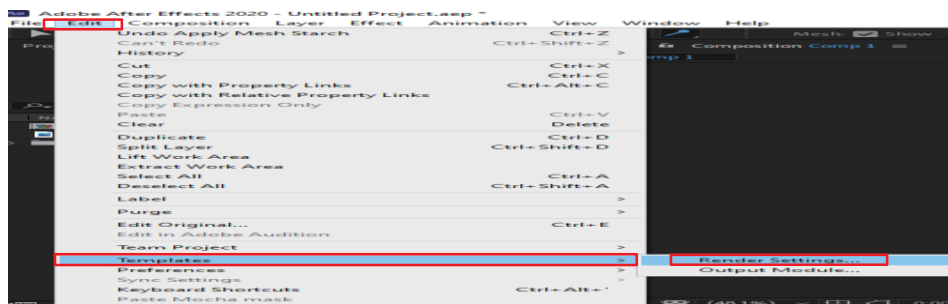
Roving keyframes retain their values, but their position in time is adjusted automatically so that



the property's speed becomes consistent, and the property's speed graph flattens out, as shown in Figure 6.121

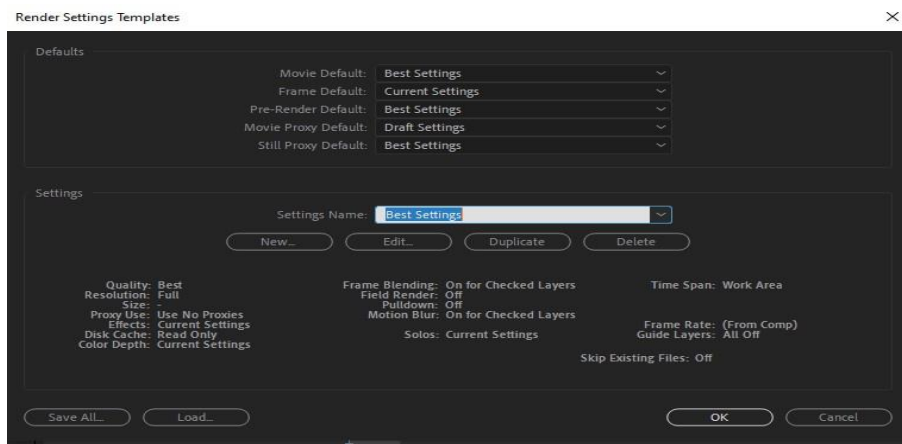
6.44 Template Creation

If you have express render settings, for the most part, used when exchanging After Effects video, this trick may save you a lot of time. Maybe then retrying each renders physically, you can save and proposition Render Templatesin After Effects without a very remarkable stretch. This is staggering if you work in a gathering environment or fundamentally need to save some time.



Step 1:

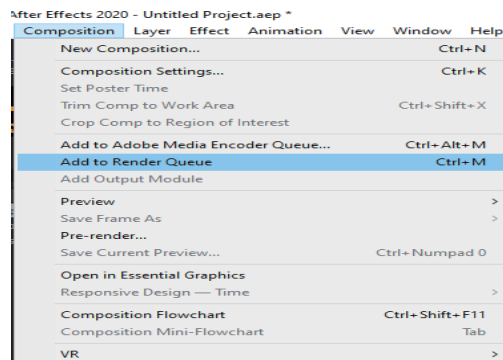
Select Composition > Edit > Templates > Render Settings as shown in figure 6.122.



Step 2:

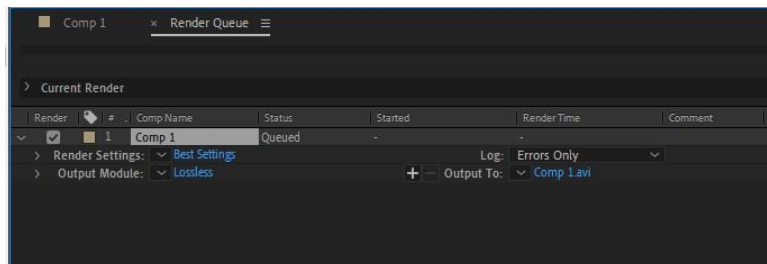
Adjust the settings according to your requirements and tap “Ok,” and name your template as shown in Figure 6.123.

6.45 Export using render queue

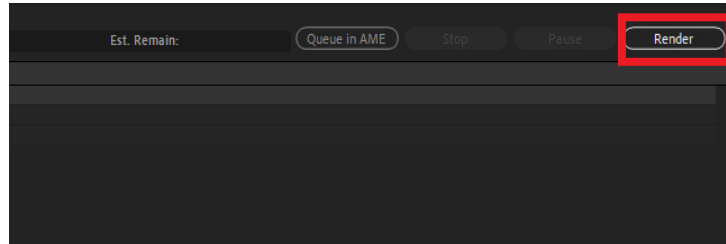


Step 1:

Select your composition > Add to Render queue as shown in figure 6.124.

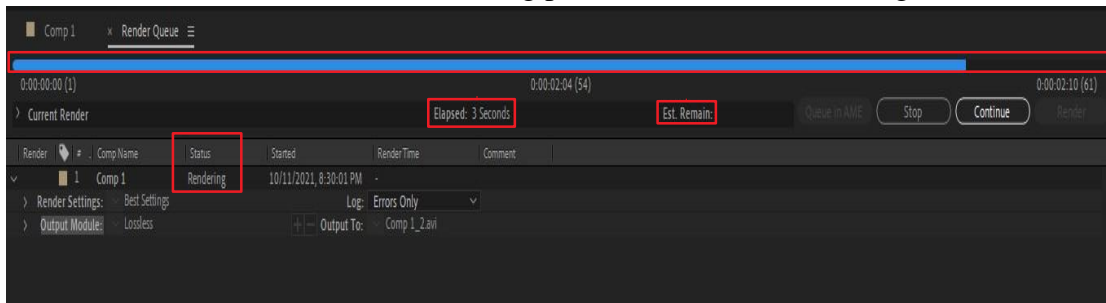


Select your composition in adobe render queue as shown in figure



Step 2:

Click on >Render Button. Later, the rendering process starts as shown in figure

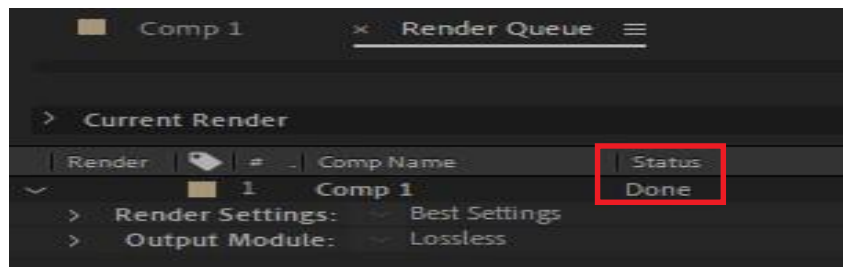


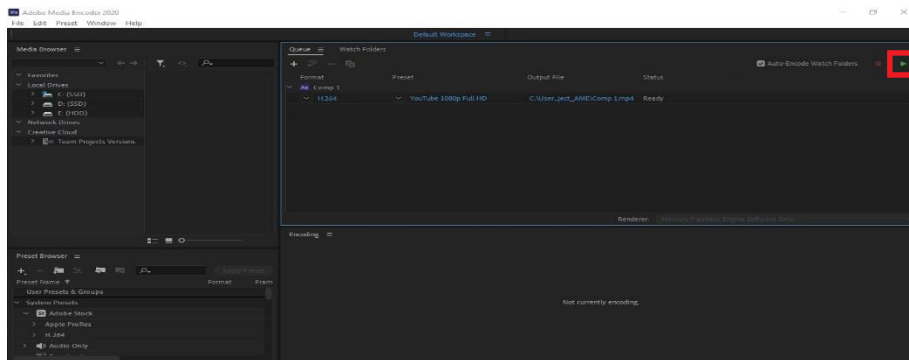
Step 3:

A blue color progress bar starts filling out. In the rendering panel, you can see rendering status, remaining time, and elapsed time, As shown in figure

Step 4:

After completion of the rendering process, you can hear a beep sound. And the rendering status has changed to “done,” as shown in figure





6.46 Export using Adobe Media Encoder

Select the composition > Add to media Encoder > Set up media encoder and click PLAY button as shown in Figure

Activities

1. Install Adobe After effect in your system
2. Create your first project in Adobe After Effects
3. Create a project by using attributes of motion graphics
4. Create animation project using different shape tool
5. Use a mask tool on an image.
6. Create Apply text animation on student's name.
7. Apply puppet tool on different characters and record an animation.
8. Apply Different effects to videos.
9. Create animation video composition using layer.
10. Render movies with Adobe Media Encoder.

Key Points

1. Animation is a methodology by using with figures are manipulated to seem as moving sequence.
2. Compositing is the method or technique of mixing visual components from different sources into one unite image.
3. Visual effects are the method by that imaging is formed or manipulated outside the context of a live-action shot in film-making and video production.
4. Audio is defined as sound, mainly when recorded, transmitted, or re-produced.
5. Video is defined as the recording, reproducing, or broadcasting of moving visual images.
6. Resolution is quantity of pixels on screen.
7. Pixel aspect ratio is connection between the width and height of pixel.
8. Area of overlap means two pins intersect each other at the same spot.
9. Motion sketch is an element that allows you to record keyframes.
10. Slicing one layer into two pieces is called splitting of layer.

Notes for Teacher

1. Explain purpose of after effects to students
2. Help students to install the software
3. Explain source material used in after effects
4. Explain what is motion graphics with examples.
5. Explain default properties of shape layer.
6. Help students to set up their first after effects project.
7. Help student to add a composition and arrange multiple layers.
8. Help student to add different shape layer properties and edit them.
9. Explain usage and purpose of masking in after effects.
10. Explain different properties to render an after effects composition.

EXERCISE

Select the Most appropriate option

1. Adobe After Effects is used for _____
a) Animation b) 3D Modeling c) Compositing d) A & C
2. After effect save its file in the form of _____
a) JPEG B) BITMAP C) AEP D) PSD
- 3) What is the name of color model Adobe After Effects Supports?
a) BGR b) RGB C) HSV D) CMYK
- 4) Number of pixels on a screen is called _____
a) Frames b) Resolution C) pixel ratio d) None of these
- 5) How many shapes tools after effects provides _____
a) 1 b)10 c)5 d) None of these
- 6) Puppet tool allows you to add _____ in a picture
a) Mask b) Pins c) light d) None of these
- 7) Motion sketch is an elect that allows you to record _____
a) Video B) Keyframes c) animation d) None of these
- 8) Software used to render Adobe after effect compositions is called _____
a) Quick-Time b) Adobe Media encoder c) VLC d) None of these
- 9) _____ keyframe retain their values, but their position in time is adjusted automatically is called?
Easy-Ease B) Ease-In C) Roving Keyframe d) Ease-out
- 10) Animation or any digital footage that produce illusion of rotation, positioning is called _____?
a) Designing B) Animation c) Motion Graphics d) post-production

Give Short answer to the following question

1. Define animation in After Effects
2. Define Composition in After Effects
3. Define Still images in after effects
4. What is .AET file extension used for?
5. Name any three attributes of motion graphics
6. Define resolution
7. Define Pixel aspect ratio
8. List default properties of shape layer
9. List any two usages of masking in after effects
10. Define point and paragraph text

Answer the following questions in detail

1. Explain purpose and usage of Adobe After Effects
2. Explain different source materials used in Adobe After Effects
3. Explain the following terms?
 - Alpha Channels
 - Frame Rates
 - RGB color model
4. Explain shape in after effects? Also elaborate shape tools in the software.
5. Explain default properties of shape layer.

Chapter 7

ADOBE AFTER EFFECTS (ADVANCED)



In this Section, students will be able to:

- understand 3d concepts
- elaborate the difference between 2d and 3d
- know the role of cameras, lights, and points of interest
- know the effect of repositioning the layers
- rotate a 3d object
- learn about axis modes
- 3d layer interactions, render order, and collapsed transformations
- work with shadows, null object, text in 3d,
- use vanishing point vpe and add dimension to stills
- view, build, and render 3d scenes / text using cinema 4d (cine ware)
- use particles for compound objects
- apply paint effects (stroke, scribble, write-on, paint)
- adjust color balance
- replace the background
- understand tracking and stabilizing
- track motion
- know about expressions
- knowledge of using expressions to animate shapes
- adjust the expression direction, parameters, rate of change and loops
- explore new expressions
- understand function of keying
- change the background and adjust foreground object
- render and export the project.

7. AAE Advance Level

7.1 Understanding 3d Concept

In the field of media production, Adobe After-Effects plays a vital part. It is used to create 2D, 3D animation, scenes, effects, composition and helps in post-production work. After-Effects support multiple software to use their assets, including Adobe creative cloud software (Photoshop, Illustrator) and 3D software Cinema-4D. This way, you can maintain your workflow without hustling from one software to another. Let's deep dive to understand the 2D and 3D concepts offered by After-Effects.

7.2 Difference Between 2d and 3d

2D in After-Effects

2D shapes can be defined as level plane figures with just two dimensions (length and width). 2D shapes can be measured by the two dimensions, width, and height, as shown in Figure 7.1.

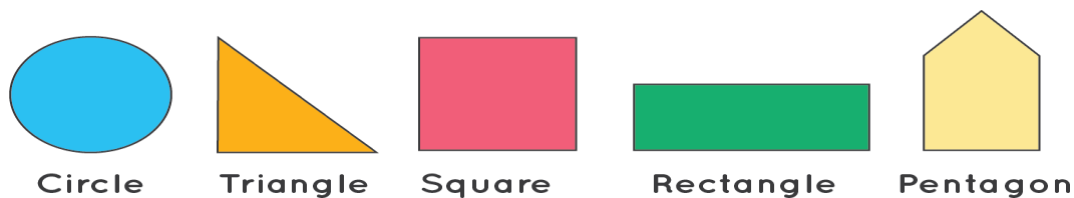


Figure 7.1:2D Shapes

3D in After-Effects

A three-dimensional shape is defined as an object or shape with three measurements (length, width, and height). Three-dimensional shapes have depth and three attributes: faces, edges, and vertices, which can create a 3D shape, as shown in Figure 7.2.

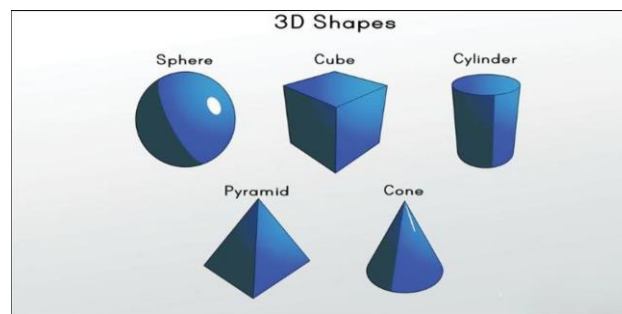


Figure 7.2 : 3D Shapes

7.3 Role Of Camera, Light, And Point of Interest

Role Of Camera:

You may have known about 2D and 3D, but there is another term called "2.5D". It's a visual idea and the core for all the work in After-Effects. At its center, 2.5D is moving 2D items in 3D space, somewhat like paper Mario. Cameras allow



Figure 7.3: 2.D Scene

Role of Lighting:

3D lighting has a significant part of each 3D project. A blend of light sources to create a unique piece of setting, scene, or address regular properties like time, climate, as shown in Figure 7.4.

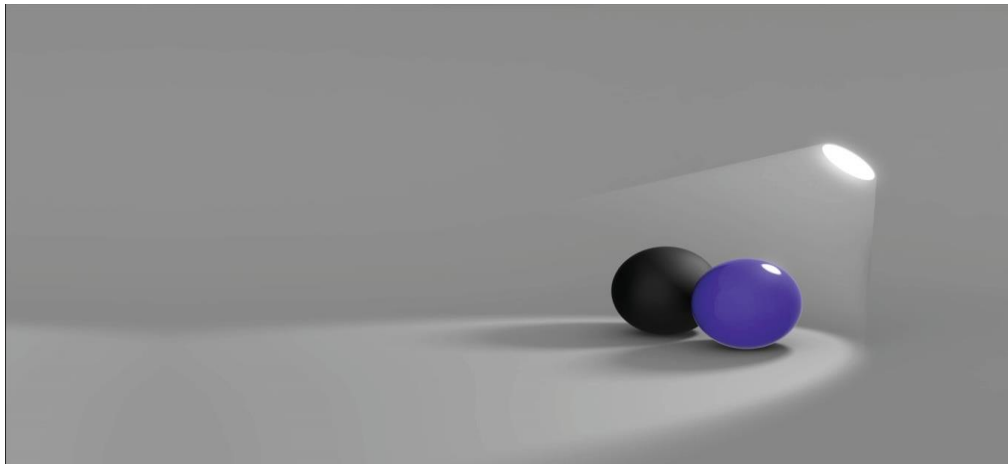


Figure 7.4: Lighting Effect

Role Of point of Interest In3d:

The point of interest in 3D scenes allows users to focus on a subject while telling a story. It is essential to focus on the topic to connect with the scene. Point of interest uses the same principle in 3D to set the camera on a specific region.

7.4 Repositioning The Layers

After-Effects work on the stack system principle to arrange and manage layers. The logic behind this principle is “A layer on top of the stack has first priority and the layer below has second priority. First layer on stake is visible on the composition preview window.”

To see the positioning effect, create two different shapes. Apply different colors and see the impact of repositioning after changing the position of layer one. As you can see clearly, the Top RED colored layer is on top of the Green colored layer, as shown in Figure 7.5.

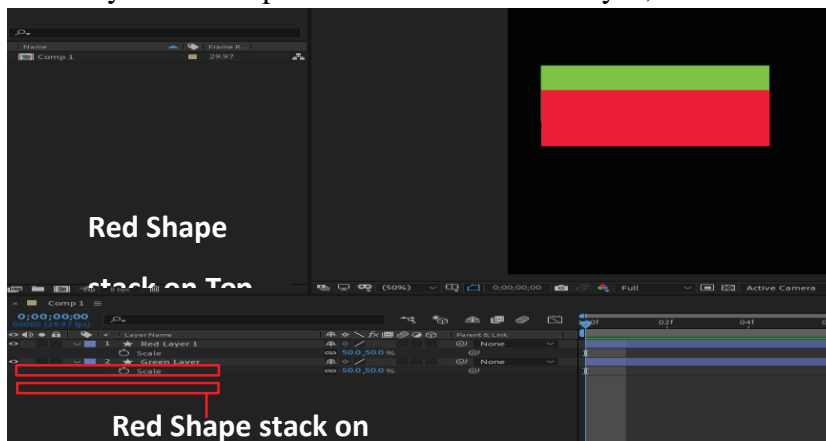


Figure 7.5: Positioning layers

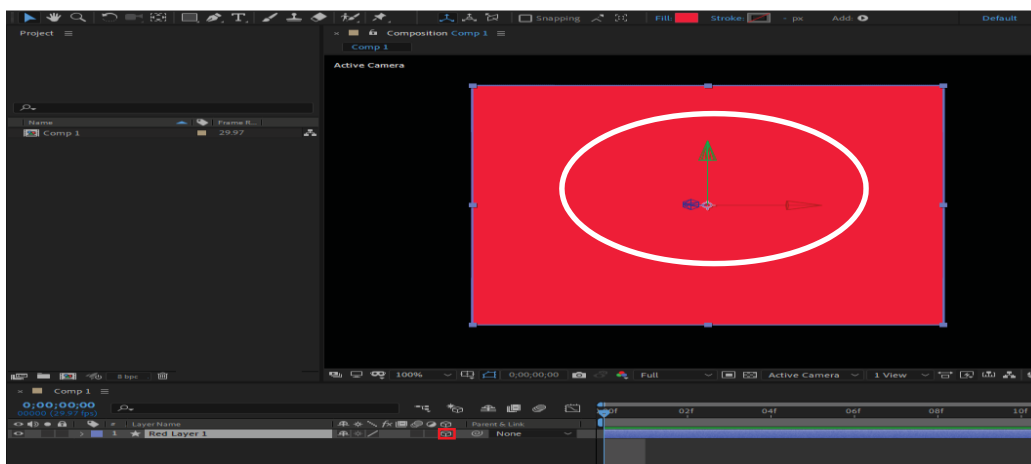


Figure 7.6: Rotate 3D object

Steps

Draw a shape on composition. Go to the layer on the timeline and convert the layer into 3D, as shown in Figure 7.6.

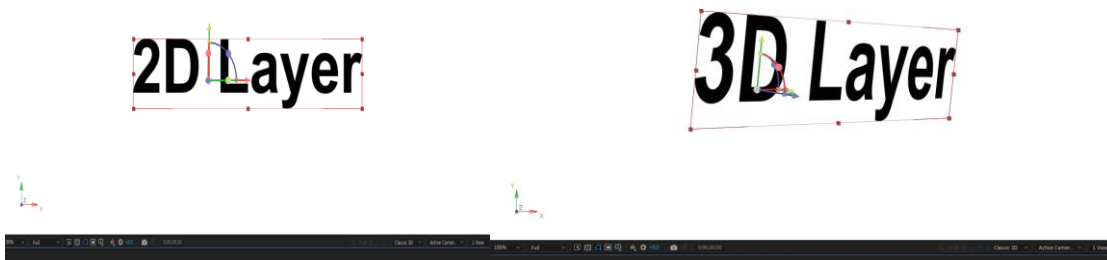
Select the axis to change the direction of the layer as shown in Figure 7.6.

7.5 Rotate a 3d Object

Using Adobe After Effects, you can easily rotate 3d objects to watch their width, length and depth properties.

7.6 Axis Modes in After Effects

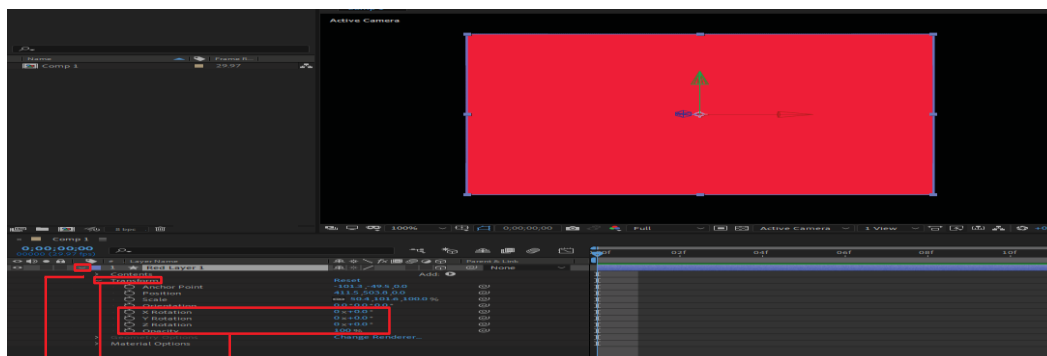
When you create a 3D layer, the actual layer stays the same. Yet, it takes different properties: Position, Anchor Point, Scale, Orientation, Rotation, and material options properties. Material options properties determine how the layer associates with light and shadows. 3D layers communicate with shadows, lights, and cameras, as shown in Figure 7.7.



2D Layer Figure 7.7: Axis Mode 3DLayer

After converting the shape layer into 3D, you can see the axis by following the steps:

Click left drop-down arrow of layer > Expend Transform Property, as shown in Figure 7.8



1 Click Here 3 Click Here

Figure 7.8: Axis Mode

7.7 3d Layer Interactions

Transforming 3D Layer

By expanding the transform property, you can change the direction, position, and depth of the 3D Layer, as shown in Figure 7.8.

Rendering Order of 3D Layer

After-Effects continue rendering from the source file to the film. It is the order in which After-Effects process your source file to get rendered in composition preview or your exported file.

Shape Layer Render Order

1. Groups.
2. Inside a group: Paths.
3. Inside a group: Paint.
4. Inside a group: Transform properties.
5. Transform properties of the Layer.
6. Effects.
7. Track Matte.
8. Blending Mode.
9. Styles.
10. Preserve Transparency.

Composition Render order

1. Background color.
2. Pre-composition.
3. Other Layers.
4. Lights.
5. Cameras.
6. Motion Blur.
7. Audio.

7.8 Working with Null Object, Text In 3d

Null Object

A “Null object” is an invisible layer with each property of a regular layer, so it is a parent to any layer in the composition. You use the same orders to adjust settings for a null object for a solid layer. A null object is visible in the composition and Layer panels and shows up in the composition panel as a rectangular layout with layer handles.

To add a null object, follow the steps below: Right-click on timeline > Click New > Null Object as shown in Figure 7.9

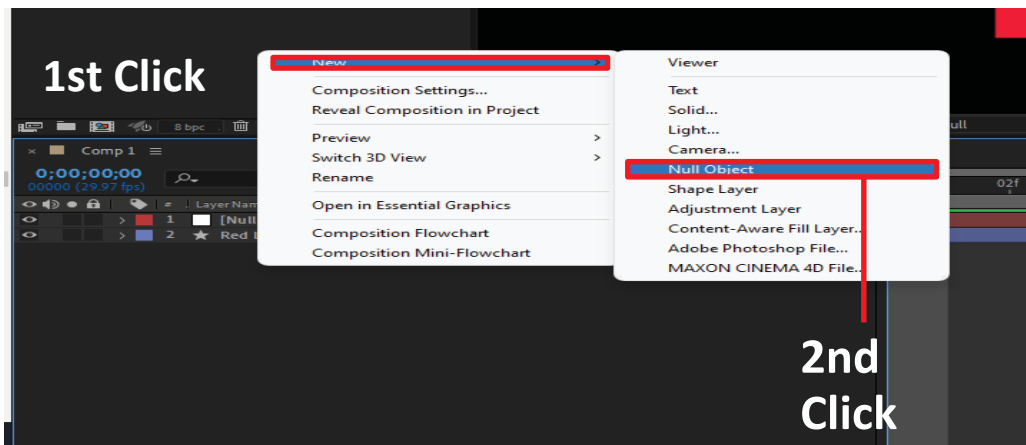


Figure 7.9: Creating Null Object

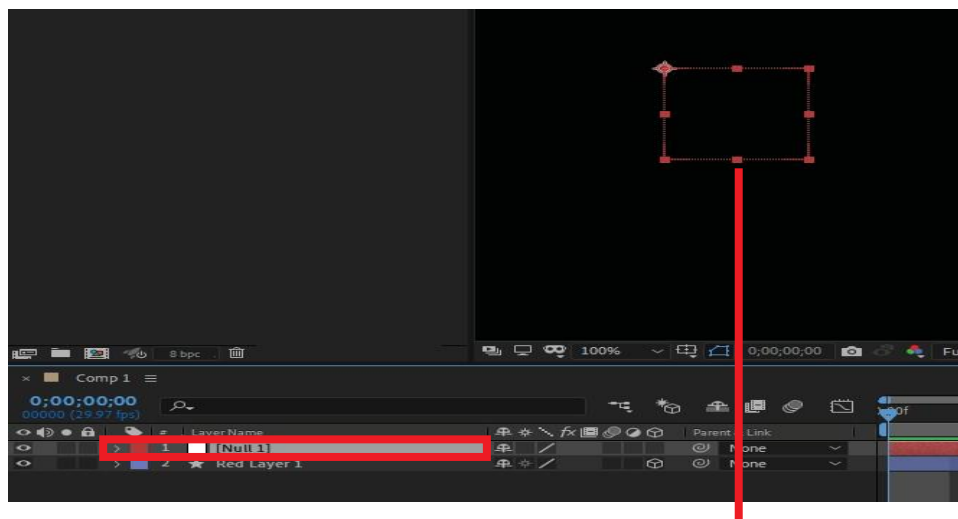


Figure 7.10: Null Object

Null Object

Creating Text In3d

Select the Text tool and type the text in composition.

Convert text layer to 3D layer > Create a camera object > Right click on timeline > Click Camera.
After Creating the Camera > Select Camera Moving tool, and take a look at your typed TEXT IN 3D as shown in Figure 7.11

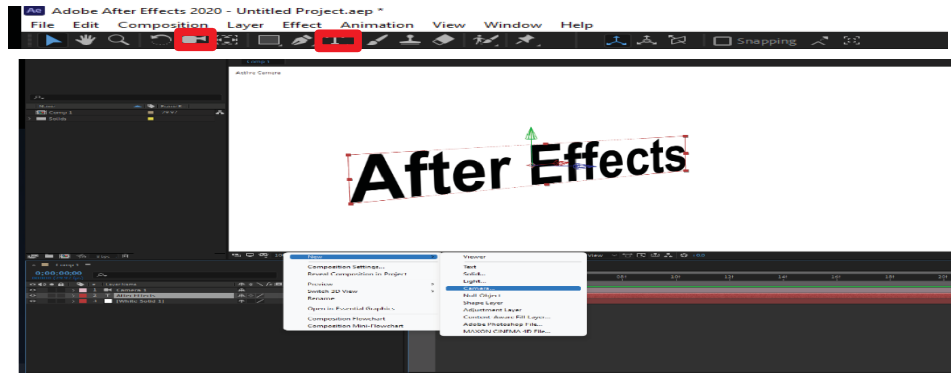


Figure 7.11: Creating Null Object

3D space in After-Effects allows us to add 3D touch within the software. Instead of learning a whole new 3D software to perform a simple task.

7.9 Apply Particles:

The "CC Particle System" is the most fundamental particle framework in

After-Effects. If you are practicing with particle frameworks, the main drawback is that it is a 2D effect, meaning you are limited to the X and Y-axis.

Particle structures allow us to simulate physics-based consequences and phenomena using groups, smaller objects, or sprites, which make up a larger complete photo. Let's take an observation of the particle structures in After-Effects.

Let's practice creating a primary graphic using Particle World. For context, we're going to make a backdrop for an imaginary video star message. Following are the steps to use "CC PARTICLE WORLD" in Adobe After-Effects:

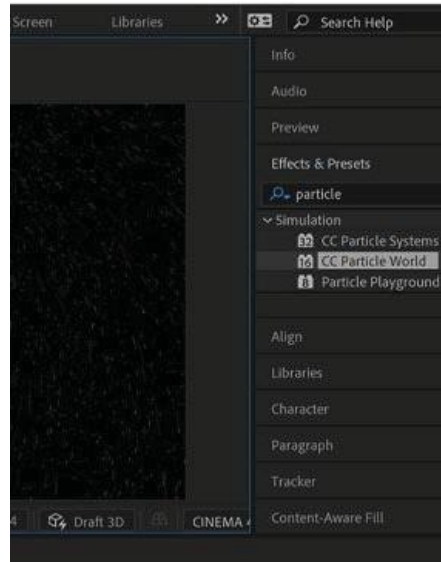


Figure 7.12: Choosing CC Particle Work Effect

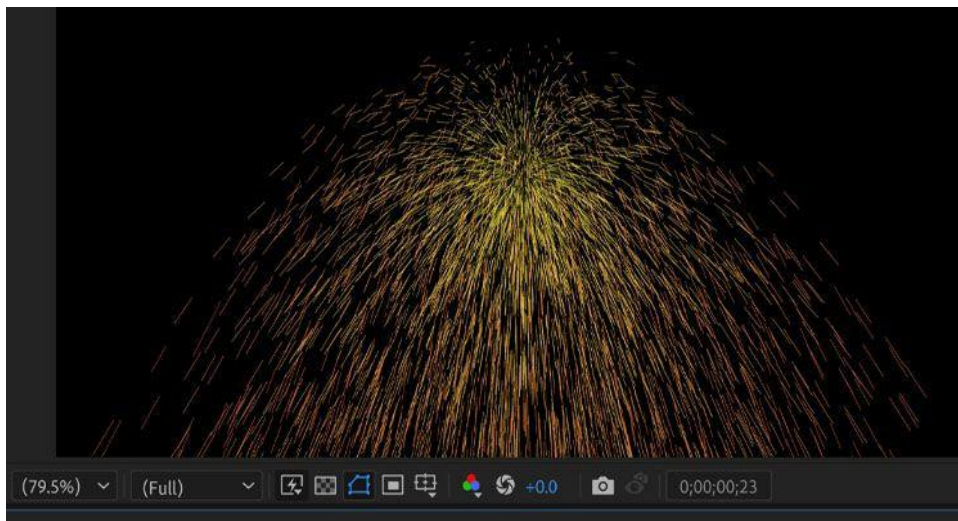


Figure 7.13: Exploding CC Particle

STEP 1:

Create a new composition > Go to Effects and presets panel > Search CC PARTICLE WORLD > Select CC PARTICLE WORLD, as shown in Figure 7.12.

STEP 2:

By default, you will see a basic particle effect appear in your composition, as shown in Figure 7.13.

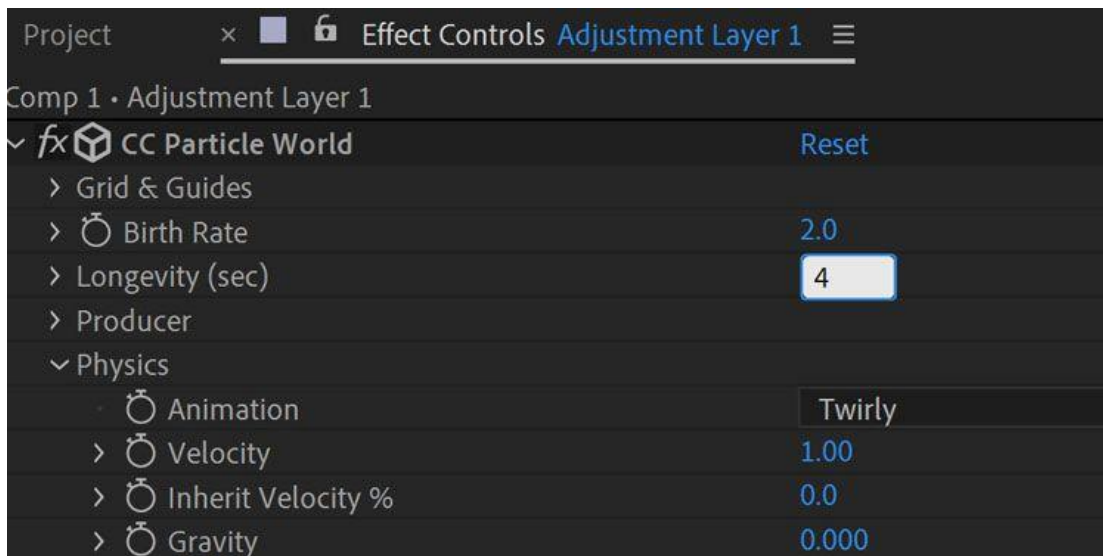


Figure 7.14: Setting CC Particle Properties

STEP 3:

Change the settings of “CC PARTICLE WORLD” to achieve the required effect, as shown in Figure

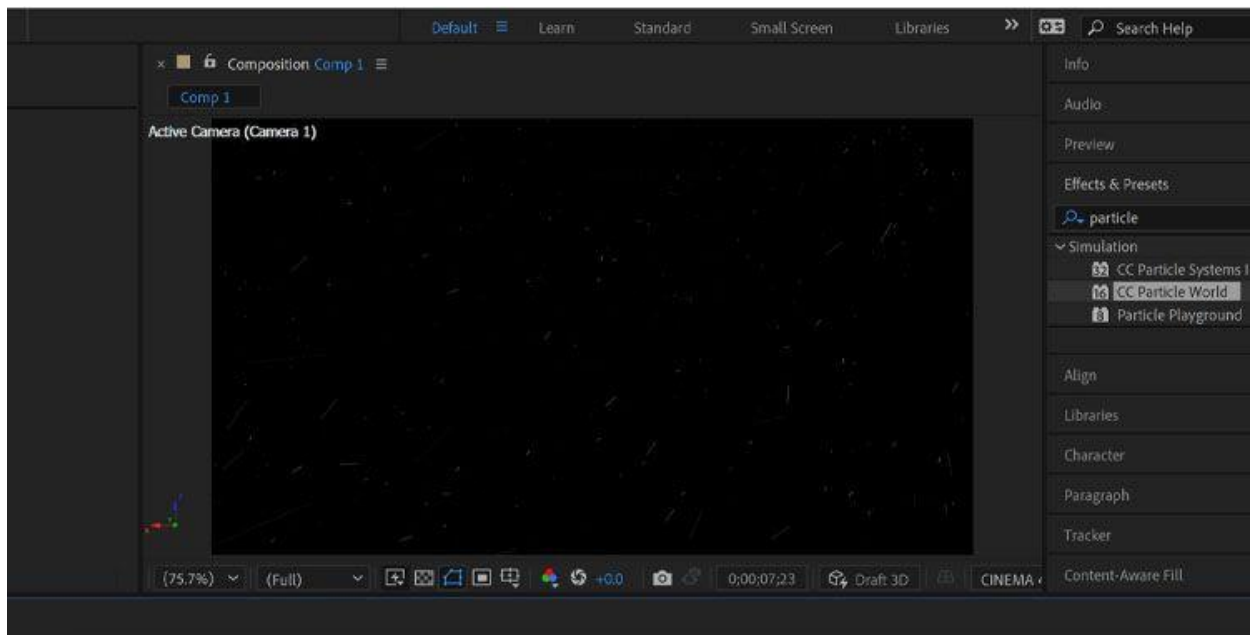


Figure 7.15: Choosing CC Particle Work Effect

STEP 4:

Apply to set the desired setting for the effect. The preview composition will look somewhat like as shown in Figure 7.16.

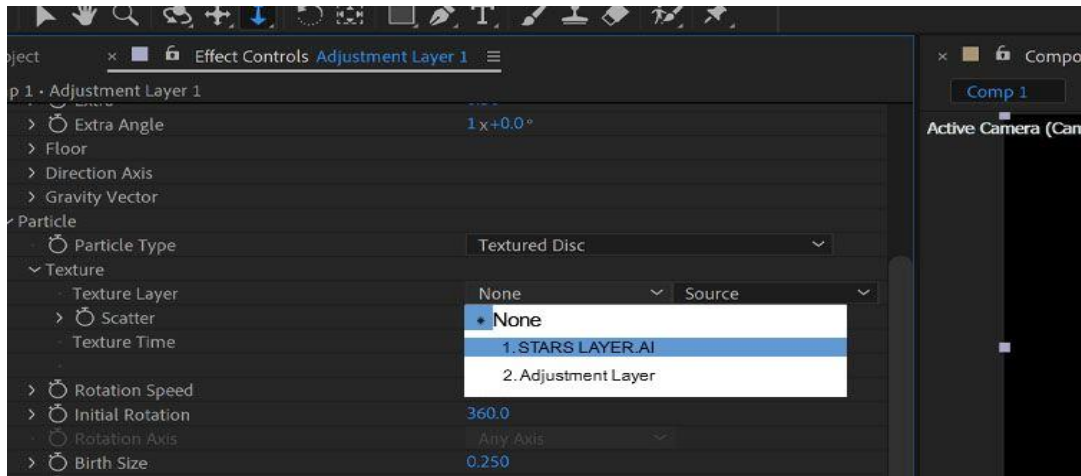


Figure 7.16: Selecting CC Particle World Texture Layer

STEP 5:

Change the texture of “CC PARTICLE WORLD” by clicking > Particles on timeline > Select Texture > Select your Stars layer, as shown in Figure 7.16.



Figure 7.17: Final Preview

STEP 6:

Adjust the “CC PARTICLE WORLD” texture as per your requirement > Add some text in your final composition as shown in Figure 7.17.

7.10 Paint Effect

The Brush tool allows you to paint on any layer, similar to an actual paintbrush. You have various settings to browse, which can assist you with tweaking different properties of the brush as per your requirements. To use a brush tool in your composition, follow the steps listed below.

STEP 1:

First, change your workspace to “paint,” which allows you to navigate brush tools and their properties efficiently. Click on the two arrows on the top left side in the toolbar > A drop-down menu will open up > Select Paint workspace. You will notice, your previous workspace panel replaced with the panels related with paint and brush tool, as shown in Figure 7.18.

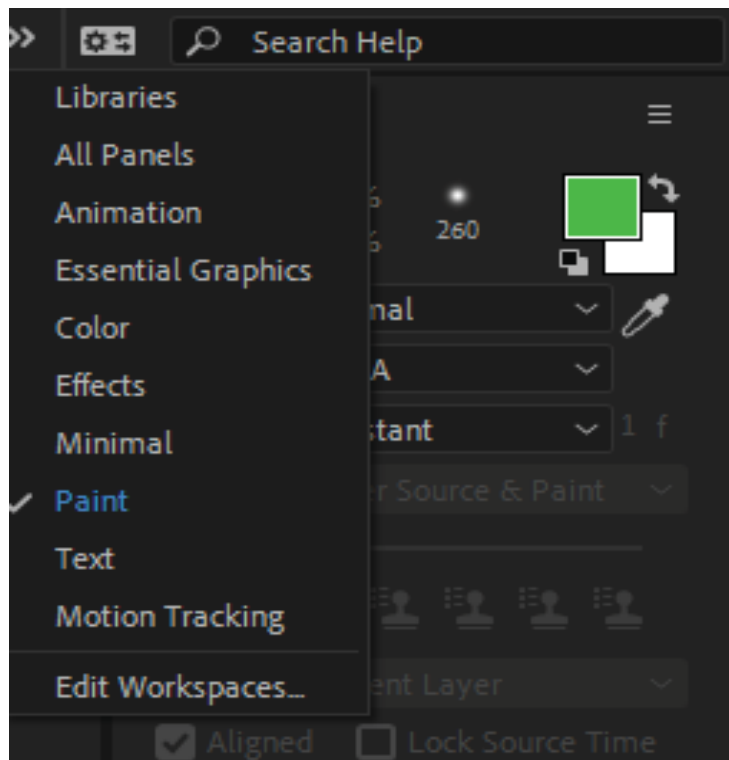


Figure 7.18: Workspace

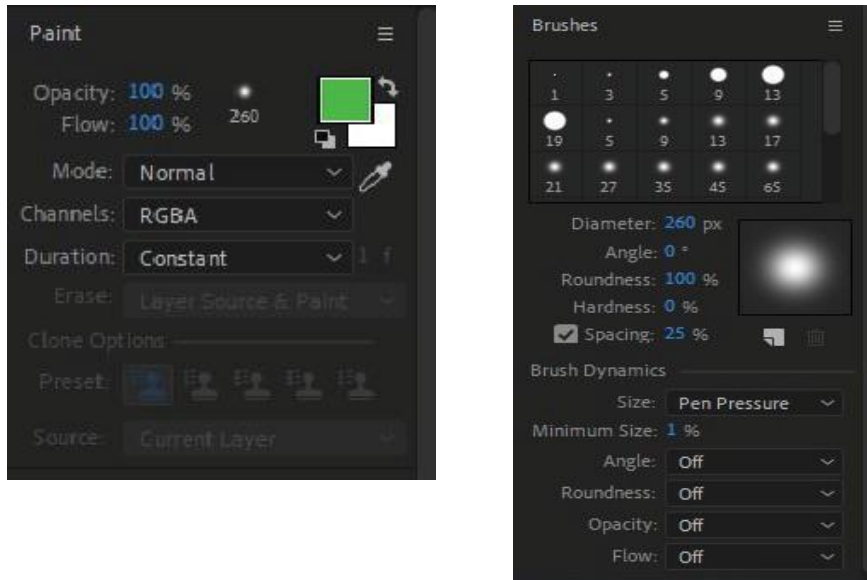


Figure 7.19 (A): Paint Workspace 1

STEP 2:

Previous work panels change to paint and brushes panels, as shown in Figure 7.19 (A) and (B):

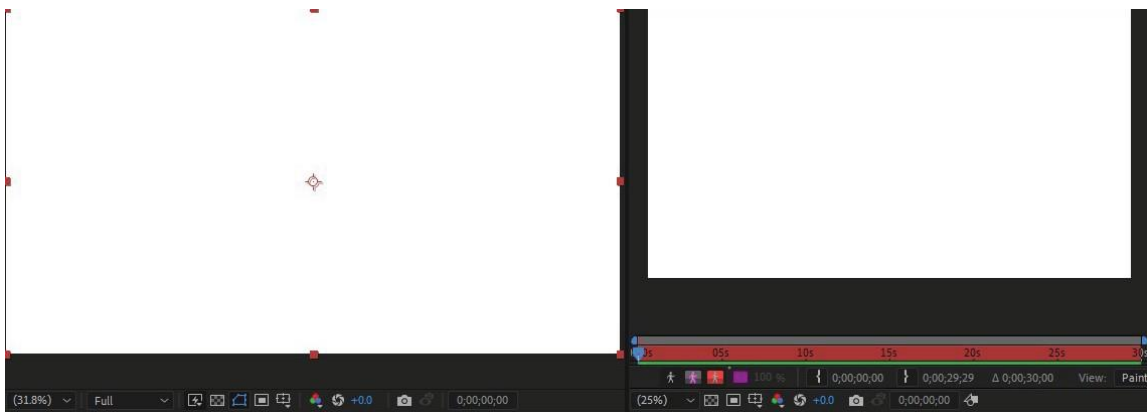


Figure 7.20: Composition and Layer panel

STEP 3:

Select a layer on which you want to apply the “paint effect.” Double click on the composition window to open the layer window. Through which you apply the “pain effect,” as shown in Figure 7.20.



Figure 7.21 (A): Brush To

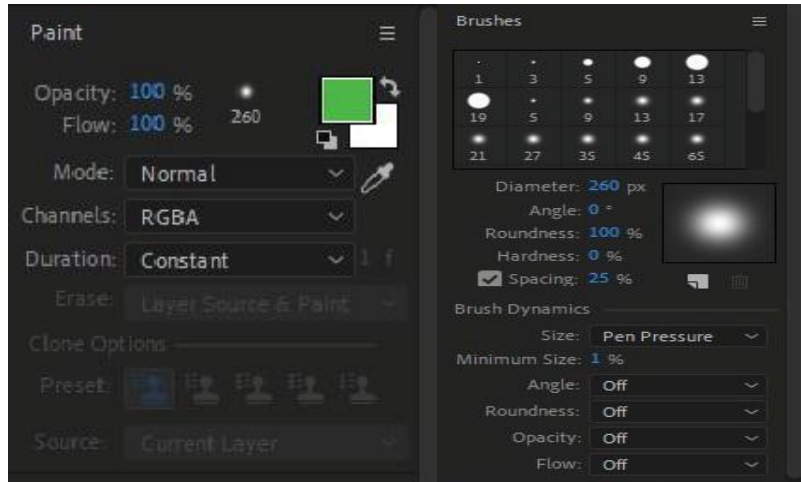
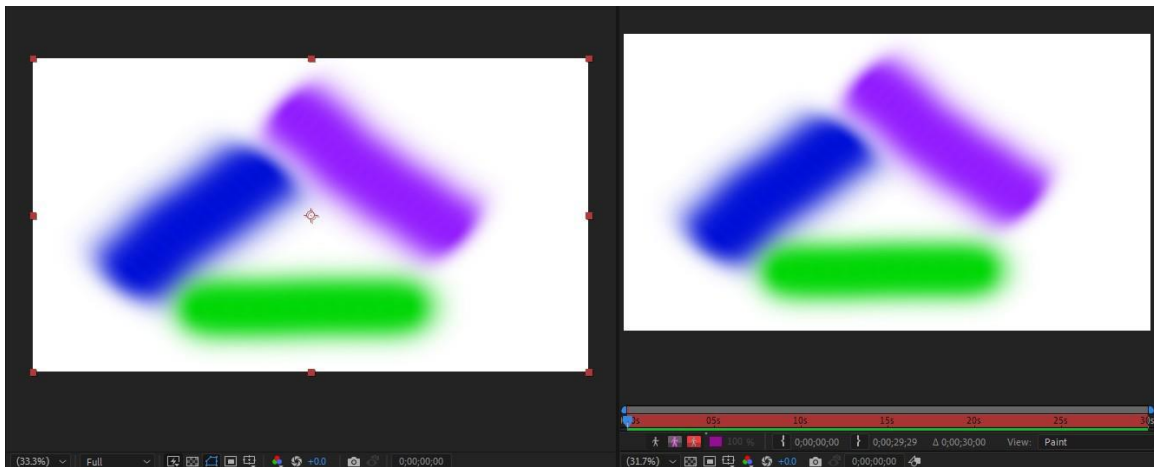


Figure 7.21 (B): Pain & Brushes Workspace

STEP 4:

Choose the brush > Change the properties of brush from “Brushes Panel.” Choose your colors as per your requirement > Apply paint on your layer window, as shown in Figure 7.21 (A) and



(B).

Figure 7.22: Composition and layer pane

STEP 5

After applying “paint-effect” on your layer window, your final composition look like this, as shown in Figure 7.22.

Write On Effect

The "Write-on" effect allows us to draw on a layer like other brushes, but the difference is that this effect creates a new key-frame when the user creates a recent stroke. Follow the steps to create your first effect using this technique.

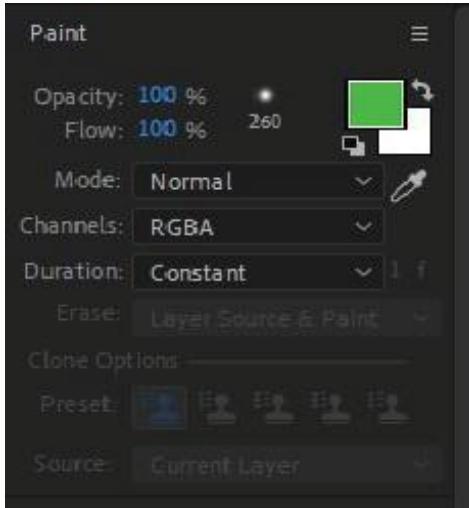


Figure 7.23(A): Paint Panel 1

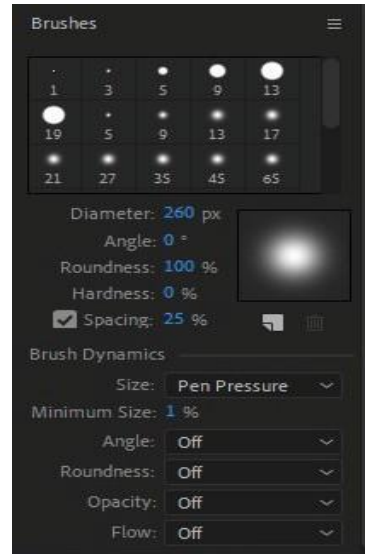


Figure 7.23 (B): Brushes Panel 1

STEP 1:

Create a new composition > Import image/footage if necessary > Change your workspace to "paint," as shown in Figure 7.23 (A) and (B).

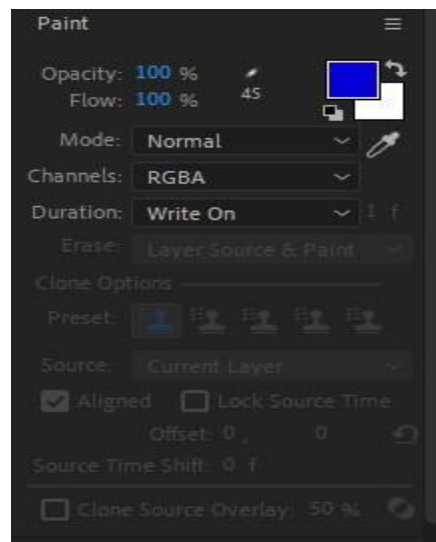
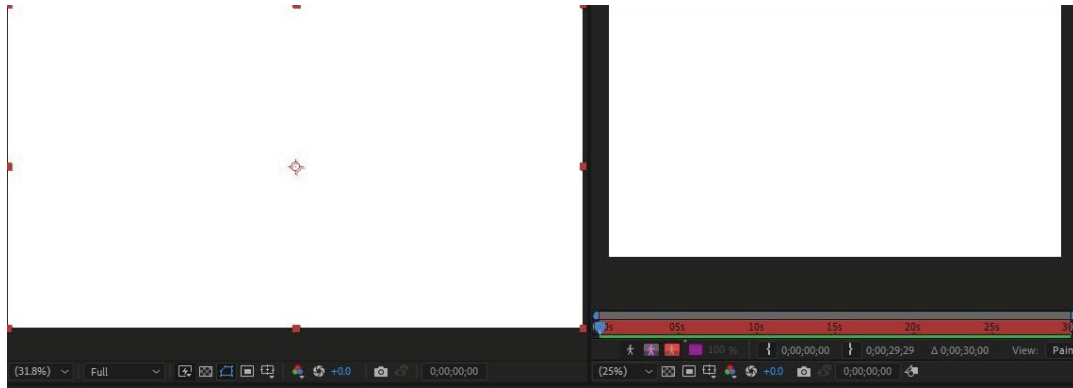


Figure 7.24: Paint Panel

STEP 2:

Select the brush tool > Change the paint duration settings to “write-on,” shown in Figure 7.24.

Figure 7.25: Composition and Layer Panel



STEP 3:

Double click on the composition to open the layer panel on the right side of the composition to draw on, as shown in Figure 7.25.

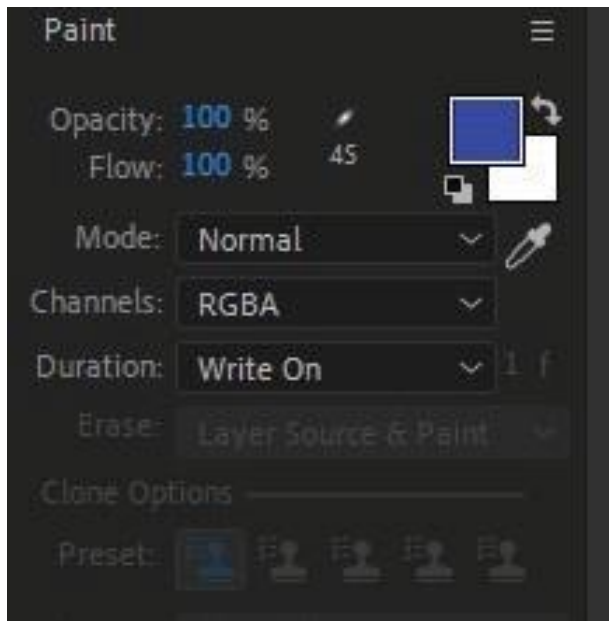


Figure 7.26 (A): Paint Panels

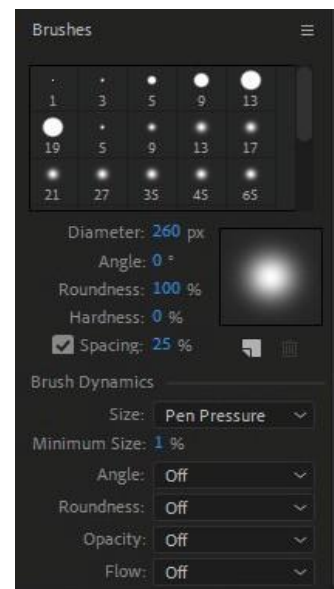


Figure 7.26(B): Paint Panel

STEP 4:

Configure your brush from the “Brushes panel” and choose your desired color from paint panel to meet the requirement, as shown in Figure 7.26 (A) and (B).

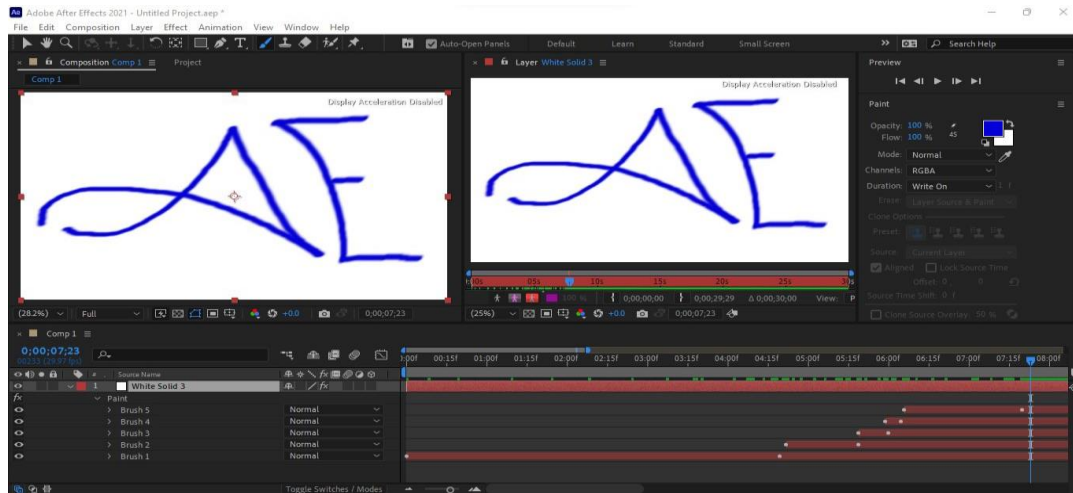


Figure 7.27: Composition / Layer Preview

STEP 5:

Place your play-head on zero seconds. Draw a text with a brush tool on layer widows. While completing your first stroke, you will notice that it will disappear because the after-effect creates a new brush with every new stroke and places key-frames on the stroke's starting and ending point, as shown in Figure 7.27.

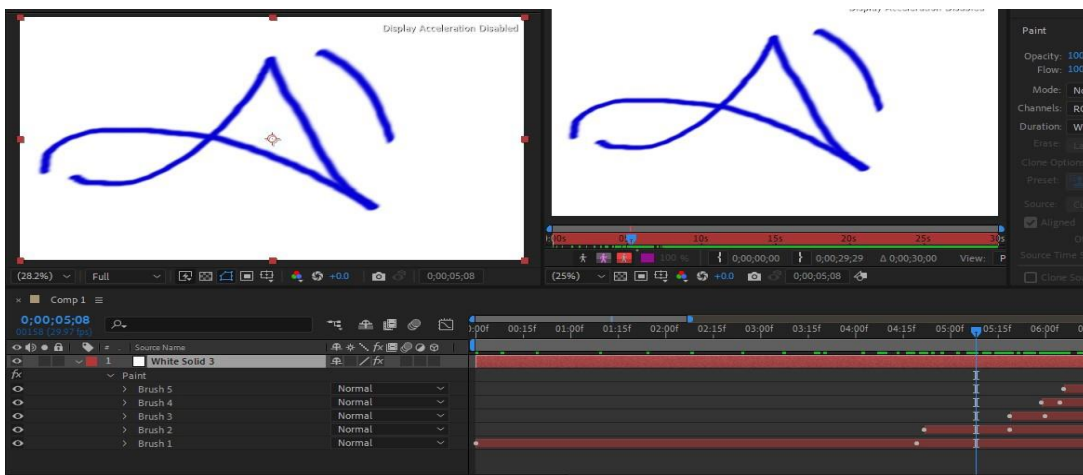


Figure 7.28: Composition / Layer Preview

STEP 6:

After finishing, bring back your play-head on 0 seconds, and press space-bar to start previewing the final results, as shown in Figure 7.28.

Scribble Effect

After-effects is already packed with significant effects, which helps us create brilliant animation and add life to our videos. This section will learn what the “scribble effect” is? and how to use this in text. Follow the steps listed below to add “scribble-effect” to your reader.

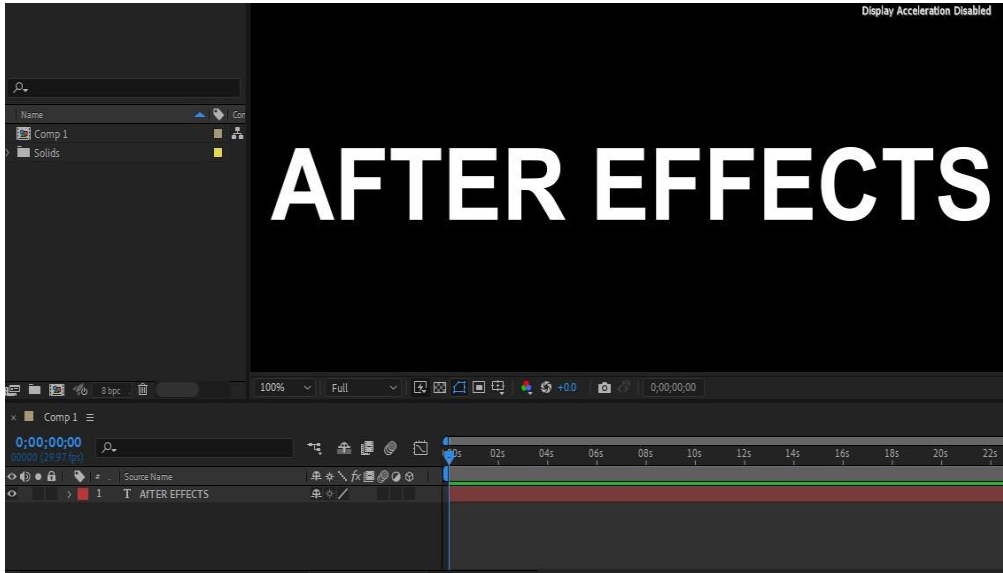


Figure 7.29: Composition Preview

STEP 1:

Create a new composition > Select text tool to add some text in your composition, as shown in Figure 7.29.

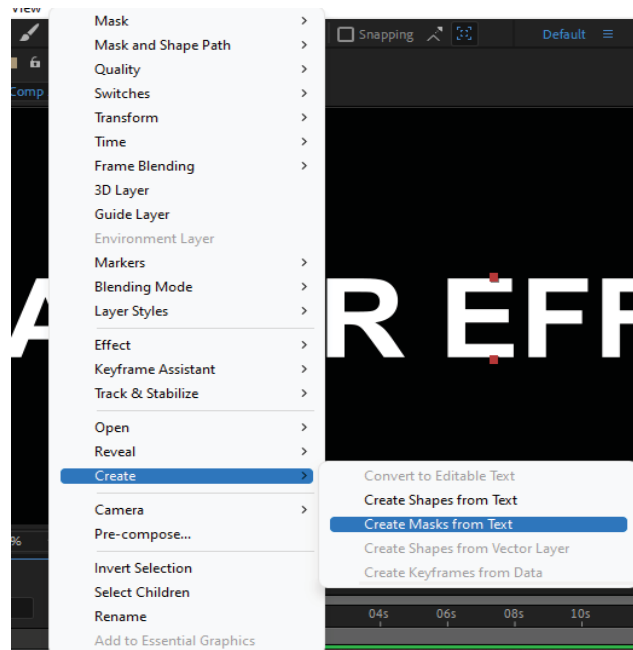
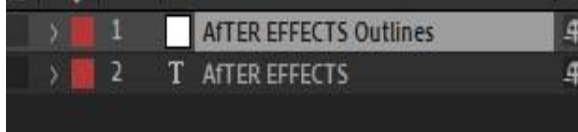


Figure 7.30 : Converting Text Layer

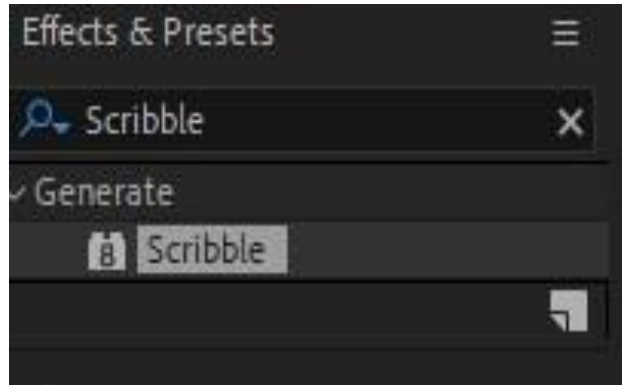
STEP 2:

Convert your text layer into mask > By right-clicking on to the text layer > Click on Create button > Select create a mask from text, as shown in Figure 7.30.

Figure 7.31 (A): Composition Preview Figure



7.31 (B): Timeline Preview



STEP 3:

After creating a mask from text, a new layer was created with each letter having its own separate mask, as shown in Figure 7.31 (A) and 7.31(B).

Figure 7.32: Effect Panels



STEP 4: Go to “Effects and Presets” panel and type “scribble” in the search bar, in Figure 7.32.

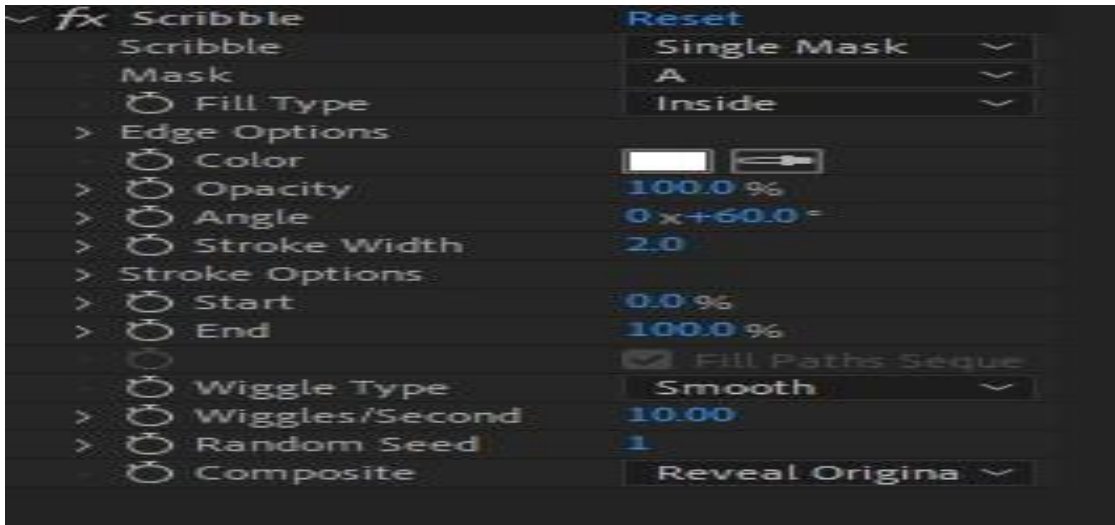


Figure 7.33 : Control and Effects Panel

STEP 5:

The effect values were set to default, as can be seen, is Figure 7.33.

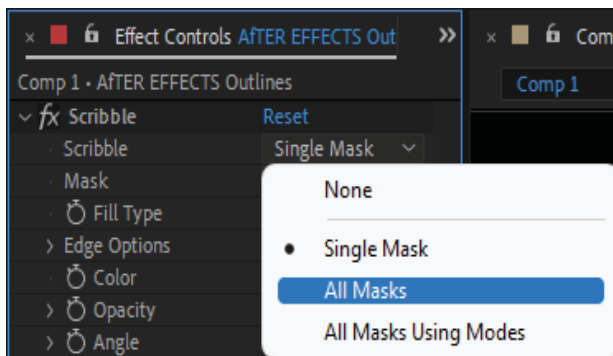


Figure 7.34 (A): Control and Effects Panel

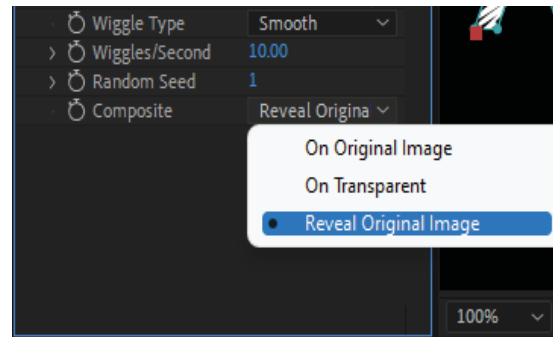


Figure 7.34 (B): Control and Effects Panel

STEP 6:

Change scribble mode to All mask > Set composition mode to Reveal-Original. These steps allow us to see the effect on the text, as shown in Figure 7.34 (A) and (B).



Figure 7.35 : Composition Preview

After implementing the required setting, your final composition looks like this. Press the space bar to see the animation, as shown in Figure 7.35.

Stroke

This effect allows us to animate various stroke properties of a layer. There are a lot of ways to animate stroke. Following are the steps to animate the stroke of a layer.

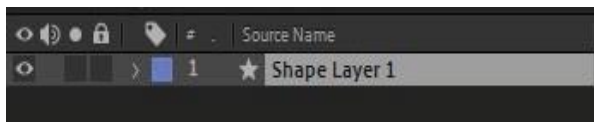


Figure 7.36 (A) : Layer Preview

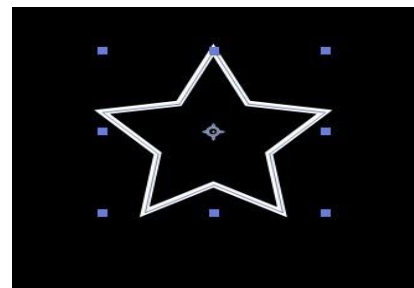


Figure 7.36 (B) : Composition Preview

STEP 1:

Draw a shape on your composition > Set fill to none > Set stroke width according to your requirement. A shape layer was created in the timeline, as shown in Figure 7.36 (A) and (B).

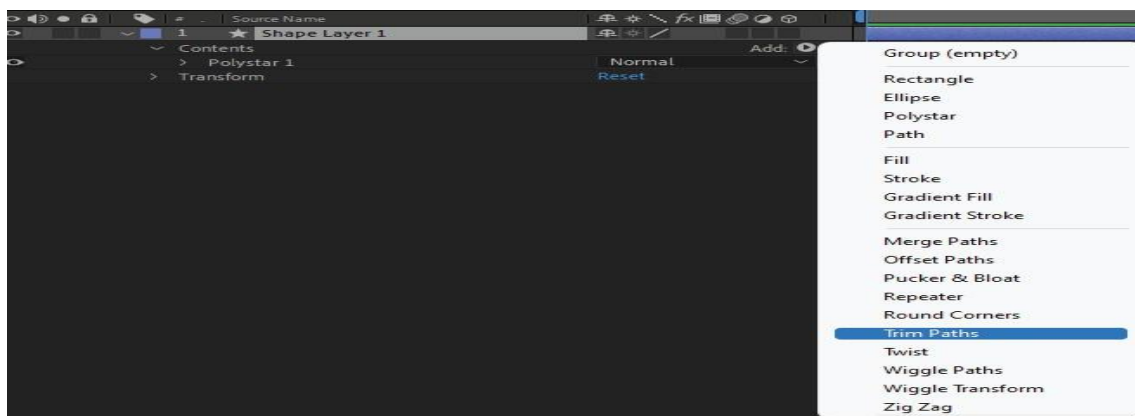


Figure 7.37: Timeline Preview

STEP 2:

Expand the properties of shape by clicking on the arrow located on the left side of the composition name > Expand content property > Click on the ‘Add’ property button located on the left front side of the content property > Add “TRIM PATH.” property, as shown in Figure 7.37.

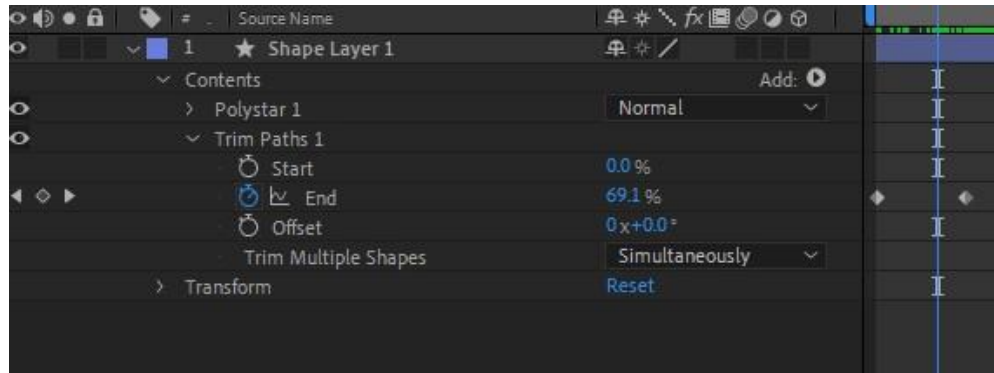


Figure 7.38: Timeline Preview

STEP 3:

A new “Trim Path” was created. Set your play-head on zero seconds, add END attributes key-frame with 0% value > Move play-head at two seconds, and set END attribute value to 100%, as shown in Figure 7.38.

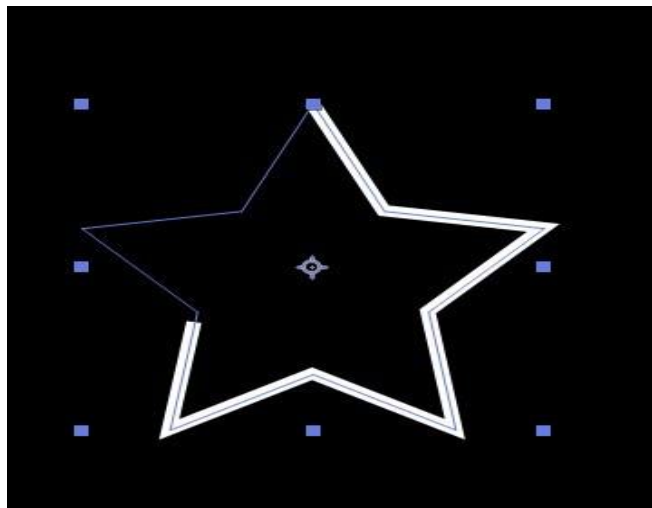


Figure 7.40: Composition Panel

STEP 4:

After applying all necessary settings, you have an animated stroke of a shape layer, as shown in Figure 7.40.

7.11 Color Balancing

Instead of changing the color of each element in a composition individually, you can use the Tint effect to achieve the result. Select the layer > Go to the color correction sub-menu in the effects menu and select the Tint Effect. Utilize the Map Black, and Map White settings open from the effect controls panel to calibrate the tones in the chosen layer. Changing the map black to choose will supplant the dark pieces of the layer with the color you chose, while Map White To feature enables you to return the white areas of a layer with a new color.

The Tint effect is beneficial if you need to change the color of black or white layers, but you can also desaturate a layer. Just apply the effect to a color video you would like to turn black and white, and then you can accentuate a particular color by picking a new shade under the Map Black to and Map White settings. Follow the steps listed below to apply the tint effect.

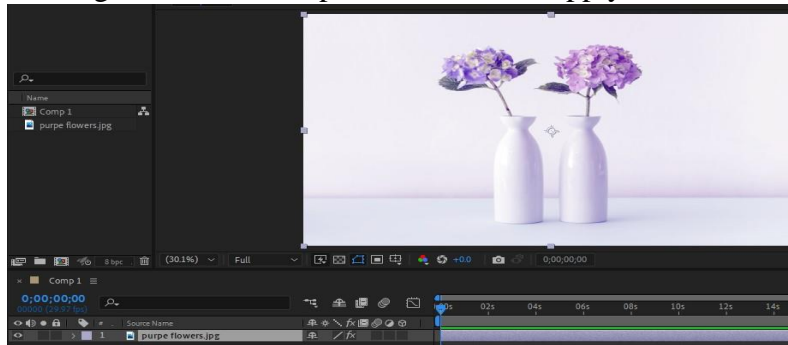


Figure 7.41 : Composition showing color balancing

STEP 1:

Create a composition > Add image/video on which you want to apply effect, as shown in Figure 7.41.

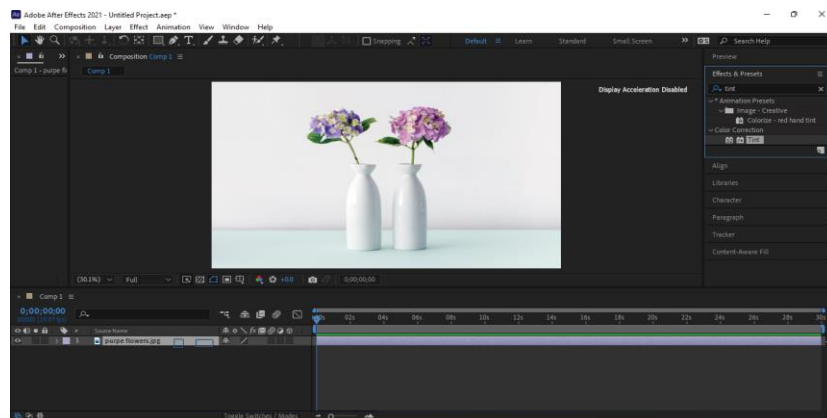


Figure 7.42: Composition with color balancing

STEP 2:

Open Effect and Preset panel > Search Tint Effect > Drag and Drop the effect on the layer as shown in Figure 7.42.

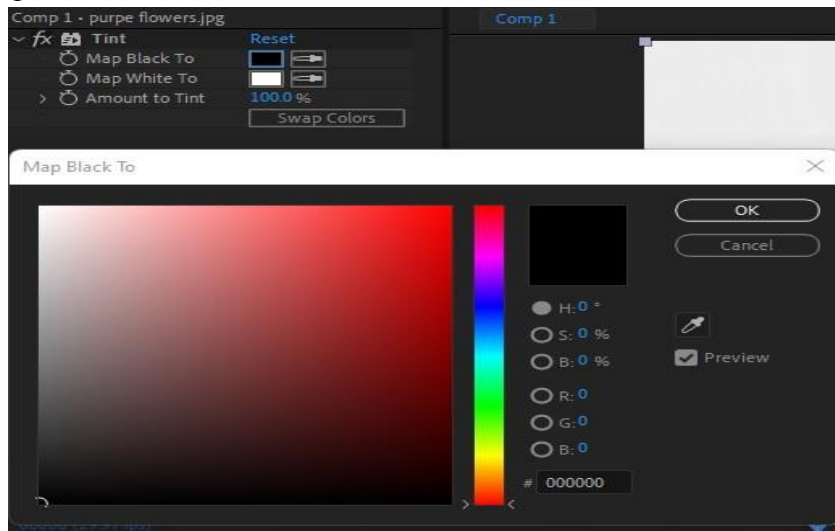


Figure 7.43: Color Picker

STEP 3:

Select the “MAP BLACK TO” and “MAP WHITE TO” to set the colors > Color pick-up box will open, as shown in Figure 7.43.

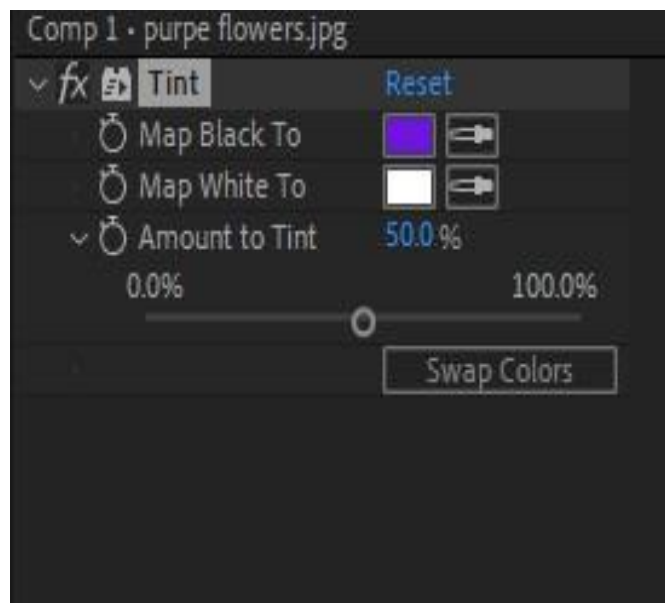


Figure 7.44: Effect Settings

STEP 4:

Choose the colors> Adjust the effect values as your desire, as shown in Figure 7.44.

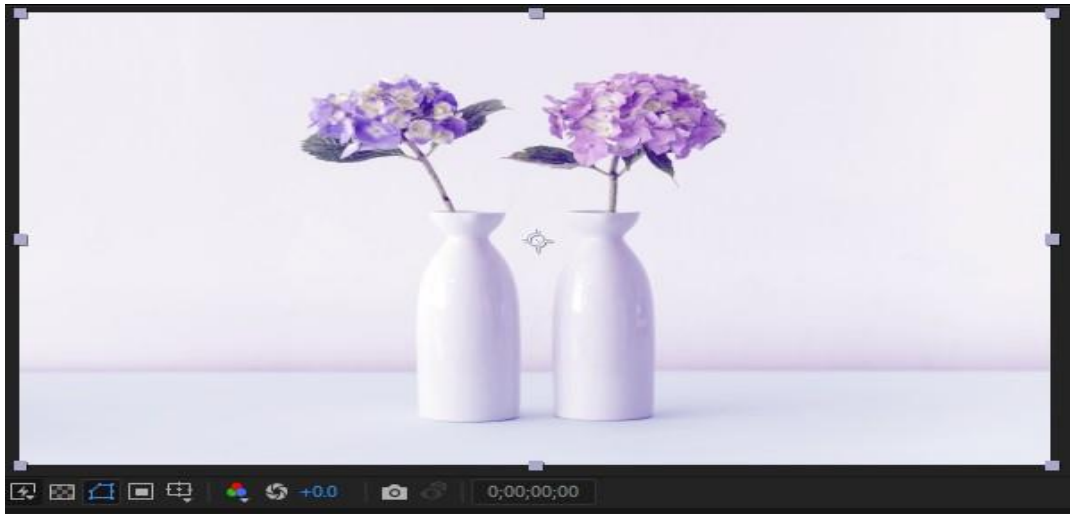


Figure 7.45 : Color Balancing Preview

STEP 5:

You can see the changes in the composition window, as shown in Figure 7.45.



Figure 7.46 (A): Before Color Balance

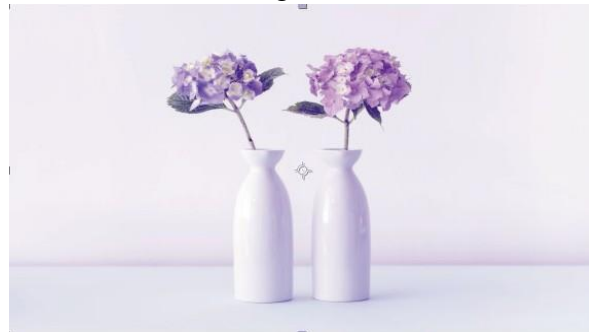


Figure 7.46 (B)After ColorBalance

STEP 6:

Here you can see the clear difference of before and after applying the tint effect as shown in Figure 7.46 (A) and (B).

7.17 Idea of Keying

Keying is defining transparency by a particular color value (with a color key or chroma key) or brightness value (with a luminance key) in an image. When you key out a value, all pixels that have similar colors or luminance values become transparent. Keying makes it easy to replace a background of a consistent color or brightness with another image, which is especially useful when working with objects that are too complex to mask easily. The technique of keying out a background of a consistent color is often called blue screening or greens screening, although you don't have to use blue or green; you can use any solid color for a background

7.12 Tracking and Stabilization

With motion tracking, you can follow the moment of an object and afterwards apply that to another layer. You set up, start, and apply motion tracking through the Tracker panel. Likewise, you can change, edit all properties of the tracker. You can set regions to follow by setting track focuses in the Layer panel. Each track point contains a component area and an append point.

7.13 Motion Tracking User Interface

You set up, start, and apply movement following the Tracker panel. Similarly, you can change, animate, manage, and interface the following properties in the Timeline pane with all properties. Set the regions to follow by setting track focuses in the Layer panel. Each track point contains a component area and an append point.

A. Search region B. Feature region C. Attach point

Feature Region

The feature region defines as the component in the layer to follow. The feature region should include a particular visual element, ideally one object. You can select different feature regions.

Search region

The search region defined as the region that After Effects will look to find the followed object. The tracked object should be particular just inside the area, not inside the whole casing.

Attach point

The attach-point assigns the spot of connection for the objective. The layer or impact control highlight synchronized with the moving component in the followed layer, as shown in Figure 7.47.

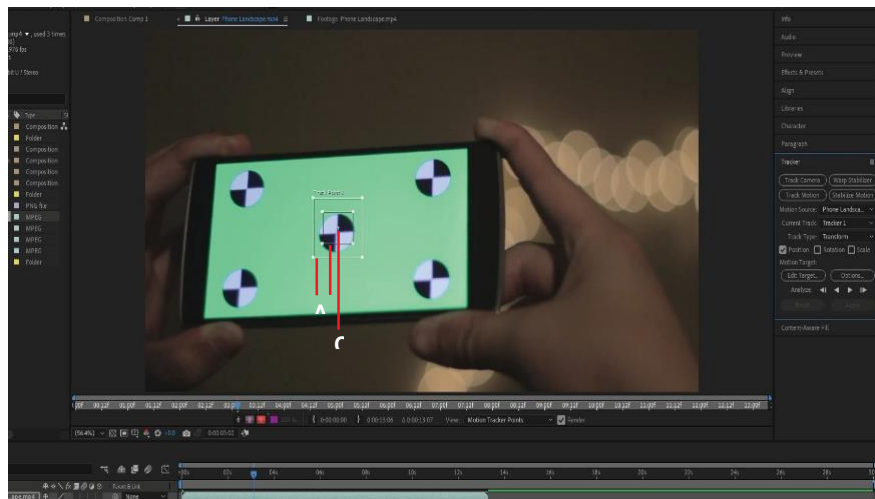


Figure 7.47: Tracking

Motion tracking workflows

There are several ways you can do motion tracking in After Effects, It depends on your workflow and idea, what kind of tracker do you need.

Mask tracker

Utilize the mask tracker to draw mask around your object to follow just specific bit in your scene.

Face tracker

The face tracking allows you rapidly apply effect just to a face, like a particular shading correction or hide an individual's face.

However, with Face Tracking, you can track specific parts of the face such as pupils, mouth, and nose, allowing you to isolate and work on these facial features with greater detail. For example, change the colors of the eyes or exaggerate mouth movements without frame-by-frame adjustments

3D Camera tracker

Using the 3D camera tracker effects to remove camera movement and 3D scene. You can then effectively composite 3D layer over your 2D film.

Point tracker

Motion tracking and balancing out motion are similar cycles, just with an alternate objective and result. Use Track Motion to follow the movement and apply the outcomes to an alternate layer or impact control points. Use Stabilize Motion to follow directions and apply the results to the tracked layer to make up for that movement (for instance, to eliminate camera shake).

To balance out a layer, After Effects tracks the movement of an element in the layer that is used to be fix the edge and afterwards utilizes the following information to set keyframes to play out the composition. You can settle to eliminate any mix of changes in position, resolution, and scale while leaving required movement un-affected. For instance, if the camera is panning, deselect position, however, select Scale and Rotation as the properties to balance out. When choosing Rotation or Scale in the Tracker board, you set two track focuses in the Layer board. A line interfaces the connect focuses; a bolt focuses from the first append point to the second. If conceivable, place the component locales on inverse sides of a similar article, or if nothing else, on objects that are a similar separation from the camera.

The farther separated the districts, the more precise the computations and the better the outcome. Eventual outcomes work out pivot by estimating the difference in point of the line between the connected focuses; applying the following information to the objective After Effects makes keyframes for the Rotation property. Eventual outcomes work out Scale by looking at the distance between connect focuses on each edge. The distance between the append focuses on the beginning casing applying the following information to the objective After Effects makes keyframes for the Scale property.

When you track motion using either equal or viewpoint corner sticking After Effects apply keyframes for the Corner Pin impact to scale and slant the objective layer as essential to fit the four-sided region characterized by the component locales. In reality, the component districts should lie in a solitary plane, such as on transport, on a similar divider, or the floor. The connected focuses should all lie in alone aircraft but not identical to the element districts.

Motion tracking options

Track Name

You can likewise rename a tracker by choosing it in the Timeline panel and squeezing Enter on the primary console.

Tracker Plug-in

The tracker plug-in was utilized to perform motion tracking. This is built-in tracking plug-in included with-in After Effects.

Channel

The parts of the picture information are used for examination while looking for a counterpart for the element. Select RGB if the followed highlight is unmistakable coloring.

Process Before Match

Temporarily blur or sharpen an image to improve tracking. Blur reduces noise in the footage. Enhance colors or refine the edges of an image and makes them easier to track. You can use this feature in your various projects, including tracking some birds

7.14 Expressions to animate shapes

Expressions are pieces of code written in the JavaScript language for adjusting the After-Effects layer properties. When you compose an expression on a property, you can begin making connections between that property and different layers. Expression's controllers found in the Effects and Presets window can help you with bettering control of the expression.

7.15 Adding Expression in After Effects

You can add expressions to any layer and any layer property inside After-Effect. Some expressions are short and easy to use and understand, while other expressions are lengthy and complicated. Even if they seem complex, pasting them inside their dedicated space should do the trick, as shown in Figure 7.48.

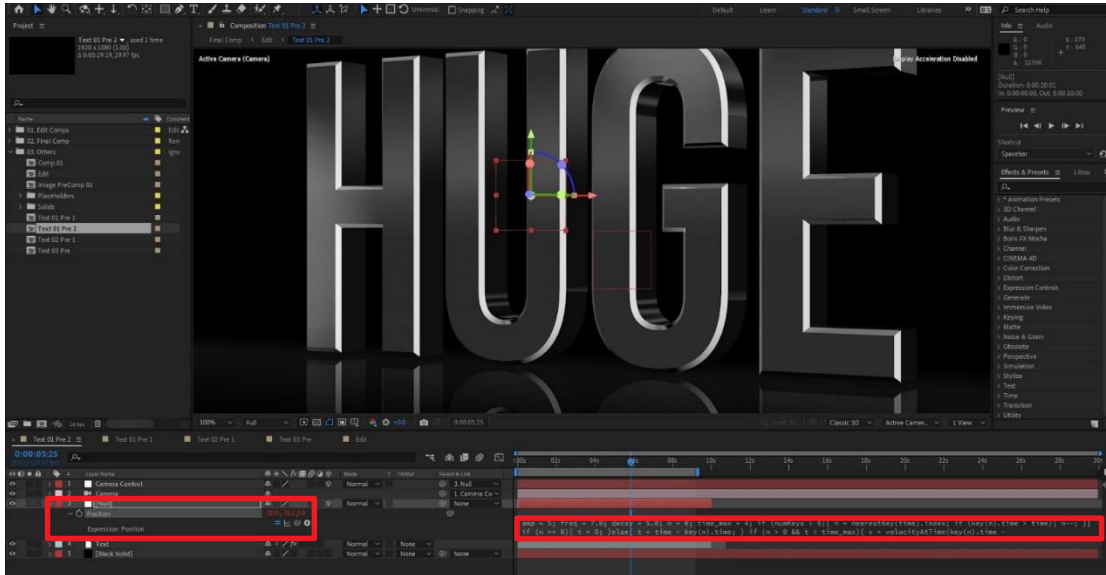


Figure 7.48: Expressions

7.16 Animate shape using Expression

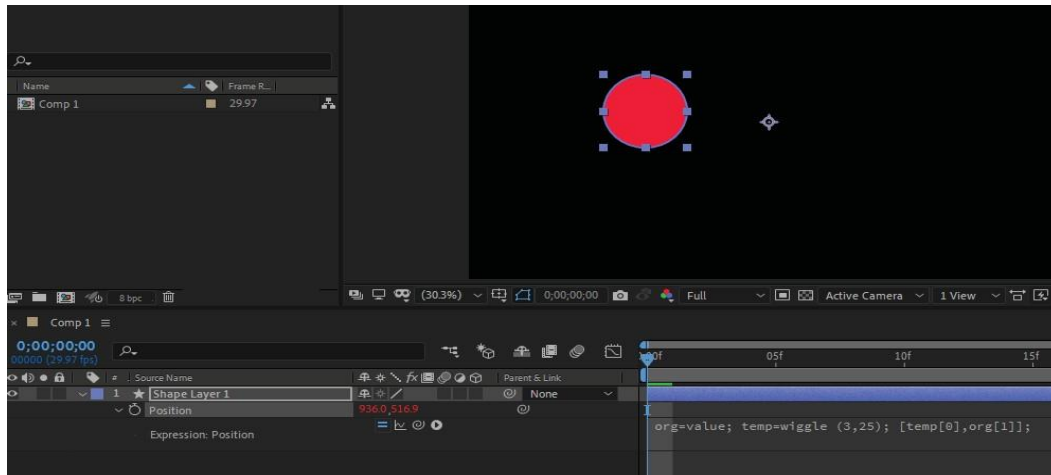


Figure 7.49 : Expression in position property

Step 1

Draw a shape on composition, and Hit P to bring position property of shape as shown in Figure 7.49.

Step 2

In the property section click + alt button on a stop watch of position property > Then past your expression.

7.17 Adjust the expression direction, parameters, loops

To change the expression attribute, you have to understand how the expression works. For example, in previous example, we used a Wiggle phrase, the syntax of expression is as follow:

```
org=value; temp=wiggle (3,25); [temp [0], org [1]];
```

If you look at the expression, it has three sections. The first ORG= Value defines the original shape or layer where the following expression is applied.

TEMP = Wiggle (3, 25), which defines the wiggle axis of the moment. 3 is the x-axis, and 25 is the y-axis, so if you want to reverse the direction, add - to revert the action. The same goes for every attribute to change it.

To add a loop in an expression, we can set the number of rotations of the expression, so in the following example, org [1] is defined to get the expression in loop so, here we can type 0 or 1 to add loop effect in an expression.

KEY NOTE:

Every expression has different sort of approach, so it is recommended to read the notes of an expression which is being used in any project.

7.18 Explore New Expressions:

Understanding how after effect can take expression is pretty tricky because creating a new expression would take along. So to fix this, you can use a free expression offered by multiple websites online. Here is some cool expression to practice. time – returns a composition’s current time in seconds. time.to Fixed (2) – limits how many numbers are allowed after the decimal. time*n – just like time, but it multiplies the value it provides, “n” can be any number you want. Expression are really powerful tool if you want to quickly to get a job done.

7.19 Changing Background of Object

To change the background of an object using the “keying effect”, follow the steps listed below.



Figure 7.50: Green Screen Car

STEP 1: Import Image/footage in your composition, as shown in Figure 7.50.

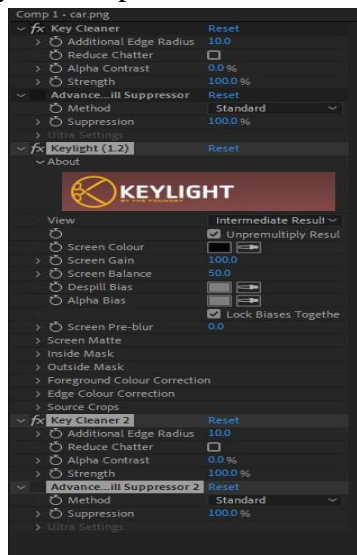


Figure 7.51: Key Light panel

STEP 2:

Open “EFFECT and Preset panel” > Search Key-light effect > Drag and Drop this effect on the layer. A new window, the Effects control panel, will open on the left side of your composition, as shown in Figure 7.51

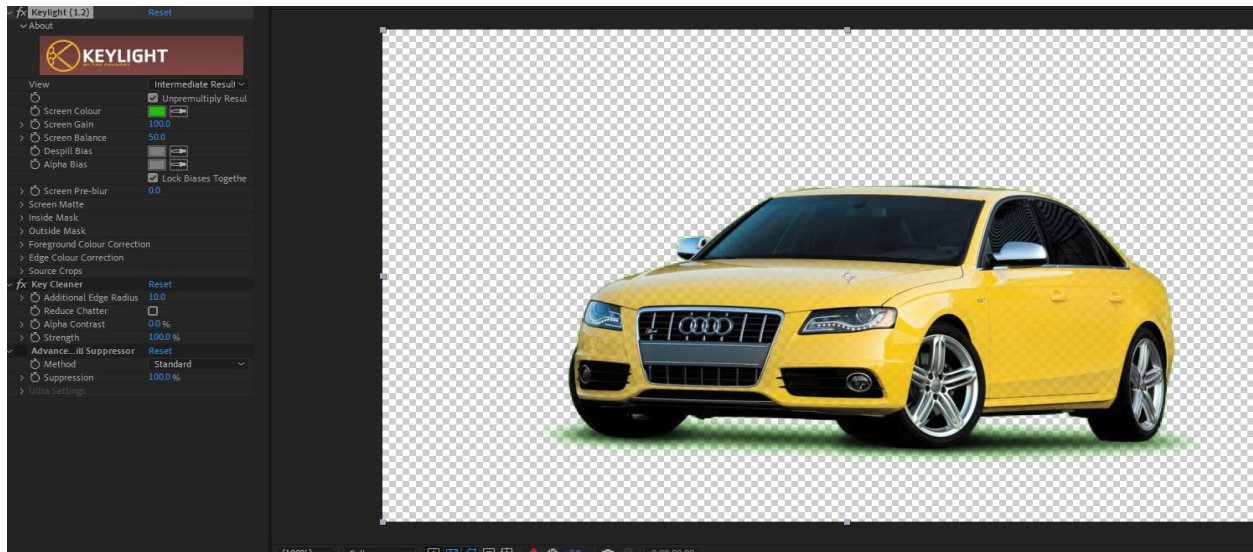


Figure 7.52: Keying car

STEP 3:

Select a screen color to apply effect on that particular color in footage > Click on an eyedropper tool and select the color closet to the subject as shown in Figure 7.52.

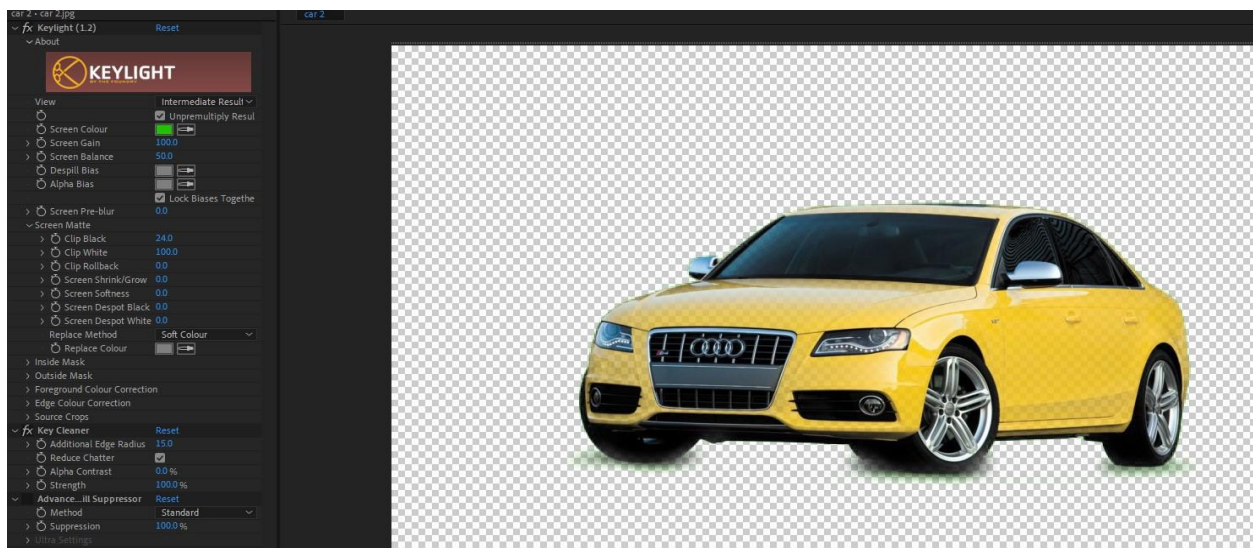


Figure 7.53: Keying car composition

STEP 4:

After selecting the color, you will notice green color shading left in some parts of the footage. To get rid of this, click on the screen mat drop-down button > Increase value of “clip-black” and “Clip-white” as per your desired preference, as shown in Figure 7.53.

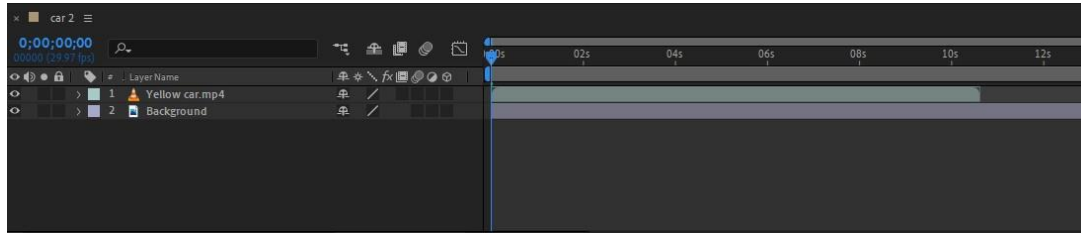


Figure 7.54: Timeline Preview

STEP 5:

Let's change the background of the footage > Import your background in the composition and place the background layer under your original footage, as shown in Figure 7.55.

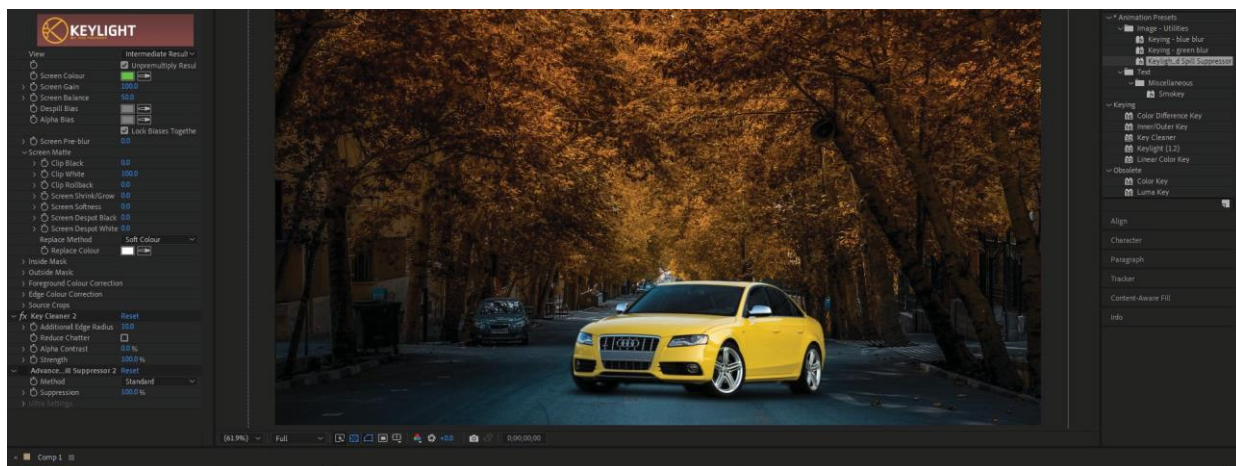


Figure 7.55: Composition Preview

STEP 6:

After changing the background, your final composition will look like this, as shown in Figure 7.55.

7.20 Exporting The Footage:

In the above section, we have already discussed how to Render the final footage using render queue/adobe media encoder. Check chapter 6, section 10 (rendering and output) section.

Key Points

1. 2D shapes can be characterized as level plane figures with just two measurements length and width.
2. 3D shape can be characterized as a strong figure or an article or shape with three measurements Length, width, and tallness.
3. An invalid object is an invisible layer that has every one of the properties of a noticeable layer, so it very well may be a parent to any layer in the creation.
4. Color balancing is defined as applying an effect or preset to change the look of the composition instead of changing the whole color.
5. Expressions are pieces of code written in the JavaScript language with the sole the motivation behind adjusting the After Effects layer properties.
6. Keying is characterizing straightforwardness by a specific shading or luminance quantity in a picture.

Activities.

1. Create a 3D text layer in Adobe After Effects?
2. Apply shadows and light to the 3D text layer?
3. Create a Null object in composition?
4. Apply multiple effects to the 3D text layer.
5. Render and export a project using an adobe media encoder.
6. Perform animation on objects, lights, points of interest, and auto orient.
7. Perform the 3D operations on an image?
8. Apply tracking and stabilization objects.
9. Preform expressions on image / video / text?
10. Apply rain effect in a desert scene

Notes for Teacher.

1. Explain the concept of 2D and 3D with real-world objects.
2. Elaborate the “Role of lighting” in 3D Scenes.
3. Explain “Null object” to students by performing in after effects.
4. Explain how to use multiple effects on a layer.

9. On which principle, repositioning of shapes works:

- a) Queues b) Stakes c) Array d) Both a & B

10. Which effect is used to balance the color of a composition:

- a) Mate effect b) Fill c) Smoke d) Tint

Give short answer to the following questions

1. Define “2D”, “2.5D”, “3D” concepts in after effects?
2. What is a Null object in Adobe After Effects ?
3. Define the term “Region of Interest.”
4. Define “expressions.”
5. Define the term “Keying.”
6. Define rendering order of 3D layer in after effects?
7. Name motion tracking features are in after effects.
8. Define loops of expression?
9. Define the order of render in after effects.
10. How to identify the 3D layer.

Answer the Following Questions in detail

2. Explain the role of Camera and Lightning in 3D space?
3. Explain the process of keying?
4. Explain the rendering order of 3D layers?
5. Discuss file extension for Adobe After Effects?
6. Explain the purpose of tracking and stabilization?

Chapter 8

MEDIA PRODUCTION MANAGEMENT



In this section, student will be able to:

- Define Media.
- Define management.
- Describe media production management.
- Learn techniques of media management.
- Determine strategies for delivery of human resource services.
- Manage the delivery of human resource services.
- Evaluate human resource service delivery.
- Manage integration of business ethics in human resource practices.
- identify prospects for sales.
- Learn about to pitch services to client.
- negotiate deal with client.
- close the sales opportunity.
- maintain Customer Database.
- provide customer services.
- develop a personal budget.
- develop long term personal budget.
- Identify ways to maximize future finances.
- Define Project Management
- Know about the phases of PM

8. Media Management

8.1 Definition of Media

Many definitions of media are possible. If we take media as communication, we may define media as a generic term, 'media as the plural form of the word medium', which means to communicate through a channel. This channel can be described with anything from newspapers to Internet news blogs. All these channels are part of traditional to modern media. These both serve the purpose of spreading information in public by giving the public awareness of the surroundings.

Communication between channels involves media. This term is specifically used in the computing context. Everything that can affect or inspire the public, namely the telephone, television, and the Internet, is regarded as media. The communication media refers to devices used to store data (i.e. hard drives, CD-ROMs, floppy disks, USBs, etc.). The devices which transmit data (cables, wires), or even transmit data under multiple forms (video, sound), podcasts, etc.) all are media. In modern times, the media is increasingly inclined to the digital aspect of the field.

Current computerized media incorporate all types of communication that work by phenomena of sending electronic data across the world through PC organizations. Also, the underwater fiber optic cables. All these fiber optics are connected in a specific topology. A portion of these cutting-edge types of media, like the Internet or web-based media channels (Facebook, Twitter, Instagram, and so on) have changed our daily life.

Another way to categorize media is Mass media. Mass media refers to the process of sharing information with the public. This sharing of information can be done by any channel of media. These channels include film, radio, books, music, or television. The role played by an audience is only listening or viewing information but they cannot send feedback.

8.2 Definition Of Management

Management is a term we usually use in daily life by saying "how to manage something?". Let's take an example here. Suppose, you are a member of the school debating society and you are responsible for conducting the whole debating event. Now you know that you have some friends who are doing a debate in the Urdu language and some are going to do debate in the English

language. So, you plan with your other member of the debating society to manage (plan) the things. You write the names of students who are debating in Urdu. Similarly, you make another list for the students who are going to debate in the English language.

This small planning activity in which you make a list, then arrange their names according to the order in which they will come on stage is called as management of an event. A simple definition of management is as under: -

“Management is the Planning, organizing, staffing, directing and controlling functions or processes.”

There are five important points in this definition that needs to be understood clearly.

Planning

Planning is considered the first part of management. It is a question of defining the goals, future directions of the organization, and determining the missions and resources necessary to achieve them. As it has been discussed in the previous example, where you started planning by writing the names of each student in two lists.

Organizing

Organizing is the second part of management. It means to put something to carry out a well-crafted plan. Organization involves how a person will assign resources and coordinate across all processes. To continue with our example here, first, you make a list of all students now you will arrange their names in the order in which they will be appeared on stage.

Another way is to arrange a list according to the relevance of topics.

Staffing

Staffing is the third part of management. Staffing means finding the right person with the appropriate qualification and skills to complete a task. For example, you have organized the debate event, now you need to look for an announcer/presenter to help you in starting the event, calling out the names of all participants of the event and closing of the event.

Directing

This is the fourth part of management. process of directing is done by allowing a person to perform the job at right time. Just like your debating event where you will direct your presenter about the

plan organized earlier. This directing is also done by your teacher (supervisor) who always asks students to revise the previous lesson before starting a new one.

Controlling

The last part of management is controlling. Controlling refers to how a deviation from the planned task is handled by the person in control. The one who has planned and organized is also responsible for controlling the things that don't appear the way they should. For example, Suppose, one of the debaters takes extra time in the, event, then you should be controlling the situation. One way is to signal the debater (participant) not to exceed the time limit. Another way is to shorten the time of the next debater.

Activity

Can you think about one more example of controlling?

8.3 Media Production Management

Media production management is a vast field. Media production management is not only limited to the media industry but also linked with the entertainment industry and other industries' media sections. As you have known that media is not only limited to radio, TV, and newspaper. It is also linked with social media and multi-media. The process of media production management is described as

“Managing production, direction, controlling media functions and businesses.”

The term media production management is also known as “Operational Management.” It is a branch of media management. Under media management, all the process from strategic management to production management all belongs to it. Media production management plays an important role while defining processes like capturing, processing, moving, and editing media files.

Media production management is about ensuring the creative use of resources. The timely completion of a project within its budget. The art of managing media production is closely connected with the analytical skills of the person.

The Media Production management process involves the making of a motion picture, video, TV show, commercial, or any audio/video element provided to viewers over the internet or transmitted through cable, broadcast radio wave, social media, , a satellite or in a printed form. The production refers to the stages required for the completion of a media project. These stages include Development, Pre-Production, Post-Production, and Distribution.

Development: It is defined as the foundation of production. In the course of development, the production team discusses the audience, background, ideas, and intentions. The choice of production equipment and technology takes place at this stage.

Pre-production: This is the planning step. Considering the type of public, description, background, and the production is planned. The situation is planned means how it will affect the viewers. Storyboards and notes are used to document things in the planning.

Production: Production is the real filming of the video. It is the process of working from raw materials. The considered plan is recorded in this phase. It may be an individual process or it may include several people with specific roles. Filming of the product is highly focused in this phase.

Post-Production: Post-Production is the stage that brings out a refined product which is either a video or photograph. Once the film or video is shoot, there are series of tasks require to make it a good quality film. Editing, color grading, adding sounds, and voiceovers all are part of this stage. In post-production, a raw form of film is processed to make it reach its full potential.

Distribution: Distribution is a process, which involves selling / handing over the produced film/video. Once post-production is carried out smoothly, marketing of the product is the next challenge. Finding the right audience was done in the pre-production stage but getting to them is important. Getting to your viewer through the right medium includes advertisements, posters, banners, and social media marketing. In distribution, you also involve third parties to collaborate with you. This collaboration reaches different audiences at the same time. So, more people get introduced to your product (i.e., film/video).

8.4 Techniques Of Media Management

Media management is the process of defining goals and achieving them. The whole process involves several people who work together at different stages. There are important techniques that help in better media management.

Find the Right Channels/Medium:

Finding the right channels is the most important aspect a media manager should know about. In the past, when the only medium was a newspaper and people use to share information by verbal communication. Till now many mediums/ (channels) have been appeared for example, TV, Radio and the Internet.

The right channel can be found by learning about audience interest. Gather information about their age, likes, and dislikes, what kind of film/video or photographs do they like to see. All such questions need an answer which will help you in identifying the perfect match of audience.

Create value:

By creating value means the right audience will always like good quality content. To create value in work involves adding high-quality images, proper editing, and good textual content. Another example of value creation is shooting a video and some photographs for Defense Day. You choose to put this content on social media. Many people will like your work because you choose the right work for the right audience at the right time and place.

Connecting with Audience:

Connecting with audience technique is used to bridge the production team with an audience. The distribution of your produced product needs attention from the audience. In a traditional medium where only interaction is limited. Social media has opened a gate for endless communication between the media and the audience. People now like to provide feedback and ratings to things they watch. Such ratings help the product gain popularity.

Use Team Skills:

This technique is useful whether you are working in media management or at home. Every member of your team is skillful. Every member knows something that you don't know. To utilize each member's skills, one must collaborate with his team members.

Understand clearly their strengths (areas where a specific person is good) and weaknesses, also, areas where a specific person is not good enough). Decide on each member's grouping with others. Once you make balanced groups of people with the best skills. You have done a great job towards the success of your project.

Innovate:

Innovation and the creation of good things will always lead you to success. Don't be afraid to do experiments while learning and using a new skill. innovation means transformation. It will help you learn new things in new ways. You can find several ways to do the same thing and thus choosing the best one. Such attitude of innovation is good in building experience for beginner to expert.

Activity

Ask your friends about their strengths and weakness.

8.5 Determine Strategies for Human Resource Services

Human resource services are the process of finding, selecting, hiring, and training of workers. All those activities that involve workers are carried out by the human resource department.

When we mix both the human resource services with strategic management. As a result, we determine the strategies that will help the HR service to perform efficiently.

Human Resource Services is the discipline in which strategically place people according to their strength will achieve a competitive advantage as compared to other businesses.

A strategic approach to Human Resource Services helps in achieving better job results, better employee recognition. It highlights the areas which need attention first. It also boosts the revenue of an organization.

The following are the strategies determined for Human Resource Services:

Precise Requirements for Employing:

The first strategy is to determine the accurate requirements for the person being hired. The job description should focus on important details. Unnecessary details should be avoided to make things clear and short.

The preciseness of text will also take less time for the job applicant to match his/her details.

Selection of Qualified Individuals:

The second strategy for human resource services is to select highly qualified persons for the job. Understanding that those qualified individuals are good for your company is a strong strategy.

Training of Employees:

The training of employees is the process in which an organization spends its resources to train employees. The whole process involves experts from different departments having experience of different levels conduct such training sessions. In these sessions, employees are encouraged to learn new things. Performance is also graded. In long term, we can say that training needs time but is fruitful for organization prospects.

Appraisals:

The term appraisal means to give awards to high performers in your organization. This term might be new to you but it is simple as you won a race and as a reward, you were given a gift as an appraisal.

Appraisals are beneficial when organizations want the growth of its employee. Employees tend to perform well if incentives are given on time as a reward.

8.6 Manage The Delivery of Human Resources Services

Human Resources Service delivery is the process of managing all things from employee hiring to its retirement. On-boarding and payroll are also included. The whole lifecycle of employee stay at one organization is managed by HR Service delivery.

The following are the ways that allow HR persons to manage Service delivery efficiently:

Service Level Agreement (SLA): An SLA is an important document that is signed between two or more parties. The purpose of this agreement is to note down all conditions. Properly note all important points and don't miss anything. The rule of thumb is to not sign this official document before each party is satisfied with the agreement.

Quality Assurance-QA is the way of conforming to the needs and standards of governing bodies. QA is defined

as doing things according to some pre-defined standards so that desired quality is met.

The field of Quality Assurance is vast and many people prefer to be in this field because once a product is made. It should be tested against some standards. For example, you have shot a video and now you want to check its quality. It will be determined by watching the content, which editing technique is used, Is the goal of the video fulfilled or not. If you can answer these concerns, it means you have produced quality content.

8.7 Evaluate Human Resource Service Delivery

To evaluate is to assess the performance on some parameters. The following are how we can evaluate the Human Resource Service Delivery:

- It can be evaluated by taking feedback in form of face-to-face sessions and comments. Open surveys and satisfaction surveys are also helpful in this regard.
- After collecting feedback from all your concerned parties. Combine these surveys analyses. Formulate a strategy on the analysis performed. This role of action should be conducted within an organization. No third party is involved in the analysis.
- Human Resource Service Delivery is responsible for correct analysis performed. Recommendations should align with the analysis. The new strategy plan agreement is drafted again. It should contain how new amendments will affect the organization? How these practices are implemented with change in previous agreement (SLA).

8.8 Manage Integration of Business Ethics in Human Resource Practices

Ethics is a fundamental part of any field. Ethics define the way of doing some work professionally. A person's work ethics define their role in an organization. Ethical behavior is a way of conduct and is divided into two parts:

- Personal Values: Personal values are those values that you learn from home. It is related to your personal experience.
- Cultural Values: Cultural values are based on individual's beliefs and expressions of a group.

At the organizational level, the values or ethics determine right or wrong according to some business rules. As mentioned earlier, individual beliefs might affect organizational motives. Some

ethics which are solely drafted for business should be applied within an organization because they help in achieving better quality.

One should understand properly the code of conduct, It maintains workflows according to pre-defined or standardized solutions. Monitoring the feedback and perform better decisions on received feedback is also part of an integration of ethics in HR. Business ethics can be determined by observing organizational behavior and working environments of an organization.

It is advised to keep organizational decisions secret so that no break/theft of information might happen.

Customer Services and Sales

Customer services refers to assistance and guidance a company provides to its customers before, during, and after a customer buys a product. The quality of customer services cast strong impact on the customer satisfaction. Customer satisfaction is one of the key factors that lead to rise in sales.

8.9 Identify Prospects for Sales

A sale is an exchange of cash for products, services or other property. A sales prospect is a person who could become a buyer for business products based on certain traits or metrics. Identifying sales prospect helps to take benefits from different available mediums effectively. Here are some ways through which prospects for sales can be identified:

- Ask for referrals: Your current customers may know people who is willing to buy your business's products or services. Referrals can build great sales prospects because the referrals are already familiar with your business.
- Use social media: Social media is a great source for sales and marketing in this era. You can easily use it in marketing to increase your presence. Through social media you can increase your brand awareness, attract your potential customer and increase your sales.
- Use prospecting tools: There are number of tools available in the market for salespeople through which they can identify the prospects for sales. e.g., Prospect.io, which helps you find emails and contact potential customers.

- Use email marketing and direct mail: Email marketing is still the most effective marketing strategy beating all other new techniques through which you can easily identify prospects of sales. Potential buyers and returning customers are sent emails about new products and seasonal sales.
- Website is also a right prospecting tool: With the correct and useful content on your website, you can convince customers to join your newsletter. You can use to your website to catch leads and deliver them to your salespeople.

8.10 How to Pitch Services to The Client

In selling techniques, a sales pitch is considered as a presentation where the salesperson explains the benefits of the services to the customer to try and convince him to buy it.

Following steps can be taken to successfully pitch to a potential client.

- Start with the problem: Always start by identifying their problem. Ask the customer questions to learn more about the problem. The questions help to identify the real need of a buyer.
- Methodology/solution: After learning about the problem, present all of the available services to the customer.
- Identify the problem your company solves: The customer then decides which offer suits them best. They may ask more about the offer they are interested in.

8.11 Negotiate Deal with Clients

Negotiating with clients is very important for carrying your business to greater heights. It is an art that helps you negotiate with your clients. You will always run into someone who wants a better deal.

Here are the things that you can use to easily negotiate with your clients. This will help you to do better negotiations with a more positive mindset.

- Prioritize your goals: If you are going to negotiate with the client you should always prioritize your goals. The priorities

of your business are kept in mind while being flexible to the customer.

- **Must Know your alternatives solutions:** This gives you strength in negotiations because at some point, it is more useful to try and offer the alternatives to the client. This way they will either be persuaded more into buying the service, or choosing another one.
- **Show that you want to negotiate with client:** While presenting the alternatives, you should show that you want to negotiate. There should be some sort of flexibility in your offers if your business model allows it.

8.12 Close The Sales Opportunity

Closing the sale is defined as the process of obtaining an agreement from the customer to buy the service or product.

Better Timing to Close: When trying to close a sale with customer, look for buyer's signals and the things customers do or say to buy. These signals may include:

- Facial expressions of customer
- Body language of customer
- Comments for services.

General Rules for Closing the Sale:

- Recognize closing opportunities on time
- Help customers make the decision.
- Create an ownership mentality for the customer.

8.13 Maintain Customer Database

Your customer database, no doubt, is the most useable and valuable resources in sale and marketing. You can reuse it in future and make your customer permanent.

Here are the few tips that will help you to incorporate this into your business processes.

- **Capture your data correctly:** Ask the buyer to give his contact info, mail and email addresses. Make sure that you convince the customer to give the correct credentials.
- **Contact your database often:** Always be in touch with your contacts and keep updating them about new offers and products.

- Let customers make updates: Always give your customer opportunity to update their contact details of their own accord.

8.14 Provide Customer Services

Providing great customer service means following good habits like valuing customers' time, having a pleasant attitude, and providing knowledgeable and resourceful information.

Here are the ways to deliver great customer services.

- Know your Product: Being the seller of the product you need to know all about your product. Having accurate knowledge about your product is essential in pitching it to the customers.
- Maintain a positive attitude: Always maintain a positive attitude towards your customer. Positive attitude will lead towards better customer services.
- Solve problem with creativity:

Bad experiences lead to losing potential future clients. If they have had a bad experience with the customer services or the product itself, then the customer may never come back next time.

Activity

Maintain feedback record
Maintain record of regular client

8.15 Develop A Personal Budget

A business company must improve its budget to ensure that it spends money well and does not spend more than it can afford. Likewise, individuals who want to monitor their daily expenses must develop their own personal budget. A personal budget simply tracks money a person spends versus the money he/she earns.

Why budget is important

Personal budget is useful in reaching certain financial plan, saving plan, and for paying debts. It is also important for better financial health. Developing personal budget will also prevent you from overspending or spending the money you need in future.

Steps to develop personal budget:

- **Note your Income**
You may overestimate what you can afford if you do not keep your income in mind. Therefore, the first step to develop your personal budget is to note your personal income that you earn from different sources.
- **Track your spending**
It is necessary to track of your daily spending and categorize the areas where you spend. By doing this, you can easily identify that in which areas you should not be spending your budget.
- **Set your goals**
Before refining the information that you have tracked, make set of goals you want to accomplish in long or short term. Short term goals should not take more than one year to complete.
- **Make a plan**
Identify variable and fixed expenses you expect to have in coming months. After calculating the fixed expenses, you can easily estimate how much budget you have left for variable expenses.
- **Cut your want-to-have expenses**
Having documented your income and spending, it is easy to keep track of the money you have to put towards your goals. You should reduce the expenses being spent on things you want to have but you don't need to have.

- **Keep checking in**

To stay on track, you should keep reviewing the budget you are spending and the plan you made.

8.16 Develop Long-Term Personal Budget

Long-term personal budget is meant to achieve long-term goals. These goals can take several years or decades to reach. Your long-term goals often involve more money and more attention than short-term goals. Some of the long-term goals are:

- Paying off a debt
- Starting or investing in a business
- Buying a house

The following are the steps to develop long-term personal budget:

1. List all long-term goals you have to achieve
2. Estimate the money needed to achieve those goals
3. List all of your fixed essential expenditures
4. Estimate and list your variable expected expenditures
5. Estimate the amount of income that is left and is available to be invested in future goals
6. Choose investments that will help you get there
7. Figure out how much you need to put aside monthly

8.17 Ways To Maximize Future Finances

There are different ways through which you can maximize your future finances. Some of them are mentioned below:

- Record your expenses
- Make a monthly budget
- Identify your income being spent on wants and needs. Then cut out the expenses on “wants”
- Find ways to cut your expenses

- Set saving goals
- Do a monthly or weekly review of budget plan and the money you spent
- Do a market survey to identify the service or product needed in your city/area. Start a business or invest your money in an established business

8.18 Definition of Project Management

Project management is the application of processes, methods, skills, knowledge and experience to achieve specific project objectives according to the project acceptance criteria within agreed parameters. Project management has final deliverables that are constrained to a finite timescale and budget.

A key factor that distinguishes project management from just 'management' is that it has this final deliverable and a finite timespan, unlike management which is an ongoing process. Because of this a project professional needs a wide range of skills; often technical skills, and certainly people management skills and good business awareness.

8.19 Phases of Project Management

Phase 1: Project initiation

The project initiation phase is the first stage of turning an abstract idea into a meaningful goal. In this stage, you need to develop a business case and define the project on a broad level. In order to do that, you have to determine the need for the project and create a project charter.

The project charter is an important document consisting of details like the project constraints, goals, appointment of the project manager, budget, expected timeline, etc.

Once you have the project goals and project scope, identify key project stakeholders—the people who are to be involved in the project. Create a stakeholder register with the roles, designation, communication requirements, and influence.

Phase 2: Project planning

The project planning stage requires complete diligence as it lays out the project's roadmap. Unless you are using a modern project management methodology like agile project management, the second phase of project management is expected to take almost half of the entire project's timespan.

Check out how to implement an effective project roadmap.

In this phase, the primary tasks are identifying technical requirements, developing a detailed project schedule, creating a communication plan, and setting up goals/deliverables.

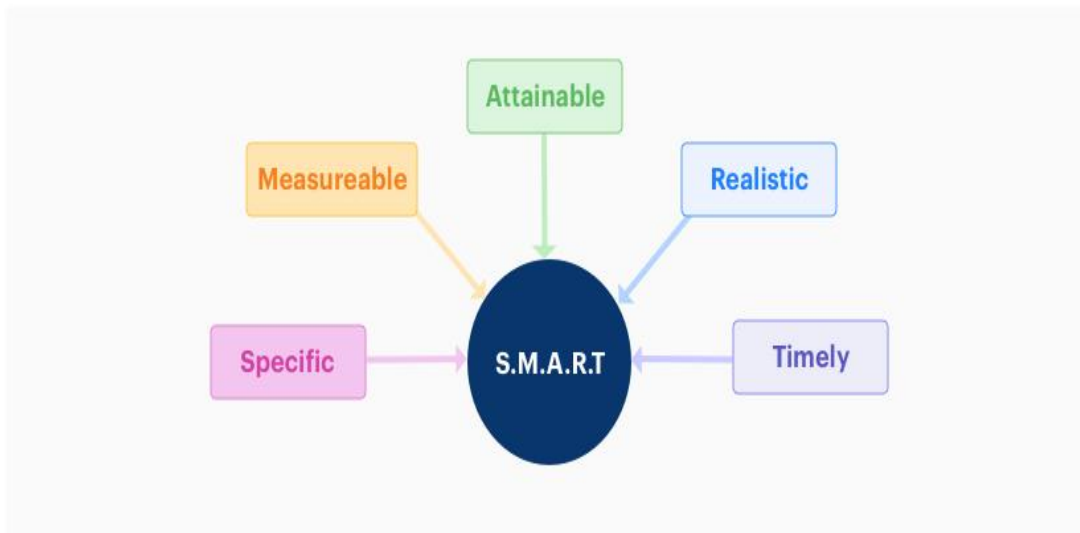
There are several methods of setting up the project's goals but S.M.A.R.T. and C.L.E.A.R. are the most popular.

Here is our Customizable Marketing Templates to try for Free:

- Marketing Plan Template to Streamline your Marketing Efforts
- Social Media Calendar Template for Social Media Planning

S.M.A.R.T Goals:

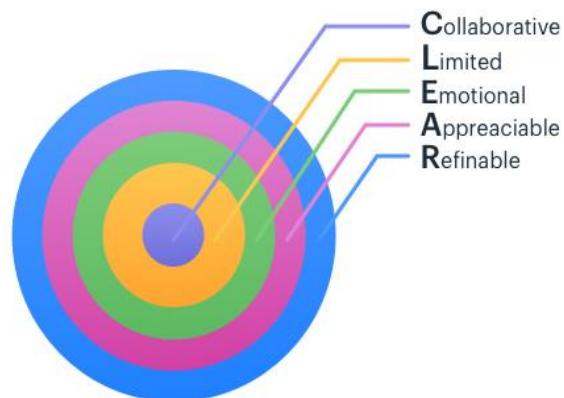
The '*SMART*' criteria ensure that the goals you set for your project are critically analyzed. It is an established method that reduces risk and allows project managers to make clearly defined and achievable goals.



The acronym SMART stands for

C.L.E.A.R. Goals:

The '*CLEAR*' method of setting up goals is designed to cater to the dynamic nature of a modern workplace. Today's fast-paced businesses require flexibility and immediate results and CLEAR can help you with that.



The acronym for CLEAR stands for “Clear, Limited, Emotional, Appreciable, Refinable”

During the planning stage, the scope of the project is defined. There is a possibility of changing the scope of the project demands it but the project manager must approve the change. Project managers also develop a work breakdown structure (WBS), which clearly visualizes the entire project in different sections for the team management.

Phase 3: Project execution

The project execution stage is where your team does the actual work. As a project manager, your job is to establish efficient workflows and carefully monitor the progress of your team.

Another responsibility of the project manager during this phase is to consistently maintain effective collaboration between project stakeholders. This ensures that everyone stays on the same page and the project runs smoothly without any issues.

You can take help from the best project collaboration tools that are available in the market. They’ll not only make your life easier but also improve efficiency and increase the productivity of your team.

Phase 4: Project monitoring and controlling

In the project management process, the third and fourth phases are not sequential in nature. The project monitoring and controlling phase run simultaneously with project execution, thereby ensuring that objectives and project deliverables are met.

As a project manager, you can make sure that no one deviates from the original plan by establishing Critical Success Factors (CSF) and Key Performance Indicators (KPI).

During the monitoring phase of project management, the manager is also responsible for quantitatively tracking the effort and cost during the process. This tracking not only ensures that the project remains within the budget but also is important for future projects

Phase 5: Project closing

This is the final phase of the project management process. The project closure stage indicates the end of the project after the final delivery. There are times when external talent is hired specifically for the project on contract. Terminating these contracts and completing the necessary paperwork is also the responsibility of the project manager.

Most teams hold a reflection meeting after the completion of the project in order to contemplate their successes and failures during the project. This is an effective method to ensure continuous improvement within the company to enhance the overall productivity of the team in the future.

The final task of this phase is to review the entire project complete a detailed report that covers every aspect. All of the necessary data is stored in a secure place that can be accessed by project managers of that organization

Key points

- If we take media as communication, we may define media is a generic term, ‘media as the plural form of the word medium’, which means to communicate through a channel.
- Mass media refers to the process of sharing information with the public.
- Management is the Planning, organizing, staffing, directing and controlling functions or processes
- Media production management is not only limited to the media industry but also linked with the entertainment industry and other
- Pre-production: This is the planning step.
- Post-Production is the stage that brings out a refined product which is either a video or photograph.
- Innovation and the creation of good things will always lead you to success
- The term appraisal means to give awards to high performers in your organization.

Notes for Teachers

- Discuss with students about the media production management as a business

- Help students in understanding step by step procedures of a media house
- Ask students that which job role attracts them
- Help students in getting sources for finance and budget management
- Brief students about the entire cycle of project management

Exercises

Select the Most appropriate option

1. Mass media is
 - a) For experts only
 - b) For beginners only
 - c) For public
 - d) For students only
2. Management is about
 - a) Controlling, Planning, Staffing.
 - b) Planning, Organizing, Staffing, Directing, and Controlling.
 - c) Staffing, Planning, Directing, Organizing, and Controlling.
 - d) Communicating, Abstraction, Organization.
3. One of the following is not a technique of media management.
 - a) Innovate.
 - b) Create Value.
 - c) Connecting with the audience.
 - d) Shooting Video.
4. Which of the following is not considered as the pitching of a service:
 - a) Start with the problem.
 - b) Methodology/ Solution.
 - c) Translation to problems.
 - d) Identify the problem your company solves.
5. Identify ways to maximize future finances:
 - a) Understanding the concept of cash flow.
 - b) Understanding the camera lens.
 - c) Lightning of an object.
 - d) Selecting the right location for an indoor shoot.

Give short answer to the following question

1. Identify the five major components of management.
2. Write any two techniques in managing HR Service delivery.
3. Write about the concept of cash flow.
4. Briefly explain the concept of a personal budget.
5. Write any two strategies for human resource services.

Answer the following Questions in detail

1. Write a note on management.
2. Write a note on negotiating a deal with the client.
3. Evaluate the process of Human Resource Delivery.
4. Write a note on the identification process of sales prospects.
5. Write a note on maximizing your future finances.

ABOUT THE AUTHOR



FAISAL RIAZ received his Ph.D. from Iqra University, Pakistan in 2018 in the field of Cyber Physical Systems (CPS) and currently serving as an Associate Professor in the Dept. of computer sciences in Mirpur University of Science and Technology. Moreover, he is working as the director in the office of research, innovation and commercialization (ORIC), MUST. He has more than 34 research publications in various national / international research journals and conferences. He is the author of three books as well. Furthermore, he is heading Control, Automotive and Robotics Lab, National Centre of Robotics, MUST AJ&K Pakistan. Under the banner of CAR-lab, he has innovated the world's first-ever cognitive and emotional Autonomous Vehicle. He got the hall of fame award in 2018 in the recognition of his smart innovations. He is the reviewer of many well-reputed journals. He has served as a technical program committee member in many international IEEE conferences. His reviewing profile can be viewed over <https://publons.com/author/742771>

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