

Government of Pakistan

National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"



Course Contents / Lesson Plan

Course Title: Database Administration (ORACLE DBA Track)

Duration: 3 Months

Revised Edition

Trainer Name	
Course Title	Database Administration (ORACLE DBA Track)
Objectives and Expectations	<p>Employable skills and hands-on practice in Database Administration (ORACLE DBA Tack)</p> <p>This is a special course designed to address unemployment in youth. The course aims to achieve the above objective through hands-on practical training delivered by a team of dedicated professionals having rich market/work experience. This course is therefore not just for developing a theoretical understanding/background of the trainees. Contrary to that, it is primarily aimed at equipping the trainees to perform commercially in a market space in independent capacity or as a member of a team.</p> <p>The course therefore is designed to impart not only technical skills but soft skills as well as entrepreneurial skills deemed essential for that purpose i.e., communication skills; marketing skills (including freelancing); personal grooming of the trainees and inculcation of the positive work ethics to foster better citizenship in general and improve the image of Pakistani work force in particular.</p> <p><u>Main Expectations:</u></p> <p>In short, the course under reference should be delivered by professional instructors in such a robust hands-on manner that the trainees are comfortably able to employ their skills for earning money (through wage/self-employment) at its conclusion.</p> <p>This course thus clearly goes beyond the domain of the traditional training practices in vogue and underscores an expectation that a market-centric approach will be adopted as the main driving force while delivering it. The instructors should therefore be experienced enough to be able to identify the training needs for the possible market roles available out there. Moreover, they should also know the strengths and weaknesses of each trainee to prepare them for such market roles during/after the training.</p> <ol style="list-style-type: none"> <li data-bbox="418 1539 1469 1822">i. Specially designed practical tasks to be performed by the trainees have been included in the Annexure-I to this document. The record of all tasks performed individually or in groups must be preserved by the management of the training Institute clearly labeling name, trade, session, etc so that these are ready to be physically inspected/verified through monitoring visits from time to time. The weekly distribution of tasks has also been indicated in the weekly lesson plan given in this document. <li data-bbox="418 1833 1469 1938">ii. To materialize the main expectations, a special module on <u>Job Search & Entrepreneurial Skills</u> has been included in the latter part of this course (5th & 6th month) through which, the trainees will be

made aware of the Job search techniques in the local as well as international job markets (Gulf countries). Awareness around the visa process and immigration laws of the most favored labor destination countries also form a part of this module. Moreover, the trainees would also be encouraged to venture into self-employment and exposed to the main requirements in this regard. It is also expected that a sense of civic duties/roles and responsibilities will also be inculcated in the trainees to make them responsible citizens of the country.

- iii. A module on **Work Place Ethics** has also been included to highlight the importance of good and positive behavior in the workplace in the line with the best practices elsewhere in the world. An outline of such qualities has been given in the Appendix to this document. Its importance should be conveyed in a format that is attractive and interesting for the trainees such as through PPT slides +short video documentaries. Needless to say that if the training provider puts his heart and soul into these otherwise non-technical components, the image of the Pakistani workforce would undergo a positive transformation in the local as well as international job markets.

To maintain interest and motivation of the trainees throughout the course, modern techniques such as:

- Motivational Lectures
- Success Stories
- Case Studies

These techniques would be employed as an additional training tool wherever possible (these are explained in the subsequent section on Training Methodology).

Lastly, evaluation of the competencies acquired by the trainees will be done objectively at various stages of the training and a proper record of the same will be maintained. Suffice to say that for such evaluations, practical tasks would be designed by the training providers to gauge the problem-solving abilities of the trainees.

(i) **Motivational Lectures**

The proposed methodology for the training under reference employs motivation as a tool. Hence besides the purely technical content, a trainer is required to include elements of motivation in his/her lecture. To inspire the trainees to utilize the training opportunity to the full and strive towards professional excellence. Motivational lectures may also include general topics such as the importance of moral values and civic role & responsibilities as a Pakistani. A motivational lecture should be delivered with enough zeal to produce a deep impact on the trainees. It may comprise of the following:

- Clear Purpose to convey the message to trainees effectively.
- Personal Story to quote as an example to follow.
- Trainees Fit so that the situation is actionable by trainees and not represent a just idealism.

- Ending Points to persuade the trainees to change themselves. A good motivational lecture should help drive creativity, curiosity, and spark the desire needed for trainees to want to learn more.

The impact of a successful motivational strategy is amongst others commonly visible in increased class participation ratios. It increases the trainees' willingness to be engaged on the practical tasks for a longer time without boredom and loss of interest because they can see in their mind's eye where their hard work would take them in short (1-3 years); medium (3 -10 years) and long term (more than 10 years).

As this tool is expected that the training providers would plan for regular well-designed motivational lectures as part of a coordinated strategy interspersed throughout the training period as suggested in the weekly lesson plans in this document. Course-related motivational lectures online link is available in **Annexure-II**.

(ii) Success Stories

Another effective way of motivating the trainees is using Success Stories. Its inclusion in the weekly lesson plan at regular intervals has been recommended till the end of the training.

A success story may be disseminated orally, through a presentation, or using a video/documentary of someone that has risen to fortune, acclaim, or brilliant achievement. A success story shows how a person achieved his goal through hard work, dedication, and devotion. An inspiring success story contains compelling and significant facts articulated clearly and easily comprehensible words. Moreover, it is helpful if it is assumed that the reader/listener knows nothing of what is being revealed. The optimum impact is created when the story is revealed in the form of:

- Directly in person (At least 2-3 cases must be arranged by the training institute)
- Through an audio/ videotaped message (2-3 high-quality videos must be arranged by the training institute)

It is expected that the training provider would collect relevant high-quality success stories for inclusion in the training as suggested in the weekly lesson plan given in this document.

The suggestive structure and sequence of a sample success story and its various shapes can be seen in **Annexure III**.

(iii) Case Studies

Where a situation allows, case studies can also be presented to the trainees to widen their understanding of the real-life specific problem/situation and to explore the solutions.

In simple terms, the case study method of teaching uses a real-life case example/a typical case to demonstrate a phenomenon in action and explain theoretical as well as practical aspects of the knowledge related to the same. It is an effective way to help the trainees comprehend in depth both

	<p>the theoretical and practical aspects of the complex phenomenon in depth with ease. Case teaching can also stimulate the trainees to participate in discussions and thereby boost their confidence. It also makes the classroom atmosphere interesting, thus maintaining the trainee interest in training till the end of the course.</p> <p>Depending on suitability to the trade, the weekly lesson plan in this document may suggest case studies be presented to the trainees. The trainer may adopt a PowerPoint presentation or video format for such case studies whichever is deemed suitable but only those cases must be selected that are relevant and of learning value.</p> <p>The Trainees should be required and supervised to carefully analyze the cases. For this purpose, they must be encouraged to inquire and collect specific information/data, actively participate in the discussions, and intended solutions to the problem/situation.</p> <p>Case studies can be implemented in the following ways:</p> <ol style="list-style-type: none"> i. A good quality trade-specific documentary (At least 2-3 documentaries must be arranged by the training institute) ii. Health & Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training institute) iii. Field visits (At least one visit to a trade-specific major industry/ site must be arranged by the training institute)
Entry-level of trainees	Bachelor / Intermediate
Learning Outcomes of the course	<p>By the end of this course, students will be able to:</p> <ul style="list-style-type: none"> • have in-depth understanding of the DBA features of Oracle, specific Oracle concepts and knowledge required for the OCP exam, and tips and techniques for passing the Oracle OCP exam on your first attempt. • have command on all Oracle Database Administration topics including SGA instance management, file & tablespace management, user administration & security and table & index management. • gain first-hand experience on the key Oracle DBA concepts required to pass the Oracle OCP exam. In addition, this course will provide sample OCP exam questions and an opportunity to access your • overall knowledge of Oracle DBA concepts.
Course Execution Plan	<p>The total duration of the course: 3 months (12 Weeks) Class hours: 4 hours per day (06 Days/week) Theory: 20% Practical: 80% Weekly hours: 24 hours per week Total contact hours: 288 hours</p>

Companies offering jobs in the respective trade	<p>Following are the major companies offering job opportunities:</p> <ul style="list-style-type: none"> • International Companies: <ul style="list-style-type: none"> ○ Zong ○ Telenor ○ Warid ○ Google ○ Intel ○ Microsoft ○ Many more • Besides overseas employment, the following Pakistani companies/firms/Organizations are also offering jobs as well, with details as under: <ul style="list-style-type: none"> ○ Major Hospitals (Like NICVD, RMI, Aga Khan, Shaukat Khanum, etc.) ○ NADRA ○ Ufone ○ PTCL ○ NTC ○ Passport Office ○ Excise and Taxation Office
Job Opportunities	<p>The pass outs can work in the following capacities:</p> <ul style="list-style-type: none"> • Database Administrator • Systems / Data Analyst • SQL Developer • Database Architect • Data Architect • Database Manager
No of Students	<p>25</p>
Learning Place	<p>Classroom / Lab / Software Houses / Organizations</p>
Instructional Resources	<p>https://www.oracle.com/database/technologies/</p> <p>https://education.oracle.com/oracle-solaris-11-installation-and-configuration-certified-implementation-specialist/trackp_19CDGOCP</p> <p>https://www.w3schools.com/sql/sql_intro.asp</p> <p>https://www.dataquest.io/blog/sql-basics/</p> <p>https://www.simplilearn.com/tutorials/sql-tutorial/what-is-sql</p> <p>https://www.programiz.com/sql/database-introduction</p> <p>https://education.oracle.com/es/oracle-dba-overview</p>

Daily / Weekly Schedule

Schedul ed Weeks	Module Title	Days	Learning Units	Home Assignment
Week 1	Introduction & objectives of the course Writing Basic SQL Statements (Select & Create) Data types and constraints	Day 1	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Annexure-II) • Course Introduction & objectives • Course Applications • Institute/work ethics • Job Market & career opportunities 	<p>Task 1 - 5</p> <p><i><u>Details may be seen at Annexure-I</u></i></p>
		Day 2	<ul style="list-style-type: none"> • Basic Select Statements • Selecting All Columns • Selecting Specific Columns • Writing SQL Statements • Column Heading Defaults • Arithmetic Expressions • Using Arithmetic Operators • Operator Precedence • Using Parentheses • Defining a Null Value • Using Column Aliases • Using the Concatenation Operator • Duplicate Rows • Eliminating Duplicate Rows 	
		Day 3	<ul style="list-style-type: none"> • SQL and iSQL*Plus Interaction • SQL Statements versus iSQL*Plus Commands • Logging In to iSQL*Plus • The iSQL*Plus Environment • Displaying Table Structure • Interacting with Script Files • Using the WHERE Clause • Using Comparison Conditions • Using the between, IN, LIKE, NULL Conditions • Logical Conditions Using the AND, OR, NOT Operators • Rules of Precedence • ORDER BY Clause • Sorting in Descending Order • Sorting by Column Alias • Sorting by Multiple Columns 	

		Day 4	<ul style="list-style-type: none"> • Tables in the Oracle Database • Creating Tables • Adding a Column • Modifying a Column • Dropping a Column • Data Types • Creating a Table by Using a Subquery • The ALTER TABLE Statement • The SET UNUSED Option • Dropping a Table 	
		Day 5	<ul style="list-style-type: none"> • Truncating a Table • Adding Comments to a Table • What Are Constraints? • Defining Constraints • The NOT NULL, UNIQUE, PRIMARY KEY and FOREIGN KEY Constraints • The CHECK Constraint • Adding a Constraint • Dropping a Constraint • Disabling Constraints • Enabling Constraints • Cascading Constraints • Viewing Constraints • Viewing columns associated with constraints 	
Week 2	<p>Single row functions</p> <p>Displaying data from multiple tables</p>	Day 1	<ul style="list-style-type: none"> • Motivational Lecture & success story (For further detail please see Annexure-II and III.) • SQL Functions & types • Single-Row Functions • Character Functions • Using Case Manipulation Functions • Using the Character-Manipulation Functions • Number Functions 	<p>Task 6 - 8</p> <p><i><u>Details may be seen at Annexure-I</u></i></p>

		Day 2	<ul style="list-style-type: none"> • Using the ROUND, TRUNC, MOD Functions • Working with Dates • Using Arithmetic Operators with Dates • Using Date Functions • Conversion Functions • Implicit Data-Type Conversion • Explicit Data-Type Conversion • Elements of the Date Format Model 	
		Day 3	<ul style="list-style-type: none"> • Using the TO_CHAR Function with Dates • Using the TO_CHAR Function with Numbers • Using the TO_NUMBER and TO_DATE Functions • RR Date Format • Nesting Functions • General Functions • Using the NVL, NVL2 Functions • Using the NULLIF Function • Using the COALESCE Function • Conditional Expressions • Using the CASE Expression • Using the DECODE Function 	
		Day 4	<ul style="list-style-type: none"> • Obtaining Data from multiple Tables • Generating a Cartesian Product • Types of Joins • Joining Tables Using Oracle Syntax 	
		Day 5	<ul style="list-style-type: none"> • What Is an Equijoin? • Retrieving Records with Equijoins • Additional Search Conditions using AND Operator • Qualifying Ambiguous Column Names • Using Table Aliases • Joining More than Two Tables • Non equijoins • Retrieving Records with Non equijoins • Outer Joins and its Syntax • Using Outer Joins 	

			<ul style="list-style-type: none"> • Self Joins • Joining a Table to Itself • Joining Tables Using SQL: 1999 Syntax • Creating Cross Joins • Creating Natural Joins • Retrieving Records with Natural Joins • Creating Joins with the USING Clause • Retrieving Records with the USING Clause • Creating Joins with the ON Clause • Retrieving Records with the ON Clause • Creating Three-Way Joins with the ON Clause • INNER versus OUTER Joins • LEFT OUTER JOIN • RIGHT OUTER JOIN • FULL OUTER JOIN • Additional Conditions 	
Week 3	Data aggregation using Group functions Subqueries	Day 1	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Annexure-II) • What Are Group Functions? • Types of Group Functions • Group Functions Syntax • Using the AVG, SUM, MIN, MAX, COUNT Functions 	Task 9-11 <i><u>Details may be seen at Annexure-I</u></i>
		Day 2	<ul style="list-style-type: none"> • Using the DISTINCT Keyword • Using the NVL Function with Group Functions • Creating Groups of Data • Using the GROUP BY Clause 	
		Day 3	<ul style="list-style-type: none"> • Grouping by More Than One Column • Using GROUP BY Clause on Multiple Columns • Illegal Queries Using Group Functions • Excluding Group Results: The HAVING Clause • Using the HAVING Clause • Nesting Group Functions 	

		Day 4 & 5	<ul style="list-style-type: none"> Using a Subquery to Solve a Problem Guidelines for Using Subqueries Types of Subqueries Single-Row Subqueries Executing Single-Row Subqueries Using Group Functions in a Subquery The HAVING Clause with Subqueries Multiple-Row Subqueries Using the ANY Operator in Multiple-Row Subqueries Using the ALL Operator in Multiple-Row Subqueries Null Values in a Subquery Institute/Work ethics (For further detail please see Annexure-II at the end) Success story (For further detail please see Annexure-III) 	
Week 4	Producing Readable Output with iSQL*Plus Manipulating Data	Day 1	<ul style="list-style-type: none"> Using the Substitution Variable Character and Date Values with Substitution Variables Specifying Column Names, Expressions, and Text 	<p>Task 12 - 14</p> <p><i>Details may be seen at Annexure-I</i></p> <p>A visit to the software house, organization, etc.</p>
		Day 2	<ul style="list-style-type: none"> DEFINE and UNDEFINE Commands Using the DEFINE Command with & Substitution Variable Using the VERIFY Command Customizing the iSQL*Plus Environment SET Command Variables iSQL*Plus Format Commands Using the COLUMN Command COLUMN Format Models Using the BREAK Command Using the TTITLE and BTITLE Commands 	

		Day 3	<ul style="list-style-type: none"> • Data Manipulation Language (DML) • Adding a New Row to a Table • The INSERT Statement Syntax • Inserting New Rows • Inserting Rows with Null Values • Inserting Special Values • Inserting Specific Date Values • Creating a Script • Copying Rows from Another Table • Changing Data in a Table 	
		Day 4	<ul style="list-style-type: none"> • The UPDATE Statement Syntax • Updating Rows in a Table • Updating Two Columns with a Subquery • Updating Rows Based on Another Table • Updating Rows: Integrity Constraint Error • Removing a Row from a Table • The DELETE Statement • Deleting Rows from a Table • Deleting Rows Based on Another Table • Deleting Rows: Integrity Constraint Error • Using a Subquery in an INSERT Statement • Using the WITH CHECK OPTION Keyword on DML Statements 	
		Day 5	<ul style="list-style-type: none"> • Using Explicit Default Values • The MERGE Statement • Database Transactions • Advantages of COMMIT and ROLLBACK Statements • Controlling Transactions • Rolling Back Changes to a Marker • Implicit Transaction Processing • State of the Data Before and after COMMIT and ROLLBACK • Statement-Level Rollback • Read Consistency 	

			<ul style="list-style-type: none"> • Implementation of Read Consistency • Locking • Implicit Locking 	
Week 5	Database Objects Views, Sequence, Index	Day 1	<ul style="list-style-type: none"> • Database Objects • What Is a View? • Why Use Views? • Simple Views and Complex Views • Creating a View • Retrieving Data from a View • Querying a View • Modifying a View • Creating a Complex View 	Task 15 – 16 <i><u>Details may be seen at Annexure-I</u></i>
		Day 2	<ul style="list-style-type: none"> • Rules for Performing DML Operations on a View • Using the WITH CHECK OPTION • Denying DML Operations • Removing a View • Inline Views • Institute/Work ethics 	
		Day 3	<ul style="list-style-type: none"> • What Is a Sequence? • The CREATE SEQUENCE Statement • Confirming Sequences • NEXTVAL and CURRVAL Pseudo columns • Using & Modifying a Sequence • Removing a Sequence 	
		Day 4	<ul style="list-style-type: none"> • What is an Index? • How Are Indexes Created? • Creating an Index • When to Create an Index • When Not to Create an Index • Confirming Indexes 	
		Day 5	<ul style="list-style-type: none"> • Function-Based Indexes • Removing an Index • Synonyms • Creating and Removing Synonyms • Success story (For further detail please see Annexure-III) 	

Week 6	Controlling User Access Enhancements to the GROUP BY Clause Freelancing concepts	Day 1	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Annexure-II) • Understanding User Access • Privileges • System Privileges • Controlling user access • Creating Users • User System Privileges • Granting System Privileges 	Task 17-20 <i><u>Details may be -seen at Annexure-I</u></i>
		Day 2	<ul style="list-style-type: none"> • What Is a Role? • Creating and Granting Privileges to a Role • Changing Your Password • Object Privileges • Granting Object Privileges • Using the WITH GRANT OPTION and PUBLIC Keywords 	
		Day 3	<ul style="list-style-type: none"> • Confirming Privileges Granted • How to Revoke Object Privileges • Revoking Object Privileges • Database Links 	
		Day 4	<ul style="list-style-type: none"> • Review of Group Functions • Review of the GROUP BY Clause • Review of the HAVING Clause • GROUP BY with ROLLUP and CUBE 	
		Day 5	<ul style="list-style-type: none"> • Freelancing concepts (for further detail please see the Annexure-VII), how to start, step by step process from account opening to taking orders and contract signing etc. • Freelancing platforms • Tips for how to increase earning • Success story (For further detail please see Annexure-III) 	
Week 7	Overview of the previous weeks	Day 1	<ul style="list-style-type: none"> • Overview of 1 – 6 weeks, queries, and questions from participants 	Task 21-22

	Administration 1 (Introduction) Midterm Exam in last two days on the pattern of Oracle OCP examination	Day 2	<ul style="list-style-type: none"> • Install, create, and administer Oracle Database - latest version • Configuring database • Employ basic monitoring procedures • Implement a backup and recovery strategy • Move data between databases and files 	<u><i>Details may be seen at Annexure-I</i></u>
		Day 3	<ul style="list-style-type: none"> • Role of database administrator (DBA) • Plan an Oracle database installation • Optimal Flexible Architecture • Install the Oracle software Oracle Universal Installer • Create a database with the Database Configuration Assistant (DBCA) 	
		Day 4 & 5	<ul style="list-style-type: none"> • Mid Term Exam 	
Week 8	Administering User Security Managing Schema Objects Managing the Oracle Instance Managing Database Storage Structures	Day 1	<ul style="list-style-type: none"> • Motivation Lecture & Success stories (For further detail please see Annexure II and III) • Create and manage database user accounts • Authenticate users • Assign default storage areas (tablespaces) • Access dynamic performance views • Table row data storage • Purpose of tablespaces and data files • Create and manage tablespaces • Obtain tablespace information • Concepts and functionality of Automatic Storage Management (ASM) 	Task 23-24 <u><i>Details may be seen at Annexure-I</i></u>

	Employable project / assignments in addition to regular classes (from week 8 – 12)	Day 2	<ul style="list-style-type: none"> • Grant and revoke privileges • Create and manage roles • Create and manage profiles • Implement standard password security features • Control resource usage by users • Explain the use of temporary tables 	
		Day 3	<ul style="list-style-type: none"> • Use the data dictionary • Identify and administer PL/SQL objects • Describe triggers and triggering events • Monitor and resolve locking conflicts • Start and stop the Oracle database and components • Use Enterprise Manager (EM) • Access a database with SQL*Plus and iSQL*Plus • Modify database initialization parameters • Describe the stages of database startup • Describe the database shutdown options • View the alert log 	

		Day 4 & 5	<ul style="list-style-type: none"> Guidelines to the Trainees for selection of students' employable project like final year project (FYP) (please see Annexure-V) Assign Independent project to each Trainee A project based on trainee's aptitude and acquired skills and emerging trends in the local market as well as across the globe. The project idea may be based on Entrepreneur that may lead to successful employment. The duration of the project will be 4 weeks Ideas may be generated via different sites such as: https://1000projects.org/ https://nevonprojects.com/ https://www.freestudentprojects.com/ https://technofizi.net/best-computer-science-and-engineering-cse-project-topics-ideas-for-students/ Final viva/assessment will be conducted on project assignments. At the end of session, the project will be presented in skills competition to be conducted on zonal, regional and National level. The project will be presented in front of Industrialists for commercialization 	
Week 9	Managing Undo Data Implementing Oracle	Day 1	<ul style="list-style-type: none"> Project progress report & motivational talk Explain DML and undo data generation Monitor and administer undo data 	Task 25 – 26

	Database Security & Audit	Day 2	<ul style="list-style-type: none"> Describe the difference between undo data and redo data Configure undo retention Guarantee undo retention Use the Undo Advisor 	<u>Details may be seen at Annexure-I</u> <u>2nd visit to a software house or organization</u>
	Configuring the Oracle Network Environment		<ul style="list-style-type: none"> DBA responsibilities for security Apply the principle of least privilege 	
	Proactive Maintenance	Day 3	<ul style="list-style-type: none"> Enable standard database auditing Specify audit options Review audit information Maintain the audit 	
	Job searching option	Day 4	<ul style="list-style-type: none"> Use Enterprise Manager to: <ul style="list-style-type: none"> Create additional listeners Create Oracle Net Service aliases Configure connect-time failover. Control the Oracle Net Listener Use tnsping to test Oracle Net connectivity Identify when to use shared servers versus dedicated servers Use statistics Manage the Automatic Workload Repository (AWR) Use the Automatic Database Diagnostic Monitor (ADDM) 	
		Day 5	<ul style="list-style-type: none"> Describe the advisory framework Set alert thresholds Use server-generated alerts Use automated tasks Job market & job search Job related skills. Interpersonal skills Communication skills 	

Week 10	Performance management	Day 1	<ul style="list-style-type: none"> • Motivational Lecture & project progress (For further detail please see Annexure-II) • Use Enterprise Manager to monitor performance • Tune SQL by using the SQL Tuning Advisor 	Task 27-28 <i><u>Details may be seen at Annexure-I</u></i>
	Database backup concepts	Day 2	<ul style="list-style-type: none"> • Tune SQL by using the SQL Access Advisor • Use Automatic Shared Memory Management (ASSM) 	
		Day 3	<ul style="list-style-type: none"> • exporting projects into playable • Use the Memory Advisor to size memory buffers • View performance-related dynamic views • Troubleshoot invalid and unusable objects. 	
		Day 4	<ul style="list-style-type: none"> • Identify the types of failure that may occur in an Oracle database • Describe ways to tune instance recovery • Identify the importance of checkpoints, redo log files, and archive log files • Configure ARCHIVELOG mode • Create consistent database backups • Back up your database without shutting it down • Create incremental backups 	
		Day 5	<ul style="list-style-type: none"> • Automate database backups • Monitor the flash recovery area • Session on CV Building • How to make notable CV • Dos and Don'ts of CV making 	
	Job Search & entrepreneurial skills (CV creating)			
Week 11	Performing Database Recovery	Day 1	<ul style="list-style-type: none"> • Motivational Lecture & Project progress report (For further detail please see Annexure-II) • Redo log file & data file • Describe Flashback Database • Restore the table content to a specific point in the past with Flashback Table 	Task 29-30 <i><u>Details may be seen at Annexure-I</u></i>
	Performing Flashback			

	Moving Data	Day 2	<ul style="list-style-type: none"> Recover from a dropped table View the contents of the database as of any single point in time with Flashback Query See versions of a row over time with Flashback Versions Query View transaction history or a row with Flashback Transaction Query Institute/Work ethics (For further detail please see Annexure-IV at the end) 	
	Configuring Recovery manager	Day 3	<ul style="list-style-type: none"> Describe available ways for moving data Create and using directory objects Use SQL*Loader to load data from a non-Oracle database (or user files) Explain the general architecture of Data Pump Use Data Pump Export and Import to move data between Oracle databases Use external tables to move data via platform-independent files 	
	Job Search & Entrepreneurial Skills (self business)	Day 4	<ul style="list-style-type: none"> Describe the RMAN repository and recovery catalog Describe the Media Management Library interface Configure database parameters that affects RMAN operations Connect to the three different types of databases by using RMAN Configure two types of retention policies Change RMAN default settings with CONFIGURE 	
		Day 5	<ul style="list-style-type: none"> Session on Self-Employment How to start a Business Requirements (Capital, Physical and Human requirements etc.) Benefits/Advantages of self-employment 	

Week 12	Memory Management	Day 1	<ul style="list-style-type: none"> Describe the memory components in the SGA Implement Automatic Shared Memory Management Diagnose database performance issues Configure the Automatic Workload Repository Use the SQL Access Advisor to improve database performance Use asynchronous COMMIT effectively 	OCP Examination (Details may be seen at Annexure-V) Final Assessment
	Overseas Employment (General Employment)	Day 2	<ul style="list-style-type: none"> Estimating the size of new tables Analyzing growth trends Managing optimizer statistics Reorganizing schema objects online Reclaim wasted space from tables and indexes Configure the Database Resource Manager Access and create resource plans Create consumer groups Monitor the Resource Manager 	
	Preparation for Oracle OCP Examination	Day 3	<ul style="list-style-type: none"> Session on General Overseas Employment opportunities. Job search Avenues. Visa Processes and other necessary requirements. Immigration Information (Legal age requirements, Health Certificate, Police clearance & Travel Insurance) 	
	Final Assessment	Day 4	<ul style="list-style-type: none"> Preparation of trainees for Oracle OCP Examination Registration of Trainees for Oracle OCP Examination. (for further detail, please see the Annexure-VI).free Mock exercises for Oracle OCP Examination. 	
		Day 5	<ul style="list-style-type: none"> Final Project Demonstration / Examination Final Assessment 	

Tasks For Oracle Certified Professional (OCP) Database Administrator (DBA)

Track

Note: The following tasks are required to be performed multiple times by each trainee/group until sufficient proficiency level is acquired. The trainer is required to determine the number of times the task needs to be repeated by a trainee as per his/her low/medium/high level of skill and proficiency during any stage of the course.

Task No.	Task	Description	Week No
1	Installation / Uninstallation	Install and uninstall Oracle 21c	Week-1
2	Use of Select command	Select all data from the table. Display the last name concatenated with the job ID, separated by a comma and space. Name this column Employee and Title.	
3	Use of Select command with parameters	Show the structure of the EMPLOYEES table. Create a query to display the last name, job code, hire date, and employee number for each employee, with employee number appearing first. Save your SQL statement to a file named lab1_7.sql.	
4	Use of Select & Unique commands together	Create a query to display unique job codes from the EMPLOYEES table.	
5	Use of Select & greater than commands together	Create a query to display the last name and salary of employees earning more than \$12,000. Place your SQL statement in a text file named lab2_1.sql. Run your query.	
6	Automatically calculate increase in salary by 15% and display new salary	For each employee, display the employee ID number, last-name, salary, and salary increased by 15% and expressed as a whole number. Label the column New Salary. Place your SQL statement in a text file named lab32.sql.	Week-2
7	Display the name of only those employees whose names start with J, A, or M with first letter capitalized. Also calculate the length of their names	Write a query that displays the employee's last names with the first letter capitalized and all other letters lowercase and the length of the names, for all employees whose name starts with J, A, or M. Give each column an appropriate label. Sort the results by the employees' last names.	
8	Calculate the total months of employment	For each employee, display the employee's last name, and calculate the number of months between today and the date the employee was hired. Label the column MONTHS_WORKED. Order your results by the number of	

		months employed. Round the number of months up to the closest whole number.	
9	Display the highest, lowest, sum, and average salary of all employees	Display the highest, lowest, sum, and average salary of all employees. Label the columns Maximum, Minimum, Sum, and Average, respectively. Round your results to the nearest whole number. Place your SQL statement in a text file named lab5_6.sql.	Week-3
10	Display the minimum, maximum, sum, and average salary for each job type	Modify the query in lab5_4.sql to display the minimum, maximum, sum, and average salary for each job type. Resave lab5_4.sql to lab5_5.sql. Run the statement in lab5_5.sql.	
11	Display the record of employees who earn more than the average salary	Create a query to display the employee numbers and last names of all employees who earn more than the average salary. Sort the results in ascending order of salary.	
12	Adding data in the first and second row of table	Add the first row of data to the MY_EMPLOYEE table from the following sample data. Do not list the columns in the INSERT clause. Populate the MY_EMPLOYEE table with the second row of sample data from the preceding list. This time, list the columns explicitly in the INSERT clause.	Week-4
13	Use of Insert Command	Populate the table with the next two rows of sample data by running the INSERT statement in the script that you created	
14	Delete all records from a table	Empty the entire table. Confirm that the table is empty.	
15	Create a View	Create a view called EMPLOYEES_VU based on the employee numbers, employee names, and department numbers from the EMPLOYEES table. Change the heading for the employee's name to EMPLOYEE	Week-5
16	Use of sequence and primary key constraint	Create a sequence to be used with the primary key column of the DEPT table. The sequence should start at 200 and have a maximum value of 1000. Have your sequence increment by ten numbers. Name the sequence DEPT_ID_SEQ	
17	Define privileges	You are the DBA. You are creating many users who require the same system privileges. What should you use to make your job easier?	Week-6
18	Grant access to another user	Grant another user access to your DEPARTMENTS table. Have the user grant you query access to his or her DEPARTMENTS table.	
19	Use of Non-Unique index	Create a nonunique index on the foreign key column (DEPT_ID) in the EMP table.	

20	Restricting query results using the HAVING clause	Run a query to know employees who have been employed after 2020.	
21	Topping & Starting Database instances	Viewing and modifying initialization parameters. Stopping and starting the database instance Viewing log files	Week-7
22	Obtain Tablespaces information	Describe the storage of table row data in blocks. Create and manage tablespaces. Obtain tablespace information	
23	Create a Profile to limit resources	Creating a profile to limit resource consumption Creating two roles: HRCLERK HRMANAGER Creating four new users: One manager and two clerks One schema user for the next practice session	Week-8
24	Manage and Shrink Space	Using threshold alerts to proactively manage	
25	Calculating and Modifying an undo tablespace to support a 48-hour retention interval	Viewing system activity. Calculating undo tablespace sizing to support a 48- hour retention interval. Modifying an undo tablespace to support a 48-hour retention interval.	Week-9
26	Configuring Listener	Configure new listener and Oracle Services	
27	Tips to improve Performance	What are some tips to improve the performance of SQL queries bottlenecks that affect the performance of a Database	Week-10
28	Archive Log of Database	Configure database into Archive Log. Perform an Online backup.	
29	Configure RMAN	Configure RMAN, Perform complete database backup using RMAN. Perform Incremental backup using RMAN	Week-11
30	Detect corruption in RMAN	Detect corruption of the block in the RMAN database, What are the steps to fix this?	

Motivational Lectures

What is freelancing and how you can make money online - BBCURDU

<https://www.youtube.com/watch?v=9jCJN3Ff0kA>

What Is the Role of Good Manners in the Workplace? By Qasim Ali Shah | In Urdu

<https://www.youtube.com/watch?v=Qi6Xn7yKIIQ>

Hisham Sarwar Motivational Story | Pakistani Freelancer

https://www.youtube.com/watch?v=CHm_BH7xAXk

21 Yr Old Pakistani Fiverr Millionaire | 25-35 Lakhs a Month Income | Interview

<https://www.youtube.com/watch?v=9WrmYYhr7S0>

Success Story of a 23 Year - Old SEO Expert | How This Business Works | Urdu Hindi Punjabi

<https://www.youtube.com/watch?v=tIQ0CWgszI0>

Failure to Millionaire - How to Make Money Online | Fiverr Superhero Aaliyaan Success Story

<https://www.youtube.com/watch?v=d1hocXWSpus>

SUGGESTIVE FORMAT AND SEQUENCE ORDER OF MOTIVATIONAL LECTURE.

Session- 1 (Communication):

Please find below an overview of the activities taking place Session plan that will support your delivery and an overview of this session's activity.

Session- 1 OVERVIEW
Aims and Objectives:
<ul style="list-style-type: none"> • To introduce the communication skills and how it will work • Get to know mentor and team - build rapport and develop a strong sense of a team • Provide an introduction to communication skills • Team to collaborate on an activity sheet developing their communication, teamwork, and problem-solving. • Gain an understanding of participants' own communication skills rating at the start of the program

Activity:	Participant Time	Teacher Time	Mentor Time
Intro Attend and contribute to the scheduled.			
Understand good communication skills and how it works.			
Understand what good communication skills mean			
Understand what skills are important for good communication skills			
Key learning outcomes:	Resources:		Enterprise skills developed:
<ul style="list-style-type: none"> • Understand communication skills and how it works. • Understand what communication skills mean • Understand what skills are important for communication skills 	<ul style="list-style-type: none"> • Podium • Projector • Computer • Flip Chart • Marker 		<ul style="list-style-type: none"> • Communication • Self Confidence • Teamwork

Schedule	Mentor Should do
Welcome: 5 min	Short welcome and ask the Mentor to introduce him/herself. Provide a brief welcome to the qualification for the class. Note for Instructor: Throughout this session, please monitor the session to ensure nothing inappropriate is being happened.
Icebreaker: 10 min	Start your session by delivering an icebreaker, this will enable you and your team to start to build rapport and create a team presentation for the tasks ahead. The icebreaker below should work well at introductions and encouraging communication, but feel free to use others if you think they are more appropriate. It is important to encourage young people to get to know each other and build strong team links during the first hour; this will help to increase their motivation and communication throughout the sessions.
Introduction & Onboarding: 20 mins	Provide a brief introduction of the qualification to the class and play the “Onboarding Video or Presentation”. In your introduction cover the following: <ol style="list-style-type: none"> 1. Explanation of the program and structure. (Kamyab jawan Program) 2. How you will use your communication skills in your professional life. 3. Key contacts and key information – e.g. role of teacher, mentor, and SEED. Policies and procedures (user agreements and “contact us” section). Everyone to go to the Group Rules tab at the top of their screen, read out the rules, and ask everyone to verbally agree. Ensure that the consequences are clear for using the platform outside of hours. (9am-8pm) 4. What is up next for the next 2 weeks ahead so young people know what to expect (see pages 5-7 for an overview of the challenge). Allow young people to ask any questions about the session topic.
Team Activity Planning: 30 minutes	<p>MENTOR: Explain to the whole team that you will now be planning how to collaborate for the first and second collaborative Team Activities that will take place outside of the session. There will not be another session until the next session so this step is required because communicating and making decisions outside of a session requires a different strategy that must be agreed upon so that everyone knows what they are doing for this activity and how.</p> <ul style="list-style-type: none"> • “IDENTIFY ENTREPRENEURS” TEAM ACTIVITY • “BRAINSTORMING SOCIAL PROBLEMS” TEAM ACTIVITY” <p><i>As a team, collaborate on a creative brainstorm on social problems in your community. Vote on the areas you feel most passionate about as a team, then write down what change you would like to see happen.</i></p> <p>Make sure the teams have the opportunity to talk about how they want to work as a team through the activities e.g. when</p>

	they want to complete the activities, how to communicate, the role of the project manager, etc. Make sure you allocate each young person a specific week that they are the project manager for the weekly activities and make a note of this. Type up notes for their strategy if this is helpful - it can be included underneath the Team Contract.
Session Close: 5 minutes	MENTOR: Close the session with the opportunity for anyone to ask any remaining questions. Instructor: Facilitate the wrap-up of the session. A quick reminder of what is coming up next and when the next session will be.

MOTIVATIONAL LECTURES LINKS

TOPIC	SPEAKER	LINK
How to Face Problems In Life	Qasim Ali Shah	https://www.youtube.com/watch?v=OrQte08MI90
Just Control Your Emotions	Qasim Ali Shah	https://www.youtube.com/watch?v=JzFs_yJt-w
How to Communicate Effectively	Qasim Ali Shah	https://www.youtube.com/watch?v=PhHAQEGehKc
Your ATTITUDE is Everything	Tony Robbins Les Brown David Goggins Jocko Willink Wayne Dyer Eckart Tolle	https://www.youtube.com/watch?v=5fS3rj6elFg
Control Your EMOTIONS	Jim Rohn Les Brown TD Jakes Tony Robbins	https://www.youtube.com/watch?v=chn86sH005U
Defeat Fear, Build Confidence	Shaykh Atif Ahmed	https://www.youtube.com/watch?v=s10dzfbozd4
Wisdom of the Eagle	Learn Kurooji	https://www.youtube.com/watch?v=bEU7V5rJTtw
The Power of ATTITUDE	Titan Man	https://www.youtube.com/watch?v=r8LJ5X2ejqU
STOP WASTING TIME	Arnold Schwarzenegger	https://www.youtube.com/watch?v=kzSBrJmXqdg
Risk of Success	Denzel Washington	https://www.youtube.com/watch?v=tbnzAVRZ9Xc

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	Self & Family background	<p>Danyal Saleem, who lives in Mirpur (AJK), is an example of how hard work and perseverance can reap rich rewards when bidding for projects online. The graphic designer works exclusively on an online freelancing platform and has earned, on average, US\$20,000 per month for the past several months. But this isn't a story of overnight success – Danyal has had to work hard to differentiate himself and stay true to his goal.</p> <p>It was a full year later, in May 2017, when Danyal finally decided to jump in. He signed up for one of the numerous sites that connect designers or coders with people or companies that have small projects, like designing a logo or building a website. He had already started a small business to help pay for his college education, so he was nervous and apprehensive about the decision. “I gave myself two or three months at most. If I didn't succeed, then I would go back to running the business as it was showing potential,” he says.</p> <p>If at first, you don't succeed, try try again</p>
2.	How he came on board NAVTTC Training/or got trained through any other source	Certification in graphic designing from STEPS (NAVTTC partner institute)
3.	Post-training activities	<p>Danyal's area of expertise is in graphic design. In his first month using Fiverr, he pitched mostly for projects centered around logo designing. But it wasn't so simple. In the first few weeks, he didn't hear back from even a single client, despite pitching for dozens of projects.</p> <p>“I needed to understand what worked, so I read blogs, participated in forums, and analyzed profiles of successful freelancers. It was an uphill struggle, but I didn't want to give up,” he explains.</p> <p>Danyal says he understands why clients would be apprehensive giving projects to untested freelancers.</p>

		<p>They have hundreds of options to choose from, he explains, and to give a project to someone with no experience requires a strong leap of faith.</p> <p>A slow stream of projects started to come Danyal's way. Within a few months, he was landing an average of a hundred projects every month, with a large number of repeat clients. He also expanded the range of his professional services, branching out from logo design to business cards, banners, Facebook cover pages, letterheads, and stationery.</p> <p>But he's had to face his fair share of challenges too. The shoddy state of internet infrastructure in his city, Mirpur, threatened to derail his freelancing career. "Sometimes I haven't had connectivity for two days straight," he explains. "That's unthinkable for someone who makes his livelihood on the internet."</p>
4.	Message to others (under training)	<p>Take the training opportunity seriously Impose self-discipline and ensure regularity Make Hard work pays in the end so be always ready for the same.</p>

Note: Success story is a source of motivation for the trainees and can be presented in several ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful trainee of the institute. He will narrate his success story to the trainees in his own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful trainee Audio-video recording that has to cover the above-mentioned points.*
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning, etc) and narrates his/her story in the teacher's own motivational words.

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. Attendance:

Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. Character:

Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. Team Work:

The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. Appearance:

Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. Attitude:

Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. Productivity:

Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. Organizational Skills:

Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. Communication:

Written communication, being able to correctly write reports and memos.
Verbal communications, being able to communicate one on one or to a group.

9. Cooperation:

Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. Respect:

Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.

Real-World Projects/Use-Cases for Trainees

Each trainees/group of trainees will be assigned real-world use-cases as oracle database project to implement and get hands-on experience (Trainer can assign any 5 out of given sample projects to the group. The trainer can also assign other projects as well)

INVENTORY CONTROL MANAGEMENT DATABASE PROJECT

Design goals: maintain a proper variety of required items, increase inventory turnover, reduce and maintain optimize inventory and safety stock levels, obtain low raw material prices, reduce storage cost, reduce insurance cost, reduce taxes

STUDENT RECORD KEEPING SYSTEM DATABASE PROJECT

Design goals: a student file that contains the information about student, a stream file, a marks file, a fee file, concession/scholarship etc.

ONLINE RETAIL APPLICATION DATABASE PROJECT

A customer can register to purchase an item. The customer will provide bank account number and bank name (can have multiple account number). After registration, each customer will have a unique customer-id, user-id and password. A customer can purchase one or more item in different quantities. The items can of different classes based on their prices. Based on the quantity, the price of the item and discount (if any) on the purchased items, the bill will be generated. A bank account is required to settle the bill. The items can be ordered to one or more suppliers

COLLEGE DATABASE PROJECT

A college contains many departments. Each department can offer any number of courses. Many instructors can work in a department, but an instructor can work only in one department. For each department, there is a head, and an instructor can be head of only one department. Each instructor can take any number of courses, and a course can be taken by only one instructor. A student can enroll for any number of courses and each course can have any number of students.

RAILWAY SYSTEM DATABASE PROJECT

A railway system, which needs to model the following:

- Stations
- Tracks, connecting stations. You can assume for simplicity that only one track exists between any two stations. All the tracks put together to form a graph.
- Trains, with an ID and a name
- Train schedules recording what time a train passes through each station on its route.
- You can assume for simplicity that each train reaches its destination on the same day and that every train runs every day. Also for simplicity, assume that for each train, for each station on its route, you store
- Time in,

- Timeout (same as time in if it does not stop)
- A sequence number so the stations in the route of a train can be ordered by sequence number.
- Passengers booking consisting of train, date, from-station, to station, coach, seat and passenger name.

HOSPITAL MANAGEMENT SYSTEM DATABASE PROJECT

A patient will have unique Patient ID. Full description about the patient about personal detail and phone number, and then Disease and what treatment is going on. The doctor will handle patients, One doctor can Treat more than 1 patient. Also, each doctor will have unique ID. Doctor and Patients will be related. Patients can be admitted to hospital. So different room numbers will be there, also rooms for Operation Theaters and ICU. There are some nurses, and ward boys for the maintenance of hospital and for patient take care. Based upon the number of days and treatment bill will be generated.

LIBRARY MANAGEMENT SYSTEM DATABASE PROJECT

A student and faculty can issue books. Different limits for the number of books a student and teacher can issue. Also, the number of days will be distinct in the case of students and teachers for issue any book. Each book will have different ID. Also, each book of the same name and same author (but the number of copies) will have different ID. Entry of all the book will be done, who issue that book and when and also duration. Detail of Fine (when the book is not returned at a time) is also stored.

PAYROLL MANAGEMENT SYSTEM DATABASE PROJECT

There will entry (Unique ID) of all the employee of any Organization. According to the date of joining and date up to which salary is created, Number of days will be entered. Basic pay will be defined according to the post of employee and department. Then component like DA, HRA, medical allowance, Arrears will be added, and Charges of Hostel/ Bus, Security, welfare fund and other will be deducted. The number of leaves taken by the employee.

HEALTHCARE ORGANIZATION DATABASE PROJECT

The organization provides the following functionalities:

- Emergency Care 24x7
- Support Groups
- Support and Help Through calls

Any new Patient is first registered in their database before meeting the doctor. The Doctor can update the data related to the patient upon diagnosis (Including the disease diagnosed and prescription). This organization also provides rooms facility for admitting the patient who is critical. Apart from doctors, this organization has nurses and ward boy. Each nurse and ward boy is assigned to a doctor. Also, they can be assigned to patients (to take care of them). The bill is paid by the patient with cash and E-banking. Record of each payment made is also maintained by the organization. The record of each call received to provide help and support to its existing person is also maintained.

RESTAURANT MANAGEMENT DATABASE PROJECT

The restaurant maintains the catalog for the list of food and beverage items that it provides. Apart from providing food facility at their own premises, the restaurant takes orders online through their site. Orders on the phone are also entertained.

To deliver the orders, we have delivery boys. Each delivery boy is assigned to the specific area code. The delivery boy cannot deliver outside the area which is not assigned to the delivery boy (for every delivery boy there can be a single area assigned to that delivery boy). The customer record is maintained so that premium customer can be awarded discounts.

DESIGN A SCENARIO AND AN ER DIAGRAM FOR AN IT TRAINING GROUP DATABASE PROJECT

It will meet the information needs of its training program. Clearly indicate the entities, relationships and the key constraints. The description of the environment is as follows:

The company has 10 instructors and can handle up to 100 trainees for each training session. The company offers 4 Advanced technology courses, each of which is taught by a team of 4 or more instructors. Each instructor is assigned to a maximum of two teaching teams or may be assigned to do research. Each trainee undertakes one Advanced technology course per training session.

BLOOD DONATION SYSTEM DATABASE PROJECT

A system in which data of Patient, data of donor, data of blood bank would be saved and will be interrelation with each other

Data of Patient– Patient Name, Patient Id, Patient Blood Group, Patient Disease

Data of Donor– Donor Name, Donor Id, Donor Blood Group, Donor Medical report, Donor Address, Donor Contact number

Data of Blood Bank– Blood Bank Name, Blood Bank Address, Blood bank Donors name, Blood Bank Contact Number, Blood Bank Address

Try to implement such scenario in a database, create a schema for it, an ER diagram for it and try to normalize it.

ART GALLERY MANAGEMENT DATABASE PROJECT

Design an E-R Diagram for an Art Gallery. Gallery keeps information about "Artist" their Name, Birthplace, Age & Style of Art about "Art Work," Artist, the year it was made, unique title, Type of art & Prices must be stored. The piece of artwork is classified into various kind like Poetess, Work of the 19th century still life, etc. Gallery keeps information about Customers as their Unique name, Address, Total amount of Dollar, they spent on Gallery and liking of Customers.

HOTEL MANAGEMENT SYSTEM DATABASE PROJECT

Database Administration (ORACLE DBA Track)

A hotel is a hive of numerous operations such as front office, booking, and reservation, banquet, finance, HR, inventory, material management, quality management, security, energy management, housekeeping, CRM and more. The hotel has some rooms, and these rooms are of different categories. By room category, each room has the different price. A hotel has some employees to manage the services provided to customers. The customer can book the room either online or by cash payment at the hotel. The customer record is stored in hotel database which contains customer identity, his address, check in time, check out time, etc. hotel provides food and beverages to their customers and generates the bill for this at the time of their check out.

SCHOOL MANAGEMENT SYSTEM DATABASE PROJECT

Design a database to maintain information about school staff (staff management system) and students satisfying the following properties:

Staff will have their id, name, and classes they are teaching

The student will be having the name, roll no, section, class

Another table containing the section, subject and teacher information

Next will contain fee information for students

One contains salary information for teachers

Rooms are assigned to classes keeping in mind that there is no time clash of same room or lab, students cannot be entered in more than one section, no student should be there who have not paid fees up to a particular date.

WHOLESALE MANAGEMENT SYSTEM DATABASE PROJECT

- Maintain the details of stock like their id, name, quantity
- Maintain the details of buyers from which manager has to buy the stock like buyer id, name, address, stock id to be bought
- Details of customers i.e. name, address, id
- Defaulters list of customers who have not paid their pending amount
- List of payment paid or pending
- The stock that is to buy if quantity goes less than a particular amount.
- Profit calculation for a month.
- Quantity cannot be sold to a customer if the required amount is not present in stock and date of delivery should be maintained up to which stock can be provided.

SALARY MANAGEMENT SYSTEM DATABASE PROJECT

- Employee list to be maintained having id, name, designation, experience
- Salary details having employee id, current salary
- Salary in hand details having employee id, salary, deduction or any other deduction and net salary to be given and also maintain details of total savings of employee
- Salary increment to be given by next year if any depending upon constraints

- Deduction in monthly salary if any depending upon any discrepancy in work and amount to be deducted.

ATM MANAGEMENT SYSTEM DATABASE PROJECT

- How to maintain user accounts
- How to manage a credit transaction
- How to manage a debit/withdrawal/ transaction
- How to manage a transfer transaction

Sample-Project-1: Oracle Database Design for Online Job Portal having the objectives as:

- Registration
- Login
- Authenticating
- Updating Profile
- Posting a job and removing or modifying job
- Searching for a job
- Taking online exam
- Feedback

Preparation for Oracle OCP Examination

The current training is designed in such a way that it prepares the trainees for appearing in Oracle OCP examination.

Guidance may be provided to the students during the training session on how to prepare yourself for the examination.

Sample exams questions are provided them to attempt. Mocks are given for preparation of the exams.

University of Peshawar has an agreement with Oracle to establish an Oracle Academy at the University of Peshawar and will provide discounted vouchers for the students of the University.

Oracle Database certifications are offered at various certification levels. The main categories are:

Oracle Certified Associate (OCA) – Oracle Database 12c Administrator

With this certification, an individual can be part of a database management team as a member or an application developer. This level requires the individual to pass one of these SQL exams:

- Oracle Database 12c SQL fundamentals (1Z0-061)
- Oracle Database 12c SQL fundamentals (1Z0-051)
- Oracle Database SQL expert 1Z0-071.

Besides, candidates must pass the oracle Database 12c: Installation and Administration (1Z0-062) exam in order to be considered for this Oracle credential <https://www.passitdump.com>

The associate certification validates the skills and the ability to creating, retrieving, maintaining and editing data in a database. Primarily, it shows competency in the day-to-day operational management database skills of the associates.

Oracle Certified Professional (OCP) – Oracle Database 12c Administrator

Oracle Professional Certification demonstrates skills in large Database Management as well as the application of large-scale database. The ideal candidates for this certification level must possess OCA certification. Additionally, they are required to pass Oracle Database 12c:

- Advanced Administration (1Z-063) exam. After successfully passing the exam, the individual needs to submit a course completion form in order to be an Oracle Certified Professional (OCP).
- This certification level validates the skills in installation, maintenance, fine-tuning, and troubleshooting of Oracle databases.

Freelancing Opportunity

During the training, the students will be given hands-on experience on how to start freelancing of the technologies and expertise they obtained.

As a freelance Oracle database administrator (Oracle DBA), duties focus on maintaining, improving, or securing a database on a temporary, contract basis.

DBA responsibilities in this career depend on the needs of each client with whom to work. DBA helps in building and maintaining a database based on the client's security and capacity needs and network capabilities. This job includes tasks such as configuring software, updating security systems, and ensuring that data backup systems are operational. DBA duties may also consist of scripting custom applications and troubleshooting for client when database issues arise.

The qualifications needed to start working as a freelance database Oracle administration include computer skills, a relevant degree or equivalent experience, and professional certification from Oracle. DBA can develop his/her skills by pursuing a degree in computer science, programming, information systems, or information technology. Oracle offers professional certification options, including an Oracle Database Administration Associate, Database Administration Professional, and Database Administrator Master. Freelancers additionally need business skills to attract new clients and negotiate contracts for their services.

References

A Union of Professionals, Classroom Tips, Assigning Effective Homework

<https://files.eric.ed.gov/fulltext/ED516934.pdf>

Top 18 Database Projects Ideas for Students,

<https://www.lovelycoding.org/2013/11/top-18-database-projects-ideas-for-engineering-bca-mca-btech-bsc.html> visited on 13th July, 2020