MySQL Developer Training

CHAPTER 1: INTRODUCTION TO DBMS
What is Database?; Purpose of Database & Management; Advantages of Database for Data Storage; Introduction to DBMS; Database Design; Most Popular RDBMS Products; History, Real-time Database Examples (LIVE); Microsoft SQL, Oracle & MySQL Differences; When to use which?

CHAPTER 2: MYSQL INSTALLATION
MySQL Installation Process (step by step); Common Installation Errors & Solutions; MySQL Workbench Installation Concepts & MySQL Command prompt; MySQL Versions and Editions Comparisons; Connect Workbench Developer Tool; Creating a new User; Grant permission; Lock and Unlock User Account;

CHAPTER 3: SQL LANGUAGE COMMANDS - 1
Structured Query Language (SQL); Data Definition Language (DDL); Data Retrieval Language (DRL); Data Manipulation Language (DML); Transaction Control Language (TCL); Database Security (DCL); Rules of SQL Queries and Statements; Real-world applicative uses of SQL; Creating Users and Tables;

CHAPTER 4: SQL LANGUAGE COMMANDS – 2
Table Data Inserts; MySQL Data Types; DDL Commands with Examples; CREATE, ALTER, TRUNCATE, DROP, RENAME; DESCRIBE command; DML, DRL Commands Operators; INSERT, UPDATE, DELETE Statements; Truncate & Delete commands; SELECT; SQL Comments; Single Line & Multi Line Comments;

CHAPTER 5: SQL OPERATORS

SET, AND, OR, NOT, IN; BETWEEN (NOT BETWEEN); Arithmetic, Logical Operators; Operator Precedence; UNION, UNION ALL, INTERSECT, MINUS; LIKE (NOT LIKE), IS NULL (IS NOT NULL); DCL and TCL;

CHAPTER 6: GROUPING QUERY RESULTS

Identify Distinct Values in Tables; Group & Aggregate function; Group By Operations in Queries; Having Clause; Aggregate Functions with Group By; Order By; Query Execution Order with Group By; Arithmetic Functions, Character Function; Date & Time Functions, String Function; Conversion Functions;

CHAPTER 7: CONSTRAINTS & KEYS - 1

Data Integrity constraints; Domain Integrity Constraints; Entity Integrity Constraints; Referential Integrity Constraints; Check Constraints; NOT NULL, UNIQUE Constraint; PRIMARY KEY and Usage;

CHAPTER 8: CONSTRAINTS & KEYS - 2

FOREIGN KEY Constraints & Relations; Column & Table Constraints; Adding Constraints to Tables, User Constraints ; Enabling - Dropping Constraints, Self Referential Integrity; Disabling Constraints on Tables;

CHAPTER 9: QUERIES & JOINS

Need for Joins & Table Comparisons; SET Operations; Join Types : Equi Join, Simple Join; Inner Join and Query Conditions; Cross Join (Cartesian Join); Non-Equi Join & Self Join; Outer Joins – Types, Advantages; Cross Joins – Advantages * Limitations; Self Joins, Merge Joins, Sub Queries; Inner Self Joins & HAVING;

CHAPTER 10: VIEWS, SYNONYMS, SEQUENCES

VIEWS IN MYSQL, Understanding Views & Use; Relational Views and Standard Views; SIMPLE VIEWS and COMPLEX VIEWS in MYSQL; Column Definitions in VIEWS; Using VIEWS for DML Operations; Forced Views, CHECK Constraints in Views;

CHAPTER 11: SUB QUERIES, NESTED QUERIES - 1

Sub Queries in Real-world; Dynamic Conditions with Sub Queries; Sub Queries and Nested Sub Queries; How does oracle Execute Nested Sub Queries?; Inner Select and Outer Select Queries; Usage of Sub Queries with WERE, HAVING; Impact of Having Clause in Sub Queries; Select Nth Highest salary; Select Duplicate Records; Delete Duplicate Records; Advantages of MySQL Sub Query;

CHAPTER 12: SUB QUERIES, NESTED QUERIES - 2

Subquery in the Select Clause; Subquery in the From Clause; Execution of Correlated Sub Queries in SQL; IN, ANY SOME, ALL Operators in Sub Queries; PAIR WISE and NON PAIR WISE in Sub Queries; Single Row Subquery & Multiple Row Subquery; Multiple Column Subquery; Uncorrelated Subquery;

CHAPTER 13: PERFORMANCE (QUERY) TUNING

Indexes - Definition & Architecture; B Tree Concept; Clustered and Non clustered Indexes; Primary Key and Clustered Index; Unique Key and Non-Clustered Indexes; Simple Index, Rebuild Index; Materialized Views - Indexed Views; Composite Index, Function Based Index; Range and Hash Partition; List Partition and Composite Partition; Parallel Query Process; Performance Tuning Advantages?;

CHAPTER 14: MYSQL – (CONTROL STRUCTURE) - Level I

Simple If, If. Else. Nested If. Else Statements; Ladder, Selection, Simple Case Statements; GOTO Label and EXIT Statements; Iterations, Simple LOOP, WHILE; FOR LOOP and NESTED LOOPS in MYSQL; MYSQL Select statements; Composite Data Types;

CHAPTER 15: MYSQL – (CONTROL STRUCTURE) - Level 2

Cursor Variables and Management in MYSQL; Implicit & Explicit Cursors and Attributes; Cursor with Parameters and Nested LOOPs; Cursors with Sub Queries, Reference Cursors; Implicit Cursors, Explicit Cursor; Parameterized Cursors, Ref Cursors; MySQL Cursors Usage;

CHAPTER 16: MYSQL – (CONTROL STRUCTURE) - Level 2

Transaction Concepts in Databases with SQL; Transaction Types and Uses; Commit and Rollback Operations; Nested Transactions with Save points; Database Read Consistency with SQL; Creation of READ ONLY VIEWS - Realtime Use; Sequences, with Synonyms; View Vs Synonym in MySQL;

CHAPTER 17: ADVANCED MYSQL - 1

Procedures in MYSQL: STORED PROCEDURE; Parameters (IN, OUT, IN OUT); POSITIONAL and NAMED Notation; Procedure with Cursors and Sub Queries; ALTER and DROP of Stored Procedures; Using SPs for Dynamic SQL Statements; Loops and Table Variables in SQL Programs;

CHAPTER 18: ADVANCED MYSQL - 2

Functions in MYSQL: Real-time Usage; User Defined Functions, Nested Functions; Using Functions in SQL Statements; Comparing Stored Procedures and Functions; Using SPs with Table Value Functions; Analytical Function; Rank(), Dense_Rank(),Row_Number(); IFNULL() FUNCTION;

CHAPTER 19: ADVANCED MYSQL - 3

Pragma_Autonomous_Transaction() with SPs; Returning into clause, Bulk Collect; For All, Definer/Invoker Rights & Usage; About Flash Back Queries, Dynamic SQL; Flash Back Command, Purge Command; Regular Expressions; Recycle Bin; Delete Recycle Bin Table;

CHAPTER 20: ADVANCED MYSQL - 4

MySQL Triggers: Row Level & Statement Level Triggers; DML Triggers; DDL Triggers and Schema Level Triggers; OLD & NEW References, Trigger Auditing; Enabling / Disabling Triggers, Dropping Triggers; Triggers and Data Manipulations; Memory Tables in Triggers; DML & DDL Events with Triggers; Compound Triggers; Working with LARGE Tables;

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