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Course Name	**: PRACTICAL MYSQL: QUERY MASTERY**
Duration	**: 3 Days (Physical Classroom / Virtual Live Instructor)**
Skill Level	**: Beginner**

COURSE DESCRIPTION:
Unlock the power of relational databases with our comprehensive MySQL course designed for beginners. Whether you're a budding developer, data analyst, or IT professional, this course will guide you through the essential concepts of MySQL, the world's most popular open-source database. From crafting basic queries and mastering WHERE clauses to exploring advanced topics like indexes, joins, and subqueries, this hands-on course provides a solid foundation in database management. Dive into the intricacies of MySQL functions, date manipulations, and constraint implementations, and discover how to optimize database performance through indexing. With practical exercises, real-world examples, and a focus on problem-solving, this course equips you not only with theoretical knowledge but also the practical skills to navigate the database landscape confidently.

As a bonus, we delve into the world of LeetCode, applying SQL concepts to tackle coding challenges and enhance your problem-solving abilities. By the end of this course, you'll be adept at designing and querying databases, understanding foreign keys and constraints, and confidently handling real-world scenarios. Join us on this learning journey and unlock the potential of MySQL, propelling your skills in data management and SQL proficiency. Enroll now and embark on a transformative learning experience that opens doors to a multitude of opportunities in the vast realm of databases and data-driven applications.

WHAT WILL YOU LEARN?
This MySQL course empowers you to master SQL queries, delve into advanced topics such as joins and subqueries, and optimize database performance using indexes. Explore functions for effective data manipulation, understand constraints and foreign keys, and apply your skills to real-world problem-solving on platforms like LeetCode. By the end, you'll confidently design and manage databases, setting the stage for success in database administration and development.

PREREQUISITE:
Beginners. No programming/database experience is required.

METHODOLOGY:
This program will be conducted with interactive lectures, PowerPoint presentations, discussions, and practical exercises. This course can be conducted as instructor-led (ILT) or virtual instructor-led training (VILT).

JOB SCOPE:
Upon completion of this course, candidates may pursue the following career paths:

- Database Administrator (DBA)
- SQL Developer
- Data Analyst
- Data Engineer
- Database Tester

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MODULE 1: WELCOME
- Welcome
- Introduction to the Course
- Importance of MySQL in Database Management

MODULE 2: MYSQL OVERVIEW AND USE CASES
- What is MySQL?
- Why Choose MySQL?
- Use Cases and Applications

MODULE 3: MYSQL INSTALLATION
- Downloading and Installing MySQL
- Configuring MySQL Server
- Setting up the dev environment

MODULE 4: WORKBENCH & PHPMYADMIN
- Overview of MySQL Workbench
- Setting up MySQL Workbench
- Installing PHPMYADMIN
- Setting PHPMYADMIN

MODULE 5: BASIC QUERIES
- Understanding SQL Syntax
- Executing Basic SELECT Queries
- Using WHERE for Conditional Filtering
- Combining Conditions with AND, OR
- Sorting Data in Ascending and Descending Order
- Using ORDER BY with Multiple Columns

MODULE 6: DISTINCT, ORDER BY
- Eliminating Duplicates with DISTINCT
- Understanding DISTINCT Keyword
- Removing Duplicate Rows from Results
- Enhancing Sorting with ORDER BY
- Sorting Results using ORDER BY
- Combining DISTINCT and ORDER BY

MODULE 7: FUNCTIONS IN SQL
- Overview of SQL Functions
- Commonly Used Functions (e.g., COUNT, AVG, SUM)
- Manipulating Strings with Functions
- Concatenation, Substring, Length, etc.
- Mathematical Operations with Functions
- Round, Ceiling, Floor, etc.

MODULE 8: DATE AND DATE FUNCTIONS
- Understanding Date and Time in MySQL
- Date Data Types and Formats
- Extracting and Manipulating Dates
- Date Arithmetic and Formatting

MODULE 9: GROUP BY AND HAVING
- Grouping Data with GROUP BY
- Aggregating Data Using GROUP BY
- Applying Conditions to Grouped Data
- Combining GROUP BY and HAVING

MODULE 10: CONSTRAINTS
- Overview of Constraints in Database Design
- Types of Constraints (e.g., NOT NULL, UNIQUE)
- Adding Constraints during Table Creation
- Modifying Existing Tables with Constraints

MODULE 11: FOREIGN KEY
- Understanding Foreign Keys
- Importance of Foreign Keys in Relational Databases
- Creating Foreign Key Relationships

MODULE 12: INDEX
- Introduction to Indexing
- Role of Indexes in Database Performance
- Creating and Managing Indexes

MODULE 13: ON DELETE
- Managing Relationships with ON DELETE
- Exploring ON DELETE Actions
- Cascading, Set Null, Restrict, and No Action

MODULE 14: JOINS
- Joining Tables in SQL
- Understanding INNER JOIN, LEFT JOIN, RIGHT JOIN
- Combining Multiple Tables in Queries

MODULE 15: SUBQUERIES
- Working with Subqueries
- Introduction to Subqueries
- Implementing Subqueries in SELECT, WHERE, and FROM Clauses

MODULE 16: USING EXISTS, ANY, ALL
- Applying EXISTS, ANY
- ALL in Subqueries
- Examples of Subquery Optimization

MODULE 17: VIEWS
- Creating and Managing Views
- Introduction to Views in MySQL
- Creating, Modifying, and Dropping Views

MODULE 18: SOLVING LEETCODE SQL QUESTIONS
- Applying SQL to Problem Solving
- Overview of LeetCode and SQL Challenges
- Step-by-Step Problem Solving with SQL

CONCLUSION
- QA
- Useful References and Books
- Feedback

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