

MySQL DBA Certification Training

Course Curriculum : Your 10 module Learning Plan

<https://www.edureka.co/mysql-dba>

About Edureka

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About Course

MySQL DBA Certification Training trains you on the core concepts & advanced tools and techniques to manage data and administer the MySQL Database. This DBA Training includes hands-on learning on concepts like MySQL Workbench, MySQL Server, Data Modeling, MySQL Connector, Database Design, MySQL Command line, MySQL Functions etc. End of the DBA training you will be able to create and administer your own MySQL Database and manage data.

MYSQL DBA Certification Curriculum

Designing Your Database and Understand Data Types

Objectives: At the end of this module, you will be able to:

- Describe database modeling
- Use primary keys and foreign keys to achieve referential integrity
- Normalize your data model
- Design your new database
- Model a database using MySQL workbench and view the structure.
- Evaluate a database design
- Explain the use of different data types in database design
- Choose the correct data types while modeling data
- Describe the considerations for selecting data types

Topics:

- Database Modeling
- Keys and Normalization
- Database Design
- Viewing and Evaluating a Database
- Data Types and Database Design
- Numeric, Temporal and String Data Types
- Character Set and Collation Support
- Data Type Considerations
- Meaning of NULL

Hands On:

- Explore an Existing Database
- Designing a New Database
- Selecting Data Types for your New Database

Creating Databases and Tables

Objectives:At the end of this module, you will be able to:

- Create a database and add tables
- Use the SHOW CREATE TABLE statement
- Set column and table options
- Create indexes, keys, and constraints
- Delete a database.
- Create and delete a table.
- Add and remove table columns
- Modify table columns.

Topics:

- Creating a Database
- Creating a Table
- Showing How a Table Was Created
- Table Options
- Column Options
- Indexes, Keys, and Constraints
- Deleting database and tables

- Creating New Table Using an Existing Table
- Creating a Temporary Table
- Copying an Existing Table Structure
- Adding, removing and modifying table columns and indexes

Hands On:

- Creating a Database
- Deleting a Database
- Creating and Deleting a Table
- Altering Table Columns

Getting Started with MySQL and Installing MySQL

Objectives:At the end of this MYSQL DBA Training module, you will be able to:

- Understand MySQL products, professional services and support for your operating system.
- Define a relational database management system (RDBMS) and describe its structure.
- Explain the use of SQL and MySQL with relational databases
- Define data definition language (DDL) and data manipulation language (DML)
- Understand MySQL client/server model and work with MySQL connectors.
- Install the MySQL server on Linux, start and stop MySQL server
- Interact with the server using the MySQL command-line client.
- Log your MySQL command-line client session to a text file.
- Use MySQL Workbench to interact with the server.

Topics:

- MySQL Overview

- Basics of Relational Databases
- Entities and Relationships
- SQL Language and MySQL
- SQL data definition language and data manipulation language
- MySQL Client/Server Model
- MySQL Connectors
- Installation of the MySQL server
- Starting and stopping MySQL server
- Using the MySQL client
- MySQL Workbench

Hands On

- Install and Configure MySQL Server, Client and MySQL workbench
- Using MySQL Workbench
- Creating the 'world' Database & Explore the Schema

Querying and Modifying Table Data

Objectives:At the end of this module, you will be able to:

- Retrieve database data using the SELECT statement from your database.
- Use the SELECT statement clauses: FROM, DISTINCT, WHERE, ORDER BY, and LIMIT
- Create views
- Query data from application code
- Export and import a delimited file

Topics:

- The SELECT Statement
- Creating Views
- Querying Data from an Application
- Exporting and Importing a Delimited File
- Troubleshooting: Authorization Levels
- Manipulating Data and inserting records
- Replacing and updating existing records
- Deleting records
- Exporting and importing a script
- Multistatement Transactions
- Modifying Data from an Application

Hands On:

- Executing Basic Queries
- Importing a Delimited File
- Performing Basic Queries on Imported Data
- Performing Basic Queries from a PHP Application
- Exporting Table Data for MySQL Database
- Inserting, Modifying and Deleting Data
- Exporting a Script

Joining Tables and Functions

Objectives:At the end of this module, you will be able to:

- Explain the concept of a join

- Use the JOIN keyword to query multiple tables
- Execute inner and outer joins
- Use the UNION keyword to combine multiple queries
- Use built-in functions in MySQL
- Describe and use: string functions, Date and time functions, Numeric functions.
- Use aggregate functions with the SELECT statement

Topics:

- Querying Multiple Tables
- Joining Tables with SELECT
- Inner Joins
- Outer Joins
- Table Name Aliases
- Functions in MySQL Expressions
- Using Functions
- String Functions
- Date and time functions
- Numeric Functions
- Aggregate Functions
- Spaces in Function Names

Hands On:

- Using Joins in Queries
- Using Unions in Queries
- Using Built-In, String, and Date and Time Functions
- Using Numeric Functions

- Using Aggregate Functions

MySQL Architecture and Administration Basics

Objectives: At the end of this module, you will be able to:

- Explain how MySQL processes, stores, and transmits data
- Configure InnoDB tablespaces
- Explain how MySQL uses memory
- Configure the InnoDB buffer pool
- List some of the available plug-ins

Topics:

- Architectural Overview
- Understand how MySQL Transmits Data and Processes Requests
- Understand how MySQL Stores Data and Uses Memory
- Tablespaces, Redo and Undo Logs
- Plug-in Interface

Hands On:

- Configuring Tablespaces
- Configuring the Buffer Pool

Configuring & Monitoring MySQL Server

Objectives: At the end of this module, you will be able to:

- Describe database modelling.

- Use primary and foreign keys to achieve referential integrity.
- Normalize your data model.
- Design your new database.
- Model a database using MySQL workbench and view the structure.
- Evaluate a database design.
- Explain the use of different data types in database design.
- Choose the correct data types while modelling data.

Topics:

- Server Configuration Options
- Option Files and System Variables
- Launching Multiple Servers on the Same Host
- Monitoring Tools & Techniques
- MySQL Enterprise Audit
- MySQL Enterprise Monitor
- Monitoring User Activity

Hands On:

- Modifying the Configuration File
- Changing Dynamic Settings
- Configuring the Slow Query Log
- Using Performance Schema

Security

Objectives:At the end of this module, you will be able to:

- Recognize common security risks
- List security problems and counter-measures for networks, passwords, operating systems, file systems and applications.
- Protect your data from interception and access.
- Use SSL for secure MySQL server connections.
- Use SSH to create a secure remote connection to MySQL.

Topics:

- Understanding Security Risks
- Network Security & Secure Connections
- Password & Operating System Security

Hands On:

- Enable SSL Connections on the MySQL Server

User Management

Objectives:At the end of this module, you will be able to:

- Create user accounts.
- Design a permission structure.
- Control user permissions
- Grant access to system operations
- Authenticate by using plug-ins
- Expire accounts manually and automatically.
- Reset a forgotten root password.

Topics:

- Creating and Modifying User Accounts

- Configuring Passwords
- Authentication Plug-Ins
- Granting Permissions & Grant Tables

Hands On:

- Creating Users
- Granting Permissions

Backup Tools & Technique

Objectives:At the end of this module, you will be able to:

- Distinguish between the different types of backup
- State advantages and disadvantages of the various backup techniques
- Implement a backup strategy
- Use MySQL Enterprise Backup to perform consistent backups.
- Use the mysqldump and mysqlpump utilities to perform logical backups
- Understand when and how to use raw file backups
- Back up the binary log

Topics:

- Understanding Backups & Backup Techniques
- Creating a Backup Strategy
- MySQL Backup Tools
- Raw Backup Methods

Hands On:

- Backing up using mysqldump and mysqlpump

MYSQL DBA Certification Projects

What are the system requirements for this MYSQL DBA Certification course?

You should have a minimum of 4 GB RAM and processor i3 or above

How will I execute the Practicals?

We will help you to setup Virtual Machine in your System with local access. The detailed installation guides are provided in the LMS for setting up the environment.

Which Case-Studies will be part of the course?

In the project you will be creating a Database using MySQL on SALARY MANAGEMENT SYSTEM :-

- Employee list to be maintained having id, name, designation, experience
- Salary details having employee id, current salary
- Salary in hand details having employee id, CTC salary, pf 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.