

Course Content of Database My SQL for Administrators+ Developers:

1.Course Content of Database My SQL for Administrators:

Introduction to MySQL

- MySQL overview
- MySQL Enterprise Edition
- MySQL on the Web
- MySQL in the Cloud
- The MySQL community

Installing MySQL

- Installing MySQL
- Installed Files and Directories
- Initial Configuration
- Starting and Stopping MySQL
- Upgrading MySQL

MySQL Architecture

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

Configuring MySQL

- Server Options, Variables, and the Command Line
- Option Files
- System Variables
- Launching Multiple Servers on the Same Host

Monitoring MySQL

- Monitoring MySQL with Log Files
- Monitoring MySQL with Status Variables
- Monitoring MySQL with Performance Schema
- MySQL Enterprise Audit
- MySQL Enterprise Monitor
- Monitoring User Activity

User Management

- MySQL Privilege System
- Creating and Modifying User Accounts
- Configuring Passwords and Account Expiration
- Authentication Plug-Ins
- Granting Permissions
- Grant Tables
- Resetting a Forgotten Root Password

MySQL Security

- Security Risks
- Network Security
- Secure Connections
- Password Security
- Operating System Security
- Protecting Against SQL Injections
- MySQL Enterprise Firewall

Maintaining a Stable System

- Stability
- Why Databases Fail
- Capacity Planning
- Troubleshooting
- Identifying the Causes of Server Slowdowns
- InnoDB Recovery

Optimizing Query Performance

- Identifying Slow Queries
- The EXPLAIN statement
- Working with Indexes
- Index Statistics

Backup Strategies

- Understanding Backups
- Backup Techniques
- Creating a Backup Strategy

Performing Backups

- MySQL Backup Tools
- Raw Backup Methods
- Techniques that Use the Binary Log

Configuring a Replication Topology

- Overview of Replication
- Replication Conflicts
- When to Use Replication
- Configuring Replication

Administering a Replication Topology

- Failover

- MySQL Utilities
- Replication Threads
- Monitoring Replication
- Troubleshooting Replication

Group Replication

- Overview
- Single-Primary and Multi-Primary Modes
- Configuring Group Replication
- Monitoring Group Replication

2.Course Content of Database My SQL for Developers:

Introduction to MySQL

- MySQL overview
- MySQL Enterprise Edition
- MySQL on the Web
- The MySQL community
- What is MySQL Cloud Service
- What it means to provision a MySQL Cloud Service instance
- How an instance of MySQL Cloud Service differs from having an on-premises instance
- How MySQL course content covers material that applies whether you run MySQL locally or in MySQL Cloud Service

Connectors and APIs

- Introducing MySQL Connectors
- PHP Connectors
- Connector/J
- Connector/Python
- Embedding MySQL in an application
- Integration with MySQL Fabric

Using Connectors

- PHP, Java, and Python Connectors
- Reusing connections
- Dealing with special characters and null values
- Storing and retrieving connection details
- Creating secure connections to the MySQL server

Prepared Statements

- Reasons for using prepared statements
- User-defined variables
- Preparing, executing, and deallocating prepared statements
- Using prepared statements with Connectors

Handling Errors and Warnings

- SQL modes
- Interpreting errors and warnings
- MySQL diagnostics
- Error and exception handling with Connectors

Building Database-Driven Web Applications

- Anatomy of a database-driven web application
- Different methods of displaying query results
- Web forms and processing requests
- Using hyperlinks for navigation
- Displaying query results across multiple pages
- Dynamic sorting of query results

Tables and Views

- Creating new tables from existing tables
- Temporary tables
- Using mysqldump

- Working with views

Working with Strings

- Overview of working with strings
- String functions
- Sorting and comparing strings
- Matching string patterns with regular expressions
- Using FULLTEXT search

Working with Numeric and Temporal Data

- Numeric expressions
- Temporal expressions
- Interval arithmetic
- Numeric functions
- Temporal functions

Subqueries

- Subquery: overview
- Scalar subqueries
- Row subqueries
- Table subqueries
- Correlated and non-correlated subqueries
- Subqueries in data modification statements

Modifying Table Data

- Using the INSERT statement
- Retrieving the ID of the last-inserted record
- Using the DELETE statement
- Using the UPDATE and REPLACE statements
- Using the TRUNCATE statement

Transactions

- Overview of transactions
- Transactional statements
- Using transactions within programs
- Consistency issues
- Isolation levels
- Locking

Query Optimization

- Optimization strategies
- The MySQL Query Optimizer
- Indexing
- Query analysis with the EXPLAIN statement
- Rewriting queries
- MySQL Enterprise Monitor

Stored Routines

- Creating stored routines
- Variables in stored routines
- Parameters in stored routines
- Managing stored routines in the database
- Using flow control statements and constructs
- Using cursors
- Limitations of stored routines

Triggers and Scheduled Events

- Triggers
- Scheduled Events

Reporting

- Aggregating data
- Summary tables
- Grouping data

- Crosstab reports
- Bar charts
- Decision tables

NoSQL

- NoSQL in MySQL
- Memcached plugin for InnoDB
- Memcached application development
- The JSON native data type
- JSON functions
- Generated columns