

Module 1: MySQL Fundamentals

Introduction:

☐ Data:

- ☐ Data is facts related to any entity in consideration.

☐ Database:

→ ☐ Database

- ☐ Database is collection of tables.
- ☐ Each table is made of a series of columns.
- ☐ Data is stored in rows.
- ☐ Place where row intersects with columns is called field.

☐ Database Management Systems (DBMS):

→ ☐ DBMS

☐ Relational Database:

- ☐ It is a database made up of tables and columns that relate to one another.
- ☐ The relationships are based on a key that is contained in a column.

MySQL Introduction:

→ ☐ MySQL is

- ☐ MySQL was developed by Michael Widenius & team at Swedish firm MySQL AB and released within company in 1995.
- ☐ Its name is combination of My – name of co-founders daughter and SQL.
- ☐ MySQL AB was acquired by Sun Microsystems in 2008 and later by Oracle Corporation in 2010.
- ☐ MySQL is written in C and C++.
- ☐ MySQL 8.0 was released on April 19, 2018.

MySQL Architecture:

- ☐ MySQL operates in a networked environment using a client/server architecture i.e. a central program acts as a server and various client program connect to the server to make requests.
- ☐ MySQL installation has following major components:
 - ☐ **mysqld → MySQL Server:**
 - ☐ It is the database server program which manages access to the actual databases on disk and in memory.
 - ☐ It is multithreaded and supports many simultaneous client connections.
 - ☐ **mysql → Client programs:**
 - ☐ It is a command
 - ☐ It's used for issuing queries and viewing results interactively from a terminal window.
 - ☐ MySQL Workbench is the graphical front ends to the server.

Connection Parameters:

- ☐ **MySQL User Identification:**
 - ☐ Options
 - ☐ --user
 - ☐ MySQL account username
 - ☐ --password
 - ☐ MySQL account password
 - ☐ Usage:
 - ☐ --user=user_name or -u user_name
 - ☐ --password=pass_value or -ppassvalue
- ☐ **MySQL options for establishing connection:**
 - ☐ Options
 - ☐ --host
 - ☐ host where the server is running
 - ☐ --port
 - ☐ port number for TCP/IP connections.
 - ☐ Usage:
 - ☐ --host=host_name or -h host_name
 - ☐ The value of host_name can be hostname or an IP number.
 - ☐ Default hostname is localhost meaning the computer on which we are running the client program.
 - ☐ --port=port_number or -P port_number
 - ☐ It indicates the port number to which to connect on the server host.
 - ☐ Default MySQL port number is 3306.

SQL:

→ ☐ SQL – Structured Query Language is the

☐ SQL Advantages:

- ☐ We can access many records in a single command.
- ☐ It eliminates the need to specify how to reach a record

DDL:

☐ DDL is abbreviation of Data Definition Language. It is used to create and modify the structure of database objects in database.

☐ DDL Statements in MySQL:

- ☐ **CREATE** – Creates objects in the database.
- ☐ **ALTER** – Alters objects of the database.
- ☐ **DROP** – Deletes objects of the database.
- ☐ **TRUNCATE** – Deletes all records from a table.
- ☐ **RENAME** – Renames tables/views to new names.

DML:

☐ DML is abbreviation of Data Manipulation Language. It is used to retrieve, store, modify, delete and update data in database.

☐ DML Statements in MySQL:

- ☐ **SELECT** – Retrieves data from a table.
- ☐ **INSERT** – Inserts data into a table.
- ☐ **UPDATE** – Updates existing data into a table.
- ☐ **DELETE** – Deletes all records from a table.
- ☐ **REPLACE** – Inserts data into table and if already exists then deletes and inserts.

TCL:

☐ TCL is abbreviation of Transactional Control Language. It is used to manage different transactions occurring within a database.

☐ TCL statement in MySQL:

- ☐ **BEGIN** – Starts the transaction.
- ☐ **COMMIT** – Saves work done in transactions
- ☐ **ROLLBACK** – Restores database to original state since the last COMMIT command in transactions

DCL:

☐ DCL is abbreviation of Data Control Language. It is used to create roles, permissions and control access to database.

☐ DCL statements in MySQL:

- ☐ **GRANT** – Gives user's access privileges to database
- ☐ **REVOKE** – Withdraws user's access privileges to database given with the GRANT command

MCQs

Q1) MySQL was developed by

Options:

- | | |
|------------------|---------------------|
| A. Bill Gates | B. Michael Widenius |
| C. James Gosling | D. Larry Page |

Solution:

Q2) What is the full form of SQL

Options:

- | | |
|------------------------------|--------------------------|
| A. Structured Query Language | B. Structured Query List |
| C. Simple Query Language | D. None of these |

Solution:

Q3) Which of the following are DDL statements in MySQL: (Select two)

Options:

- | | |
|-----------|-----------|
| A) CREATE | B) INSERT |
| C) MODIFY | D) ALTER |

Solution:

Q4) Which of the following are DML statements in MySQL: (Select two)

Options:

- | | |
|-----------|-----------|
| A) DELETE | B) DROP |
| C) SELECT | D) RENAME |

Solution:

Q5) Which of the following are TCL commands?

Options:

- | | |
|------------------------|------------------------|
| a) UPDATE and TRUNCATE | b) SELECT and INSERT |
| c) GRANT and REVOKE | d) ROLLBACK and COMMIT |

Solution:

Q6) Match SQL language with SQL commands

- | | |
|-------|----------------------|
| 1)DDL | i)Revoke, Grant |
| 2)DML | ii)rename a table |
| 3)TCL | iii)insert, update |
| 4)DCL | iv)rollback , commit |

Options:

- A. 1-iii,2-i,3-ii,4-iv
B. 1-iii,2-ii,3-iv,4-i
C. 1-ii,2-iii,3-iv,4-i
D. 1-i,2-iii,3-ii,4-iv

Solution: