Module 2: MySQL Database and Table

MySQL Database:

❑ MySQL Server manages data by performing storage, retrieval and manipulation of database records.
❑ Records are organized into tables, and tables are organized into databases.
❑ MySQL stores databases common location called "data directory".
❑ C:\ProgramData\MySQL\MySQL Server 8.0\Data
❑ Server represents each database using a subdirectory of data directory. The name of subdirectory is the same name as the database name.

Creating Database:

→ ❑ **CREATE**

❑ Followed by the CREATE DATABASE statement is database name that you want to create.
❑ It is recommended that the database name should be as meaningful and descriptive as possible.
❑ If we try to create a database that already exists an error occurs. With IF NOT EXISTS clause, the statement creates the database only if it does not already exists else statement does nothing and no error occurs.

Showing Database:

→ ❑ **SHOW**

❑ The SHOW statement displays all databases in the MySQL database server. You can use the SHOW statement to check the database that you've created or to see all the databases on the database server before you create a new database.
❑ SHOW DATABASES can take a LIKE 'pattern' clause. With LIKE, the statement performs a pattern-matching operation and displays information only about database with names that match the pattern.

Using & Finding Databases:

→ ❑ **USE**

❑ Creating a database has no effect on which database currently is selected as the default database.
❑ Before working with a particular database, you must tell MySQL which database you want to work with by using the USE statement.

→ ❑ **SELECT**

❑ This can be used to retrieve the current database being selected.

Dropping Database:

→ ❑ **DROP**
- ❑ Followed the DROP DATABASE is the database name that you want to remove.
- ❑ Similar to the CREATE DATABASE statement, the IF EXISTS is an optional part of the statement to prevent you from removing a database that does not exist in the database server.
- ❑ DROP DATABASE does not require the database to be empty. MySQL removes all objects that it contains: tables, stored routines and triggers.

Renaming Database:
- ❑ We cannot rename a database.
- ❑ One way to do this is to :
  - ❑ Dump the database
  - ❑ Create a database with new name
  - ❑ Reload the data into new database
  - ❑ Drop the old database.

Schema:
- ❑ Another word for database is schema.
- ❑ Statements that use the database keyword can be written using schema also.

Database - MCQS

Q1) MySQL database is collection of _____.

Options:

a) Tables   b) Columns

c) Chairs   d) Rows

Solution:

Q2) CREATE DATABASE TEsT;
What is the result if database "test" already exists for the current user.

Options:

a) Syntax Error

b) Existing database would be dropped and new would be created.

c) Database called "TEsT" would be created.

d) Error

Solution:

Q3) How to inform MySQL about using a particular database?
Options:
   a) Select database database_name
   b) Use database_name
   c) Choose database database_name
   d) Use database database_name

Solution:

Q4) To delete a database _____ command is used
Options:
   a) Delete database database_name
   b) Delete database_name
   c) drop database database_name
   d) drop database_name

Solution:

Table:

→ ❑ Table is a
   ❑ It consists of rows and columns.
   ❑ It has specified number of columns but can have any number of rows.
   ❑ Single entry in a table is called tuple/ record/ row. Tuple represents set of related data.
   ❑ Record can be broken down into smaller parts of data know as attributes.

Create Table:

→ ❑ **CREATE**

   ❑ First, you specify the name of the table that you want to create after the CREATE TABLE clause. The table name must be unique within a database.
   ❑ The IF NOT EXISTS is an optional part of the statement that allows you to check if the table that you are creating already exists in the database. If this is the case, MySQL will ignore the whole statement and will not create any new table.
   ❑ column_list will specify the list of columns for the table.
   ❑ Column names are separated by a comma.
        ❑ **column_name_1 data_type [column_attributes],**
        ❑ **[, column_name_2 data_type [column_attributes]] ...**
        ❑ **[, table_level_constraints]**

   ❑ Note: while creating a table we need to specify atleast one column.

Identifiers:

- ❑ Identifiers is the name given to

- ❑ Identifiers may be unquoted or quoted.

Identifier Rules:

- ❑ Identifier can contain any combination of:
    - ❑ Lower case letters (a-z)
    - ❑ Upper case letters (A-Z)-
    - ❑ Digits (0-9)
    - ❑ Special symbols $ and _
- ❑ Identifier must be quoted (` `)if:
    - ❑ It is a reserved word
    - ❑ It contains other special characters(apart from $ and _).
    - ❑ It contains only digits.
- ❑ Identifier can have maximum length of 64 character (except alias which can have 256)
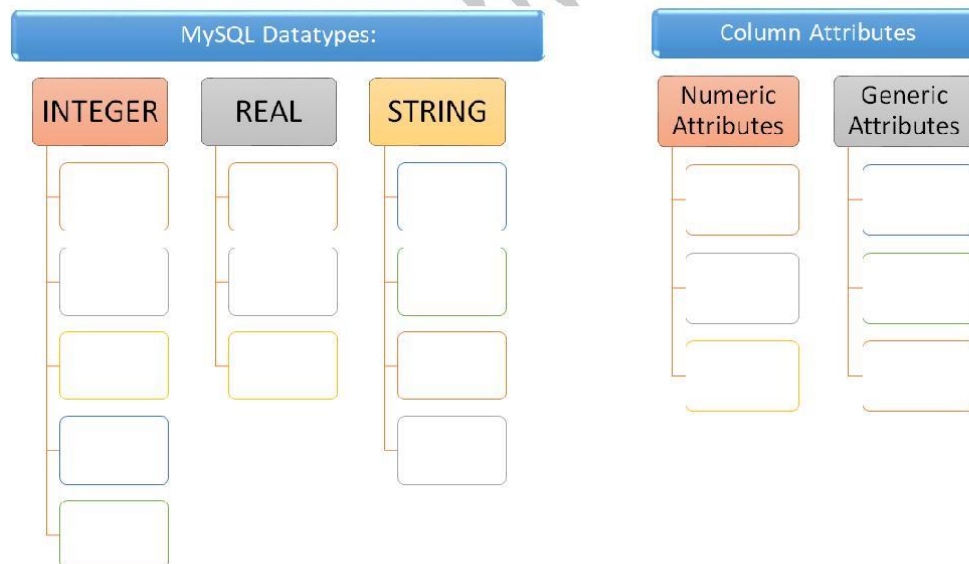
Datatypes and Column Attributes:

MySQL Datatypes:		
INTEGER	REAL	STRING

Column Attributes	
Numeric Attributes	Generic Attributes

Table – MCQ's

Q1) CREATE statement is _____ ?
Options:
- A. DML statement.
- B. DDL statement.
- C. DCL statement.
- D. TCL statement.

Solution:

Q2) What is the result of following assuming tab3 table does not exist?

create tab3(a int);

Options:
- A. table tab3 is created with 0 rows.
- B. table tab3 is created with 1 rows.
- C. error.
- D. table tab3 is created with 2 columns.

Solution:

Q3) What is the result of following assuming tab3 table does not exist?

create table tab3();

Options:
- A. table tab3 is created with 0 columns
- B. table tab3 is created with 1 column
- C. error.
- D. table tab3 is created with 2 columns.

Solution:

Q4) Which is the valid CREATE TABLE statement?
Options:
- A. CREATE TABLE emp9$# (emp_no int);
- B. CREATE TABLE 987 (emp_no int);
- C. CREATE TABLE alter (emp_no int);
- D. CREATE TABLE 9emp$ (emp_no int);

Solution: