

## DBMS

- DATABASE MANAGEMENT SYSTEM
- eg - excel

## RDBMS

- RELATIONAL DATABASE MANAGEMENT SYSTEM
- MySQL, MSSQL, etc...
- 12 rules Codd

## SQL

- Structured Query Language
- RQBE(Relational Query By Example)
- 5 categories of SQL queries
  - 1.DDL-> Data Defination Language
  - 2.DML -> Data Manipulation Language
  - 3.DQL -> Data query language
  - 4.DCL -> Data Control language
  - 5.TCL -> Transaction control Language

## Mysql

- Developed by Michael Wideneus
- 

## Getting Started

1. Installation
  - Download the .msi file from the given link in the pdf
  - Click on the downloaded file and start the installation (Follow the steps given pdf)
  - Check in the location 'C:\Program Files\MySQL\MySQL Server 8.0\bin' if the mysql.exe and mysqld.exe exists or not
  - open the command prompt and give the command -> mysql --version (8.0.31)
  - If the command doesn't work check for the path whether it is set in the environment variables or not
  - Open the task manager and check inside the services tab whether the MYSQL80 service is running or not.

- If the service is showing as stopped then in this case rightclick on the service and start the service

## Login to the server

```
mysql -u root -p (hit enter)
-- give the password
```

mysql - command -u -> username -p -> password -h -> host

## Database

- It is container/namespace
- We need to create the database before creating the tables.

```
-- To show the already created databases
SHOW DATABASES;

-- To check into which database we are
SELECT DATABASE();

-- To use or go inside a database
USE <database_name>

-- To see all the tables inside the database
SHOW TABLES;

-- Create a database
CREATE DATABASE dbda_db;
```

## Datatypes

```
1.Numeric type
  - tinyint(1 byte)
  - smallint(2 bytes)
  - mediumint(3 bytes)
  - int(4 bytes)
  - bigint(8 bytes)
  - float(4 bytes)
  - double(8 bytes)
  - Decimal(m,n)
    - m-> digits -> digits before decimal + digits after decimal

2.String type
```

- char(n)
- varchar(n)
- tinytext(255)
- Text(64K)
- MediumText(16MB)
- longText(4GB)

### 3.Date Time type

- Date->supported range is '1000-01-01' to '9999-12-31'.
- Time -> range is '-838:59:59.000000' to '838:59:59.000000'.
- DateTime -> '1000-01-01 00:00:00.000000' to '9999-12-31 23:59:59.999999'.
- Timestamp -> '1970-01-01 00:00:01.000000' UTC to '2038-01-19 03:14:07.999999'

UTC.

### 4.Binary Types

- Binary(n)
- varbinary(n)
- Blob

### 5. Misc types

- ENUM
- SET

## Steps to create Table

```
CREATE TABLE students(
    rollno INT,
    name CHAR(15),
    marks DECIMAL(4,2));

SHOW TABLES;

-- It will display the structure if your table.
DESC students

-- To display all the data from your table
SELECT * FROM students
```

## Add data in table

```
INSERT INTO students VALUES(101,"Rohan",35);
INSERT INTO students VALUES(102,"Pradnya",45);

INSERT INTO students(rollno,name) VALUES(103,"Mayur");

INSERT INTO students VALUES
(104,"Manisha",38),
(105,"Girish",42);
```

## DELETE TABLE AND DATABASE

```
-- To delete the entire table
DROP TABLE students;

-- To delete the database
DROP DATABASE dbda_db;
```

## Import the tables and data in database

```
CREATE DATABASE classwork_db;

USE classwork_db;

SOURCE <path of classwork-db.sql file>
```

## Difference between char,varchar,Text

```
USE dbda_db;

CREATE TABLE demo(
    col1 CHAR(4),
    col2 VARCHAR(4),
    col3 TEXT
);

DESC demo;

INSERT INTO demo VALUES("abc","abc","abc");
INSERT INTO demo VALUES("abcd","abcd","abcd");

INSERT INTO demo VALUES("abcde","abcd","abcd");
--ERROR 1406 (22001): Data too long for column 'col1' at row 1

INSERT INTO demo VALUES("abcd","abcde","abcd");
--ERROR 1406 (22001): Data too long for column 'col2' at row 1

INSERT INTO demo VALUES("abcd","abcd","abcde");

CREATE TABLE demo2(
    col1 CHAR(4),
    col2 VARCHAR(4),
    col3 TEXT(4)
);
```

```
INSERT INTO demo2 VALUES("abcd","abcd","abcde");
```