# MySQL-SQL

# WHAT IS SQL?

- SQL stands for Structured Query Language
- Used for managing and manipulating relational databases.
- SQL lets you access and manipulate databases
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987.

# WHAT CAN SQL DO?

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL can set permissions on tables, procedures, and views

# LIST OF RELATIONAL DATABASE MANAGEMENT SYSTEMS

- MySQL
- PostgreSQL
- Oracle Database
- Microsoft SQL Server
- SQLite

- IBM Db2
- MariaDB

### CASE SENSITIVE OR NOT?

• KEYWORDS AND IDENTIERS ARE CASE INSENSITIVE LITERALS ARE CASE SENSITIVE.

# WHAT DO YOU MEAN BY DBMS? WHAT ARE ITS DIFFERENT TYPES?

Database is a structured collection of data.

A Database Management System (DBMS) is a software application that interacts with the user, applications and the database itself to capture and analyse data.

A DBMS allows a user to interact with the database using query language such as SQL. The data stored in the database can be modified, retrieved and deleted and can be of any type like strings, numbers, images etc.

#### THERE ARE TWO TYPES OF DBMS:

Relational Database Management System: The data is stored in relations (tables). Example - MySQL, Oracle SQL.

Non-Relational Database Management System: There is no concept of relations, tuples and attributes. Example - Mongo

# WHAT ARE THE DIFFERENT SUBSETS OF SQL?

The standard SQL commands to interact with relational databases are CREATE, SELECT, INSERT, UPDATE, DELETE and DROP. These commands can be classified into the following groups based on their nature –

### DDL - Data Definition Language

|   | Command & Description  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| 1 | CREATE  Creates a new table, a view of a table, or other object in the database.   |  |  |  |  |  |  |
| 2 | ALTER Modifies an existing database object, such as a table.                       |  |  |  |  |  |  |
| 3 | DROP  Deletes an entire table, a view of a table or other objects in the database. |  |  |  |  |  |  |

#### DML - Data Manipulation Language

|   | Command & Description                                     |  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|--|
| 1 | SELECT Retrieves certain records from one or more tables. |  |  |  |  |  |  |  |
| 2 | INSERT  |  |  |  |  |  |  |  |

|   | Creates a record.        |
|---|--------------------------|
| 3 | UPDATE Modifies records. |
| 4 | DELETE Deletes records.  |

# DCL - Data Control Language

|   | Command & Description                            |
|---|--|
| 1 | GRANT Gives a privilege to user.                 |
| 2 | REVOKE  Takes back privileges granted from user. |

# <u>DQL - Data Query Language</u>

|   | Command & Description   |  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|--|
| 1 | SELECT The SELECT statement is used to retrieve data from one or more tables. |  |  |  |  |  |  |  |

| 2 | DISTINCT The DISTINCT keyword is used with SELECT to retrieve unique values from a specified column or a combination of columns.                          |
|---|---|
| 3 | FROM The FROM clause specifies the table or tables from which you want to retrieve data.  |
| 4 | WHERE The WHERE clause is used to filter rows based on a specified condition. It allows you to retrieve only the rows that meet the criteria you specify. |
| 5 | ORDER BY The ORDER BY clause is used to sort the result set in ascending (ASC) or descending (DESC) order based on one or more columns.                   |
| 6 | GROUP BY The GROUP BY clause is used to group rows with the same values in one or more columns into summary rows.   |
| 7 | HAVING  The HAVING clause is used to filter the results of a GROUP BY query based on a condition applied to the aggregated values.                        |

#### WHAT DO YOU MEAN BY TABLE AND FIELD IN SQL?

A table refers to a collection of data in an organised manner in form of rows and columns. A field refers to the number of columns in a table. For example:

**Table:** StudentInformation

Field: StudentId, StudentName, StudentMarks

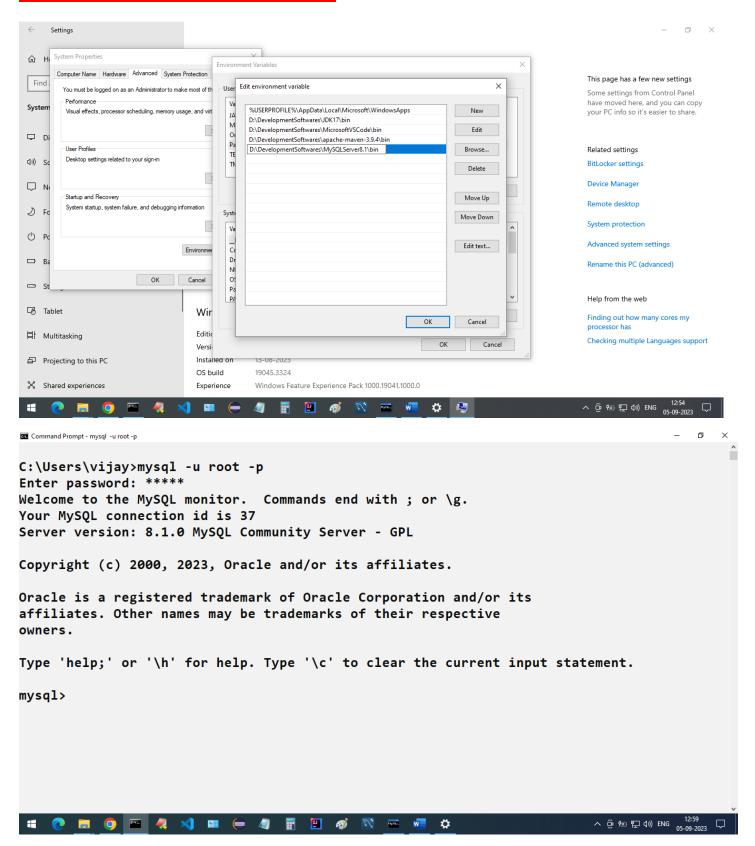
Please follow the link to Learn how download and install MySQL Database and MySQL Workbench

https://rb.gy/3hcwf

Note: If you are getting error while installing
MySQL Server and MySQL Workbench like 'MySql
Workbench installer requires Visual C++ 2015' then
follow

https://aka.ms/vs/17/release/vc redist.x64.exe this link and download and install this piece of software.

# To Access the SQL Prompt from the windows command Line client set the path



#### TO CREATE A NEW USER

CREATE USER 'new\_user'@'localhost' IDENTIFIED BY
'password';

new\_user is the name we've given to our new user account and the IDENTIFIED BY 'password' section sets a passcode for this user. You can replace these values with your own, inside the quotation marks.

In order to grant all privileges of the database for a newly created user, execute the following command:

GRANT ALL PRIVILEGES ON \* . \* TO 'new user'@'localhost';

For changes to take effect immediately flush these privileges by typing in the command:

FLUSH PRIVILEGES;

#### TO DISPLAY ALL THE USERS

mysql> SELECT user, host FROM mysql.user;

# **SEMICOLON AFTER SQL STATEMENTS?**

- Some database systems require a semicolon at the end of each SOL statement.
- Semicolon is the standard way to separate each SQL statement in database systems that allow more than one SQL statement to be executed in the same call to the server.

#### CREATE NEW USER WITH PASSWORD

```
mysql> CREATE USER 'manager'@'localhost' IDENTIFIED BY
'admin';
mysql> CREATE USER 'vijay'@'localhost' IDENTIFIED BY
'admin';
```

#### DROP EXISTING USER

```
mysql> DROP USER 'manager'@'localhost';
mysql> DROP USER 'vijay'@'localhost';
```

#### **GRANT ALL PRIVILIAGES TO THE NEW USER**

GRANT ALL PRIVILEGES ON \*.\* TO 'vijay'@'localhost';

#### TO CHECK CURRENT USER PRIVILIAGES

```
mysql> SHOW GRANTS FOR 'root'@'localhost';
```

#### TO GIVE ALL THE PRIVILIAGES

```
mysql> GRANT ALL PRIVILEGES ON * . * TO 'root'@'localhost';
mysql> GRANT ALL PRIVILEGES ON * . * TO
'vijay'@'localhost';
```

#### FOR CHANGES TO TAKE EFFECT IMMEDIATELY

```
mysql> FLUSH PRIVILEGES;
```

Note: Starting from MySQL 5.7.3, the FLUSH PRIVILEGES; statement is no longer strictly required after executing GRANT or REVOKE statements. The server automatically reloads the grant tables in these cases.

#### TO OPEN SQL PROMPT USING NEW USER

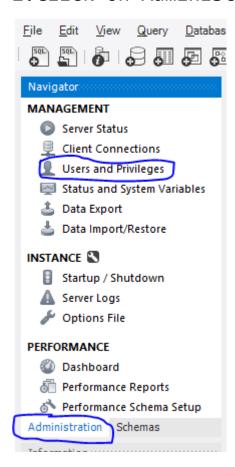
```
Command Prompt - mysql -u manager -p
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.
C:\Users\VIJAYS_PROGRAMMING>mysql -u manager -p
Enter password:
ERROR 1045 (28000): Access denied for user 'manager'@'localhost' (using password: NO)
C:\Users\VIJAYS_PROGRAMMING>mysql -u manager -p
Enter password: *****
Welcome to the MySQL monitor. Commands end with; or \g.
Your MySQL connection id is 15
Server version: 8.1.0 MySQL Community Server - GPL
Copyright (c) 2000, 2023, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
О
Command Prompt - mysgl -u vijay -p
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.
C:\Users\vijay>mysql -u vijay -p
Enter password: *****
Welcome to the MySQL monitor. Commands end with; or \g.
Your MySQL connection id is 39
Server version: 8.1.0 MySQL Community Server - GPL
Copyright (c) 2000, 2023, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>
                                                                             へ (全 性) ENG 05-09-2023
                    × <u>•</u> •
                                      •
                                          4
                                                        *
```

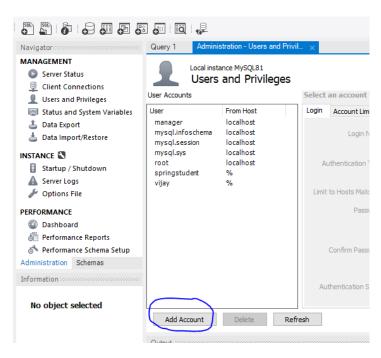
#### TO CREATE A NEW USER IN THE MYSQL WORKBENCH

1.Log in to any connection

2.Click on Administration on the left hand side

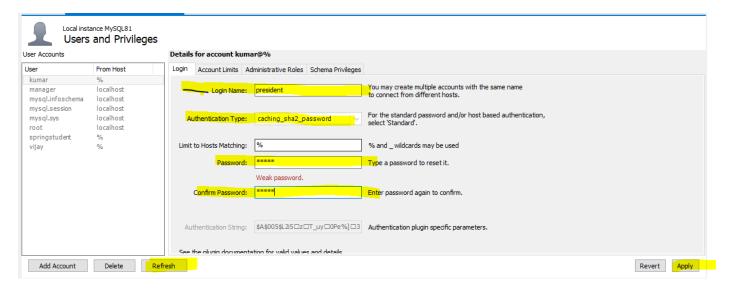


- 3.Click on Users and Privileges
- 4. Click on Add account to create a new account



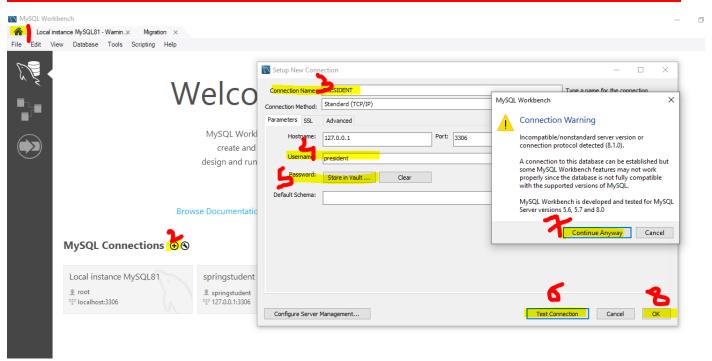
5. Fill in the deatails

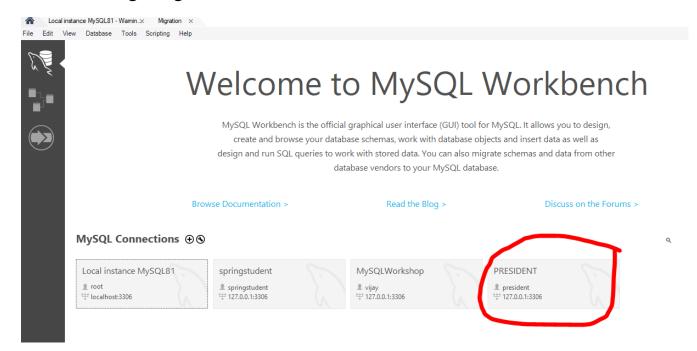
**Note:** Authentication type should be same as other accounts(check for root)



6.Click on Apply and Refresh

#### TO ADD A NEW CONNECTION TO THE MYSQL WORKBENCH HOME





Note: While creating the connection the user must be available(created already). Password is the user password that you have given at the time of creating a user.

# TO CLEAR THE SCREEN IN MYSQL

mysql> \! Cls

### TO DISPLAY ALL THE DATABASES

**SHOW DATABASES** command to get list of databases. Run the following query to show list of databases.

| my  | /sql> | SHOW   | DATABASE  | S; |
|-----|-------|--------|-----------|----|
| +-  |       |        |           | -+ |
|     | Datab | oase   |           |    |
| + - |       |        |           | -+ |
|     | infor | rmatio | on_schema |    |

```
FSD Training Program
 mysql
 mysql_notes
| performance_schema |
 student_tracker
  sys
TO CREATE A NEW DATABASE
mysql> CREATE DATABASE MYSQL_NOTES;
Query OK, 1 row affected (0.01 sec)
mysql> SHOW DATABASES;
 Database
  information_schema |
| mysql
| mysql_notes
| performance_schema |
 student_tracker
```

# TO DELETE A DATABASE

sys

```
FSD Training Program
mysql> DROP DATABASE MYSQL_NOTES;
Query OK, 0 rows affected (0.01 sec)
mysql> SHOW DATABASES;
Database
+----+
| information_schema |
| mysql
| performance schema |
student_tracker
sys
TO SET OR SELECT A DATABASE
• Before doing anything first we need to connect to a
  database.
mysql> USE MYSQL NOTES;
Database changed
TO CHECK CURRENTLY WHICH DATABASE YOU ARE IN
mysql> SELECT DATABASE();
```

```
FSD Training Program
| DATABASE() |
+----+
| mysql notes |
+----+
1 row in set (0.00 sec)
CREATING A SIMPLE TABLE
CREATE TABLE STUDENT (ID INTEGER, FIRST NAME VARCHAR(90),
AGE INTEGER, COURSE VARCHAR(10));
Query OK, 0 rows affected (0.03 sec)
  • INTEGER is a data type synonym for INT.
  • You can use both INT and INTEGER datatype to specify
    number types.
mysql> INSERT INTO STUDENT VALUES (101, 'ARUN', 20, 'CSE');
Query OK, 1 row affected (0.02 sec)
mysql> INSERT INTO STUDENT VALUES (102, 'BHAVESH', 21,
'ISE');
Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (103, 'CHAITANYA', 22,
```

'ECE');

'MECH');

Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO STUDENT VALUES (104, 'DEEPIKA', 23,

```
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Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (105, 'DHANUSH', 24,
'DS');
Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (106, 'EKTA', 25, 'AI');
Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (107, 'GAURAV', 26,
'ARCH');
Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (108, 'HARSHITA', 27,
'CHEMICAL');
Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (109, 'ISHAAN', 28,
'CIVIL');
Query OK, 1 row affected (0.00 sec)
mysql> INSERT INTO STUDENT VALUES (110, 'JANU', 29, 'EEE');
Query OK, 1 row affected (0.00 sec)
TO DISPLAY ALL THE RECORDS WITH ALL THE COLUMNS
```

```
mysql> SELECT * FROM STUDENT;
+----+
```

```
FSD Training Program
+----+
 101 | ARUN | 20 | CSE |
 102 | BHAVESH | 21 | ISE |
 103 | CHAITANYA | 22 | ECE
 104 | DEEPIKA | 23 | MECH
 105 | DHANUSH | 24 | DS
 106 | EKTA | 25 | AI
| 107 | GAURAV | 26 | ARCH |
 108 | HARSHITA | 27 | CHEMICAL |
 109 | ISHAAN | 28 | CIVIL |
+----+
10 rows in set (0.00 sec)
• By default, columns will be allowing duplicate values.
mysql> INSERT INTO STUDENT VALUES (110, 'JANU', 29, 'EEE');
Query OK, 1 row affected (0.00 sec)
mysql> SELECT * FROM STUDENT;
+----+
+----+
| 101 | ARUN | 20 | CSE |
 102 | BHAVESH | 21 | ISE
 103 | CHAITANYA | 22 | ECE
```

```
104 | DEEPIKA | 23 | MECH
  105 | DHANUSH | 24 | DS
  106 | EKTA | 25 | AI
  107 | GAURAV | 26 | ARCH
  108 | HARSHITA | 27 | CHEMICAL |
  109 | ISHAAN | 28 | CIVIL
             | 29 | EEE
  110 | JANU
  110 | JANU | 29 | EEE
+----+
11 rows in set (0.00 sec)
• By default, columns will be allowing 'null' values.
• In MySQL, NULL represents an unknown or missing value in
 a database table.
mysql> INSERT INTO STUDENT(ID, FIRST NAME) VALUES(111,
'PRANAV');
Query OK, 1 row affected (0.01 sec)
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
  105 | DHANUSH | 24 | DS
```

```
106 | EKTA | 25 | AI
  107 | GAURAV | 26 | ARCH
  108 | HARSHITA | 27 | CHEMICAL |
  109 | ISHAAN | 28 | CIVIL |
  110 | JANU | 29 | EEE
  110 | JANU | 29 | EEE
  111 | PRANAV | NULL | NULL
+----+
12 rows in set (0.00 sec)
TO UPDATE SINGLE COLUMN IN THE RECORD
mysql> UPDATE STUDENT SET FIRST NAME = 'RISHI' WHERE ID =
108;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
  105 | DHANUSH | 24 | DS
```

106 | EKTA | 25 | AI

```
107 | GAURAV | 26 | ARCH |
  108 | RISHI | 27 | CHEMICAL |
  109 | ISHAAN | 28 | CIVIL |
          | 29 | EEE
  110 | JANU
              | 29 | EEE
  110 | JANU
  111 | PRANAV | NULL | NULL
+----+
12 rows in set (0.00 sec)
TO UPDATE MULTIPLE COLUMNS IN THE RECORD
mysql> UPDATE STUDENT SET ID = 112, FIRST NAME = 'RAJAT',
AGE = 29, COURSE = 'AUTOMOBILE' WHERE ID = 105;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
```

112 | RAJAT | 29 | AUTOMOBILE |

106 | EKTA | 25 | AI

107 | GAURAV | 26 | ARCH

```
108 | RISHI | 27 | CHEMICAL
 109 | ISHAAN | 28 | CIVIL
 110 | JANU | 29 | EEE
 110 | JANU | 29 | EEE
 111 | PRANAV | NULL | NULL
+----+
12 rows in set (0.00 sec)
IS NULL
mysql> UPDATE STUDENT SET AGE = 30 WHERE AGE IS NULL;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
 101 | ARUN | 20 | CSE
 102 | BHAVESH | 21 | ISE
 103 | CHAITANYA | 22 | ECE
 104 | DEEPIKA | 23 | MECH
 112 | RAJAT | 29 | AUTOMOBILE |
 106 | EKTA | 25 | AI
 107 | GAURAV | 26 | ARCH
 108 | RISHI | 27 | CHEMICAL
 109 | ISHAAN | 28 | CIVIL
```

```
FSD Training Program
  110 | JANU | 29 | EEE
  110 | JANU | 29 | EEE
  111 | PRANAV | 30 | NULL
+----+
12 rows in set (0.00 sec)
mysql> UPDATE STUDENT SET AGE = 20 WHERE FIRST NAME IS NOT
NULL;
Query OK, 11 rows affected (0.01 sec)
Rows matched: 12 Changed: 11 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 20 | ISE
  103 | CHAITANYA | 20 | ECE
  104 | DEEPIKA | 20 | MECH
  112 | RAJAT | 20 | AUTOMOBILE |
  106 | EKTA | 20 | AI
  107 | GAURAV | 20 | ARCH
  108 | RISHI | 20 | CHEMICAL
  109 | ISHAAN | 20 | CIVIL
  110 | JANU | 20 | EEE
  110 | JANU
              20 | EEE
  111 | PRANAV
              | 20 | NULL
```

```
FSD Training Program
+----+
12 rows in set (0.00 sec)
mysql> DELETE FROM STUDENT;
Query OK, 12 rows affected (0.01 sec)
INSERT INTO STUDENT VALUES (101, 'ARUN', 20, 'CSE');
INSERT INTO STUDENT VALUES (102, 'BHAVESH', 21, 'ISE');
INSERT INTO STUDENT VALUES (103, 'CHAITANYA', 22, 'ECE');
INSERT INTO STUDENT VALUES (104, 'DEEPIKA', 23, 'MECH');
INSERT INTO STUDENT VALUES (105, 'DHANUSH', 24, 'DS');
INSERT INTO STUDENT VALUES (106, 'EKTA', 25, 'AI');
INSERT INTO STUDENT VALUES (107, 'GAURAV', 26, 'ARCH');
INSERT INTO STUDENT VALUES (108, 'HARSHITA', 27,
'CHEMICAL');
INSERT INTO STUDENT VALUES (109, 'ISHAAN', 28, 'CIVIL');
INSERT INTO STUDENT VALUES (110, 'JANU', 29, 'EEE');
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
  105 | DHANUSH | 24 | DS
  106 | EKTA | 25 | AI
```

```
107 | GAURAV | 26 | ARCH |
  108 | HARSHITA | 27 | CHEMICAL |
  109 | ISHAAN | 28 | CIVIL |
  110 | JANU | 29 | EEE
+----+
10 rows in set (0.00 sec)
mysql> UPDATE STUDENT SET FIRST_NAME = 'ANANYA' WHERE ID >
104;
Query OK, 6 rows affected (0.01 sec)
Rows matched: 6 Changed: 6 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE |
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
  105 | ANANYA | 24 | DS
  106 | ANANYA | 25 | AI
  107 | ANANYA | 26 | ARCH |
  108 | ANANYA | 27 | CHEMICAL |
  109 | ANANYA | 28 | CIVIL
  110 | ANANYA | 29 | EEE
```

```
+----+
10 rows in set (0.00 sec)
mysql> UPDATE STUDENT SET AGE = 22, ID = 10 WHERE ID <=
107;
Query OK, 7 rows affected (0.00 sec)
Rows matched: 7 Changed: 7 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
  10 | ARUN | 22 | CSE |
  10 | BHAVESH | 22 | ISE
  10 | CHAITANYA | 22 | ECE
  10 | DEEPIKA | 22 | MECH |
  10 | ANANYA | 22 | DS
  10 | ANANYA | 22 | AI
 10 | ANANYA | 22 | ARCH |
 108 | ANANYA | 27 | CHEMICAL |
 109 | ANANYA | 28 | CIVIL |
 110 | ANANYA | 29 | EEE |
+----+
10 rows in set (0.00 sec)
```

mysql> UPDATE STUDENT SET AGE = 42, ID = 15;

```
Rows matched: 10 Changed: 10 Warnings: 0
mysql> SELECT * FROM STUDENT;
+----+
+----+
| 15 | ARUN | 42 | CSE |
 15 | BHAVESH | 42 | ISE
  15 | CHAITANYA | 42 | ECE
  15 | DEEPIKA | 42 | MECH
 15 | ANANYA | 42 | DS
 15 | ANANYA | 42 | AI
  15 | ANANYA | 42 | ARCH |
 15 | ANANYA | 42 | CHEMICAL |
 15 | ANANYA | 42 | CIVIL |
  15 | ANANYA | 42 | EEE
+----+
10 rows in set (0.00 sec)
mysql> DELETE FROM STUDENT;
Query OK, 10 rows affected (0.01 sec)
INSERT INTO STUDENT VALUES (101, 'ARUN', 20, 'CSE');
INSERT INTO STUDENT VALUES (102, 'BHAVESH', 21, 'ISE');
INSERT INTO STUDENT VALUES (103, 'CHAITANYA', 22, 'ECE');
INSERT INTO STUDENT VALUES (104, 'DEEPIKA', 23, 'MECH');
INSERT INTO STUDENT VALUES (105, 'DHANUSH', 24, 'DS');
```

Query OK, 10 rows affected (0.00 sec)

```
INSERT INTO STUDENT VALUES (107, 'GAURAV', 26, 'ARCH');
INSERT INTO STUDENT VALUES (108, 'HARSHITA', 27,
'CHEMICAL');
INSERT INTO STUDENT VALUES (109, 'ISHAAN', 28, 'CIVIL');
INSERT INTO STUDENT VALUES (110, 'JANU', 29, 'EEE');
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
  105 | DHANUSH | 24 | DS
  106 | EKTA | 25 | AI
  107 | GAURAV | 26 | ARCH |
  108 | HARSHITA | 27 | CHEMICAL |
  109 | ISHAAN | 28 | CIVIL |
  110 | JANU | 29 | EEE |
+----+
10 rows in set (0.00 sec)
mysql> DELETE FROM STUDENT WHERE ID = 6;
Query OK, 0 rows affected (0.00 sec)
mysql> DELETE FROM STUDENT WHERE FIRST NAME = 'ISHAAN';
```

```
Query OK, 1 row affected (0.00 sec)
mysql> SELECT * FROM STUDENT;
+----+
+----+
  101 | ARUN | 20 | CSE
  102 | BHAVESH | 21 | ISE
  103 | CHAITANYA | 22 | ECE
  104 | DEEPIKA | 23 | MECH
  105 | DHANUSH | 24 | DS
  106 | EKTA | 25 | AI
  107 | GAURAV | 26 | ARCH
  108 | HARSHITA | 27 | CHEMICAL |
  110 | JANU | 29 | EEE |
+----+
9 rows in set (0.00 sec)
mysql> DELETE FROM STUDENT;
Query OK, 9 rows affected (0.01 sec)
mysql> SELECT * FROM STUDENT;
Empty set (0.00 sec)
mysql> DROP TABLE STUDENT;
Query OK, 0 rows affected (0.02 sec)
```

```
FSD Training Program
```

```
VARCHAR(90), LAST_NAME VARCHAR(90), AGE INTEGER, SALARY
INTEGER, EMAIL VARCHAR(90));
Query OK, 0 rows affected (0.03 sec)
mysql> SELECT * FROM EMPLOYEE;
Empty set (0.00 sec)
INSERT INTO EMPLOYEE VALUES(1, 'ARUN', 'PATEL', 22,
40000, 'ARUN@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(2, 'BHAVESH', 'SHARMA', 24,
30000, 'BHAVESH@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(3, 'CHAITANYA', 'SINGH', 23,
50000, 'CHAITANYA@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(4, 'DEEPIKA', 'GUPTA', 26,
55000, 'DEEPIKA@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(5, 'DHANUSH', 'KUMAR', 25,
20000, 'DHANUSH@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(6, 'EKTA', 'YADAV', 28,
35000, 'YADAV@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(7, 'GAURAV', 'RAO', 21,
60000, 'GAURAV@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(8, 'HARSHITA', 'REDDY', 29,
56000, 'HARSHITA@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(9, 'ISHAAN', 'REDDY', 32,
70000, 'ISHAAN@GCOMPANY.IN');
INSERT INTO EMPLOYEE VALUES(10, ' JANU', ' MUKHERJEE', 30,
53000, 'JANU@GCOMPANY.IN');
```

mysql> CREATE TABLE EMPLOYEE (ID INTEGER, FIRST NAME

```
mysql> SELECT * FROM EMPLOYEE;
```

| + |    | -+- |            | -+- |           | -+ |     | + |        | + | +                     |
|---|----|-----|------------|-----|-----------|----|-----|---|--------|---|-----------------------|
| I | ID |     | FIRST_NAME | 1   | LAST_NAME |    | AGE | I | SALARY | I | EMAIL                 |
| + |    | +-  |            | +-  |           | -+ |     | + |        | + | +                     |
| 1 | 1  |     | ARUN       | 1   | PATEL     | 1  | 22  |   | 40000  |   | ARUN@GCOMPANY.IN      |
|   | 2  |     | BHAVESH    |     | SHARMA    | 1  | 24  |   | 30000  |   | BHAVESH@GCOMPANY.IN   |
| - | 3  |     | CHAITANYA  |     | SINGH     |    | 23  |   | 50000  |   | CHAITANYA@GCOMPANY.IN |
| - | 4  |     | DEEPIKA    |     | GUPTA     |    | 26  |   | 55000  |   | DEEPIKA@GCOMPANY.IN   |
| - | 5  |     | DHANUSH    |     | KUMAR     |    | 25  |   | 20000  |   | DHANUSH@GCOMPANY.IN   |
| - | 6  |     | EKTA       |     | YADAV     |    | 28  |   | 35000  |   | YADAV@GCOMPANY.IN     |
|   | 7  |     | GAURAV     |     | RAO       |    | 21  |   | 60000  |   | GAURAV@GCOMPANY.IN    |
| - | 8  |     | HARSHITA   |     | REDDY     |    | 29  |   | 56000  |   | HARSHITA@GCOMPANY.IN  |
|   | 9  |     | ISHAAN     |     | REDDY     |    | 32  |   | 70000  |   | ISHAAN@GCOMPANY.IN    |
|   | 10 |     | JANU       | 1   | MUKHERJEE |    | 30  |   | 53000  |   | JANU@GCOMPANY.IN      |
| + |    | +-  |            | +-  |           | -+ |     | + |        | + | +                     |

10 rows in set (0.00 sec)

| FSI   | ) Trai | ning Progra | am        |     |       |        |                       |   |  |
|---|--------|-------------|-----------|-----|-------|--------|-----------------------|---|--|
| 1   | 6      | EKTA        | YADAV     |     | 28    | 35000  | YADAV@GCOMPANY.IN     | 1 |  |
|   | 7      | GAURAV      | RAO       |     | 21    | 60000  | GAURAV@GCOMPANY.IN    |   |  |
|   | 8      | HARSHITA    | REDDY     |     | 29    | 56000  | HARSHITA@GCOMPANY.IN  |   |  |
|   | 9      | ISHAAN      | REDDY     |     | 32    | 70000  | ISHAAN@GCOMPANY.IN    |   |  |
|   | 10     | JANU        | MUKHERJEE | I   | 30    | 53000  | JANU@GCOMPANY.IN      | I |  |
| <pre>tttttttt 5 rows in set (0.00 sec)  mysql&gt; SELECT * FROM EMPLOYEE WHERE AGE BETWEEN 22 AND 28;</pre> |        |             |           |     |       |        |                       |   |  |
| +   | )      | FIRST_NAME  | LAST_NAME | AGE | :   S | ALARY  | EMAIL                 | + |  |
|   | 1      | ARUN        |           |     |       |        | ARUN@GCOMPANY.IN      | 1 |  |
|   | 2      | BHAVESH     | SHARMA    | 2   | 4     | 30000  | BHAVESH@GCOMPANY.IN   | 1 |  |
|   | 3      | CHAITANYA   | SINGH     | 2   | 3     | 50000  | CHAITANYA@GCOMPANY.IN | 1 |  |
|   | 4      | DEEPIKA     | GUPTA     | 2   | 6     | 55000  | DEEPIKA@GCOMPANY.IN   | 1 |  |
|   | 5      | DHANUSH     | KUMAR     | 2   | .5    | 20000  | DHANUSH@GCOMPANY.IN   |   |  |
| 1   | 6      | EKTA        | YADAV     | 2   | .8    | 35000  | YADAV@GCOMPANY.IN     | I |  |
| <pre>tt</pre>   |        |             |           |     |       |        |                       |   |  |
| -   | )      | FIRST_NAME  | LAST_NAME | AG  | iE    | SALARY |                       |   |  |
|   |        |             |           |     |       |        | GAURAV@GCOMPANY.IN    |   |  |
| 1   | 8      | HARSHITA    | REDDY     |     | 29    | 56000  | HARSHITA@GCOMPANY.IN  |   |  |
| 1   | 9      | ISHAAN      | REDDY     | 1   | 32    | 70000  | ISHAAN@GCOMPANY.IN    |   |  |
| 1   | 10     | JANU        | MUKHERJEE |     | 30    | 53000  | JANU@GCOMPANY.IN      |   |  |
|   |        |             |           |     |       |        |                       |   |  |

<sup>4</sup> rows in set (0.00 sec)

```
mysql> SELECT * FROM EMPLOYEE WHERE SALARY IN (40000,
55000, 70000);
1 | ARUN | PATEL | 22 | 40000 | ARUN@GCOMPANY.IN |
 4 | DEEPIKA | GUPTA | 26 | 55000 | DEEPIKA@GCOMPANY.IN |
  9 | ISHAAN | REDDY | 32 | 70000 | ISHAAN@GCOMPANY.IN |
+----+
3 rows in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE WHERE SALARY NOT IN (40000,
55000, 70000);
+----+
+----+
  2 | BHAVESH | SHARMA | 24 | 30000 | BHAVESH@GCOMPANY.IN |
 3 | CHAITANYA | SINGH | 23 | 50000 | CHAITANYA@GCOMPANY.IN |
  5 | DHANUSH | KUMAR | 25 | 20000 | DHANUSH@GCOMPANY.IN
6 | EKTA | YADAV | 28 | 35000 | YADAV@GCOMPANY.IN
7 | GAURAV | RAO | 21 | 60000 | GAURAV@GCOMPANY.IN
 8 | HARSHITA | REDDY | 29 | 56000 | HARSHITA@GCOMPANY.IN |
 10 | JANU | MUKHERJEE | 30 | 53000 | JANU@GCOMPANY.IN |
7 rows in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE WHERE FIRST_NAME LIKE '%R%';
+----+
1 | ARUN | PATEL | 22 | 40000 | ARUN@GCOMPANY.IN |
```

```
7 | GAURAV | RAO | 21 | 60000 | GAURAV@GCOMPANY.IN |
  8 | HARSHITA | REDDY | 29 | 56000 | HARSHITA@GCOMPANY.IN |
+----+
3 rows in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE WHERE FIRST NAME LIKE '%A';
3 | CHAITANYA | SINGH | 23 | 50000 | CHAITANYA@GCOMPANY.IN |
 4 | DEEPIKA | GUPTA | 26 | 55000 | DEEPIKA@GCOMPANY.IN |
  6 | EKTA | YADAV | 28 | 35000 | YADAV@GCOMPANY.IN
  8 | HARSHITA | REDDY | 29 | 56000 | HARSHITA@GCOMPANY.IN |
4 rows in set (0.00 sec)
mysql> SELECT FIRST NAME, AGE FROM EMPLOYEE;
+-----+
| FIRST NAME | AGE |
+----+
  ARUN | 22 |
  BHAVESH 24
  CHAITANYA | 23 |
  DEEPIKA | 26 |
  DHANUSH | 25 |
  EKTA | 28 |
  GAURAV | 21 |
  HARSHITA | 29 |
  ISHAAN | 32 |
  JANU | 30 |
+-----+
```

```
FSD Training Program
10 rows in set (0.00 sec)
mysql> SELECT FIRST NAME, AGE, EMAIL FROM EMPLOYEE;
+----+
| FIRST NAME | AGE | EMAIL
 -----
 ARUN | 22 | ARUN@GCOMPANY.IN
 BHAVESH | 24 | BHAVESH@GCOMPANY.IN
  CHAITANYA | 23 | CHAITANYA@GCOMPANY.IN |
  DEEPIKA | 26 | DEEPIKA@GCOMPANY.IN
  DHANUSH | 25 | DHANUSH@GCOMPANY.IN
  EKTA | 28 | YADAV@GCOMPANY.IN
  GAURAV | 21 | GAURAV@GCOMPANY.IN
  HARSHITA | 29 | HARSHITA@GCOMPANY.IN
  ISHAAN | 32 | ISHAAN@GCOMPANY.IN
  JANU | 30 | JANU@GCOMPANY.IN
-----
10 rows in set (0.00 sec)
mysql> SELECT FIRST_NAME AS NAME, AGE AS EMPLOYEE_AGE,
LAST_NAME FROM EMPLOYEE;
-----+
NAME | EMPLOYEE AGE | LAST NAME |
+----+
 ARUN
                 22 | PATEL
                 24 | SHARMA
  BHAVESH
```

23 | SINGH

CHAITANYA |

| FSD Training Program |                           |              |       |            |                    |  |  |  |  |  |
|----------------------|---------------------------|--------------|-------|------------|--------------------|--|--|--|--|--|
|                      | DEEPIKA                   |              | 26    | GUPTA      | 1                  |  |  |  |  |  |
|                      | DHANUSH                   |              | 25    | KUMAR      | 1                  |  |  |  |  |  |
|                      | EKTA                      |              | 28    | YADAV      | 1                  |  |  |  |  |  |
|                      | GAURAV                    |              | 21    | RAO        | 1                  |  |  |  |  |  |
|                      | HARSHITA                  |              | 29    | REDDY      | 1                  |  |  |  |  |  |
|                      | ISHAAN                    |              | 32    | REDDY      | 1                  |  |  |  |  |  |
|                      | JANU                      |              | 30    | MUKHERJEE  | 1                  |  |  |  |  |  |
| +-                   |                           | -+           | +-    |            | -+                 |  |  |  |  |  |
| 10                   | rows in se                | et (0.00 sec | )     |            |                    |  |  |  |  |  |
|                      |                           |              |       |            |                    |  |  |  |  |  |
| my                   | sql> SELEC                | T FIRST_NAME | NAME, | AGE EMPLOY | /EE_AGE, LAST_NAME |  |  |  |  |  |
| FR                   | OM EMPLOYEI               | Ξ;           |       |            |                    |  |  |  |  |  |
| +-                   |                           | - <b>+</b>   | _     |            | -+                 |  |  |  |  |  |
|                      | NAME                      | EMPLOYEE_/   | AGE   | LAST_NAME  | 1                  |  |  |  |  |  |
| +-                   |                           | -+           | _     |            | -+                 |  |  |  |  |  |
|                      | ARUN                      |              | 22    | PATEL      | 1                  |  |  |  |  |  |
|                      | BHAVESH                   |              | 24    | SHARMA     | 1                  |  |  |  |  |  |
|                      | CHAITANYA                 |              | 23    | SINGH      | 1                  |  |  |  |  |  |
|                      | DEEPIKA                   |              | 26    | GUPTA      |                    |  |  |  |  |  |
|                      | DHANUSH                   |              | 25    | KUMAR      |                    |  |  |  |  |  |
|                      | EKTA                      |              | 28    | YADAV      | 1                  |  |  |  |  |  |
|                      | GAURAV                    |              | 21    | RAO        | 1                  |  |  |  |  |  |
|                      | HARSHITA                  |              | 29    | REDDY      | 1                  |  |  |  |  |  |
|                      | ISHAAN                    |              | 32    | REDDY      | 1                  |  |  |  |  |  |
|                      | JANU                      |              | 30    | MUKHERJEE  | 1                  |  |  |  |  |  |
| +-                   | ++                        |              |       |            |                    |  |  |  |  |  |
| 10                   | 10 rows in set (0.00 sec) |              |       |            |                    |  |  |  |  |  |

```
mysql> SELECT COUNT(*) FROM EMPLOYEE;
+----+
| COUNT(*) |
+----+
      10
+----+
1 row in set (0.01 sec)
mysql> SELECT COUNT(*) AS "RECORDS COUNT" FROM EMPLOYEE;
+----+
| RECORDS COUNT |
+----+
           10 l
+----+
1 row in set (0.00 sec)
mysql> SELECT COUNT(*) "RECORDS COUNT" FROM EMPLOYEE;
+----+
| RECORDS COUNT |
+----+
          10
+----+
1 row in set (0.00 sec)
mysql> SELECT COUNT(AGE) "AGE COLUMN COUNT" FROM EMPLOYEE;
+----+
AGE COLUMN COUNT
```

```
FSD Training Program
           10
+----+
1 row in set (0.00 sec)
mysql> SELECT COUNT(LAST_NAME) "RECORDS COUNT" FROM
EMPLOYEE;
+----+
| RECORDS COUNT |
+----+
           10 l
+----+
1 row in set (0.01 sec)
mysql> SELECT MAX(AGE) FROM EMPLOYEE;
+----+
| MAX(AGE) |
+----+
      32
+----+
1 row in set (0.00 sec)
mysql> SELECT MAX(AGE) AS "MAX AGE" FROM EMPLOYEE;
+----+
MAX AGE
+----+
     32
+----+
```

```
FSD Training Program
1 row in set (0.00 sec)
mysql> SELECT MIN(SALARY) FROM EMPLOYEE;
+----+
| MIN(SALARY) |
+----+
       20000
+----+
1 row in set (0.00 sec)
mysql> SELECT MIN(SALARY) MIN_SAL FROM EMPLOYEE;
+----+
MIN_SAL |
+----+
   20000
+----+
1 row in set (0.00 sec)
mysql> SELECT MIN(SALARY) "MIN SAL" FROM EMPLOYEE;
+----+
MIN SAL
+----+
   20000
+----+
1 row in set (0.00 sec)
mysql> SELECT AVG(SALARY) FROM EMPLOYEE;
+----+
AVG(SALARY)
```

```
FSD Training Program
+----+
  46900.0000
+----+
1 row in set (0.00 sec)
mysql> SELECT AVG(SALARY) "AVG SALARY" FROM EMPLOYEE;
+----+
AVG SALARY
+----+
46900.0000
+----+
1 row in set (0.00 sec)
mysql> SELECT AVG(AGE) "AVG AGE" FROM EMPLOYEE;
+----+
AVG AGE
+----+
26.0000
+----+
1 row in set (0.00 sec)
mysql> SELECT MIN(FIRST_NAME) FROM EMPLOYEE;
+----+
| MIN(FIRST_NAME) |
+----+
  ARUN
+----+
1 row in set (0.00 sec)
mysql> SELECT MAX(FIRST_NAME) FROM EMPLOYEE;
+----+
```

```
| MAX(FIRST NAME) |
  JANU
+----+
1 row in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE ORDER BY FIRST NAME;
- ORDER BY in MySQL is like telling the database how you
want your results to be arranged or sorted when you
retrieve them from a table.
- It is commonly used in conjunction with the SELECT
statement.
-----+-----+
ID | FIRST_NAME | LAST_NAME | AGE | SALARY | EMAIL
+----+
   1 ARUN
         PATEL | 22 | 40000 | ARUN@GCOMPANY.IN
   2 | BHAVESH | SHARMA | 24 | 30000 | BHAVESH@GCOMPANY.IN
   3 | CHAITANYA | SINGH | 23 | 50000 | CHAITANYA@GCOMPANY.IN |
   4 | DEEPIKA | GUPTA
                     | 26 | 55000 | DEEPIKA@GCOMPANY.IN
   5 DHANUSH KUMAR
                     25 | 20000 | DHANUSH@GCOMPANY.IN
   6 | EKTA
         YADAV
                     28 | 35000 | YADAV@GCOMPANY.IN
   7 | GAURAV | RAO
                     21 | 60000 | GAURAV@GCOMPANY.IN
   8 | HARSHITA | REDDY
                    | 29 | 56000 | HARSHITA@GCOMPANY.IN
   9 | ISHAAN | REDDY | 32 | 70000 | ISHAAN@GCOMPANY.IN
  10 | JANU
            | MUKHERJEE | 30 | 53000 | JANU@GCOMPANY.IN
 10 rows in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE ORDER BY FIRST_NAME ASC;
 PATEL | 22 | 40000 | ARUN@GCOMPANY.IN
   1 ARUN
   2 | BHAVESH | SHARMA | 24 | 30000 | BHAVESH@GCOMPANY.IN
```

```
3 | CHAITANYA | SINGH
                     23 | 50000 | CHAITANYA@GCOMPANY.IN |
                     26 | 55000 | DEEPIKA@GCOMPANY.IN
  4 | DEEPIKA | GUPTA
  5 DHANUSH KUMAR
                     25 | 20000 | DHANUSH@GCOMPANY.IN
                     28 | 35000 | YADAV@GCOMPANY.IN
  6 | EKTA | YADAV
  7 | GAURAV | RAO
                     21 | 60000 | GAURAV@GCOMPANY.IN
  8 | HARSHITA | REDDY |
                     29 | 56000 | HARSHITA@GCOMPANY.IN
  9 | ISHAAN | REDDY | 32 | 70000 | ISHAAN@GCOMPANY.IN
        | MUKHERJEE | 30 | 53000 | JANU@GCOMPANY.IN
  10 | JANU
10 rows in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE ORDER BY FIRST NAME DESC;
10 | JANU | MUKHERJEE | 30 | 53000 | JANU@GCOMPANY.IN
  9 | ISHAAN | REDDY | 32 | 70000 | ISHAAN@GCOMPANY.IN
   8 | HARSHITA | REDDY | 29 | 56000 | HARSHITA@GCOMPANY.IN
   7 | GAURAV | RAO | 21 | 60000 | GAURAV@GCOMPANY.IN
   6
     EKTA | YADAV | 28 | 35000 | YADAV@GCOMPANY.IN
     DHANUSH | KUMAR | 25 | 20000 | DHANUSH@GCOMPANY.IN
   5
   4 | DEEPIKA | GUPTA | 26 | 55000 | DEEPIKA@GCOMPANY.IN
   3 | CHAITANYA | SINGH | 23 | 50000 | CHAITANYA@GCOMPANY.IN |
   2 | BHAVESH | SHARMA | 24 | 30000 | BHAVESH@GCOMPANY.IN
   1 ARUN
           | PATEL | 22 | 40000 | ARUN@GCOMPANY.IN
 ----+-----+------+
10 rows in set (0.00 sec)
mysql> SELECT * FROM EMPLOYEE ORDER BY AGE;
7 | GAURAV | RAO | 21 | 60000 | GAURAV@GCOMPANY.IN
      ARUN | PATEL | 22 | 40000 | ARUN@GCOMPANY.IN
```