

# **Experiment No.02**

## **PART A**

(PART A: TO BE REFERRED BY STUDENTS)

**A.1 Aim:** To study about MySQL database and implement basic and DDL commands in SQL

**A.2 Prerequisite:** -

**A.3 Outcome:**

After successful completion of this experiment students will be able to

1. Learn how to start and use MySQL
2. Obtain help in MySQL
3. Load a database in MySQL
4. Familiarity with MySQL command line and workbench

**A.4 Theory:**

MySQL is one of the most popular Open Source SQL database management systems. The MySQL Web site (<http://www.mysql.com/>) provides the latest information about MySQL database management system. It is important to note that MySQL is an open source database and is continually under development. Each version and sub-version may implement SQL syntax differently and changes are being made constantly. There are also problems with upward compatibility between different versions. For example some SQL operations that work in versions 3.0 and 4.0 do not work in version 5.0. Furthermore, different variants of a version are released in response to bugs that have been found by database developers who are using the latest versions in their work. If an SQL command does not work as expected, please consult the MySQL web site for more information.

You must obtain a user ID and a password created by your database administrator in order to log on to the MySQL RDBMS. To start MySQL, run the MySQL Command Line Client and enter the password.

- **Data Definition in SQL**

Before creating any tables, MySQL requires you to create a database by executing the **CREATE DATABASE** command.

- Create a database

CREATE DATABASE <database name>

- Delete a database

DROP DATABASE <database name>

- Select the database

USE <database name>

- List all databases

SHOW databases;

- Rename a database

ALTER DATABASE <database name> RENAME <new database name>

## **CREATE, ALTER and DROP**

table.....relation

row.....tuple

column.....attribute

Here are the most common Data types:

char(size)	Fixed-length character string. Size is specified in parenthesis. Max 255 bytes.
varchar(size)	Variable-length character string. Max size is specified in parenthesis.
number(size) /int	Number value with a max number of column digits specified in parenthesis.
date	Date value
number(size,d)	Number value with a maximum number of digits of "size" total, with a maximum number of "d" digits to the right of the decimal.

## **Create Table:**

CREATE TABLE table\_name (

column\_1 data\_type PRIMARY KEY,

column\_2 data\_type NOT NULL,

column\_3 data\_type DEFAULT 0,

table\_constraints

)

- Specify the name of the table that you want to create after the CREATE TABLE keywords.
- Use IF NOT EXISTS option to create a new table if it does not exist. Attempting to create a table that already exists without using the IF NOT EXISTS option will result in an error.
- Specify the column list of the table. Each column has a name, data type, and the column constraint. SQLite supports PRIMARY KEY, UNIQUE, NOT NULL, and CHECK column constraints.
- Specify the table constraints such as PRIMARY KEY, FOREIGN KEY, UNIQUE, and CHECK constraints.
- The primary key of a table is a column or a group of columns that uniquely identify each row in the tab

## **Constraints:**

- Primary key A PRIMARY KEY constraint for a table enforces the table to accept unique data for a

specific column and this constraint create a unique index for accessing the table faster

- UNIQUE The UNIQUE constraint in Mysql does not allow to insert a duplicate value in a column.
- NOT NULL In Mysql NOT NULL constraint allows to specify that a column can not contain any NULL value.
- FOREIGN KEY A FOREIGN KEY in mysql creates a link between two tables by one specific column of both table. The specified column in one table must be a PRIMARY KEY and referred by the column of another table known as FOREIGN KEY.
- CHECK The CHECK constraint determines whether the value is valid or not from a logical expression.
- DEFAULT While inserting data into a table, if no value is supplied to a column, then the column gets the value set as DEFAULT

## A.5 Tasks

### Task1: Simple SQL command

1. SELECT VERSION(), CURRENT\_DATE;
2. Select user();

### Task 2: Create database: Programme name\_Rollno Eg: BTech\_I001 and use it

#### Task 3: Create following tables:

1. **category\_header :** cat\_code number(5), cat\_desc varchar(20), **cat\_code will be primary key**
2. **route\_header:** route\_id number(5), route\_no number(5), cat\_code number(5), origin varchar(20), destination varchar(20), fare number(7,2), distance number(3), capacity number(3) , **cat\_code will be foreign key, route\_id will be primary key**
3. **place\_header:** place\_id number(5), place\_name varchar(20), place\_address varchar(50), bus\_station varchar(10), **place\_id will be primary key, place\_name not null**
4. **fleet\_header:** fleet\_id number(5), day date, route\_id number(5), cat\_code number(5), **fleet\_id primary key, route\_id foreign key, cat\_code foreign key**
5. **ticket\_header:** fleet\_id number(5), ticket\_no number(5), doi date, dot date, time\_travel char(8), board\_place varchar(20), origin varchar(40), destination varchar(40), adult number(3), children number(3), total\_fare number(7,2), route\_id number(5)  
**fleet\_id foreign key, ticket\_no primary key, doi- not null, dot-not null, route\_id – foreign key**
6. **ticket\_detail:** ticket\_no number(5), name varchar(20), sex char(1), age number(3), fare number(5,2)
7. **route\_detail:** route\_id number(5), place\_id number(5), nonstop char(1)

#### **Task 4: Solve below queries after creating tables:**

1. Write a query to increase size of category description column in category header table from varchar(20) to varchar(50).
2. Create a table Student\_MPSTME with columns student number, student name, student address, student phone number with appropriate data types.
3. Write a query to add primary key column to above created Student\_MPSTME table.
4. Write a query to create new table Student\_NMIMS with columns Student number, Student name selected from table Student\_MPSTME.
5. Write a query to rename Student\_MPSTME table to Stu\_MPSTME.
6. Write a query to add birth date column to stu\_MPSTME table.
7. Write a query to delete column student phone number from Stu\_MPSTME table.
8. Write a query to delete Stu\_MPSTME table.
9. Insert data into the Tables as shown below:

The screenshot shows a Microsoft Word document with the following content:

6. **ticket\_detail:** ticket\_no number(5), name varchar(20), sex char(1), age number(3),  
number(5,2)

7. **route\_detail:** route\_id number(5), place\_id number(5), nonstop char(1)

**Solve below queries after creating tables:**

2. Insert data into the tables as shown below

**category\_header**

Cat_code	Cate_desc
01	super delux
02	delux
03	super fast
04	normal

**route\_header**

1689 words English (United States) Accessibility: Investigate

A screenshot of a Microsoft Word document showing a table of route data. The table has 9 columns: Route\_id, Route\_no, Cate\_code, Origin, Destination, Fare, Distance, and Capacity. The data is as follows:

Route_id	Route_no	Cate_code	Origin	Destination	Fare	Distance	Capacity
101	33	01	Madurai	Madras	35	250	50
102	25	02	Trichy	Madurai	40	159	50
103	15	03	Thanjavur	Madurai	59	140	50
104	36	04	Madras	Banglore	79	375	50
105	40	01	Banglore	Madras	80	375	50
106	38	02	Madras	Madurai	39	250	50
107	39	03	Hydrabad	Madras	50	430	50
108	41	04	Madras	Cochin	47	576	50

Place Header:

10.

## PART B

(PART B: TO BE COMPLETED BY STUDENTS)

**(Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the portal provided by the instructor)**

Roll No. I066	Name: Srihari Thyagarajan
Program : B Tech AI	Division: I
Batch: B3	Date of Experiment: 22/ 07/ 2022
Date of Submission:	Grade :

## B.1 Tasks given in PART A to be completed here

Task 1:

```
mysql> Show DATABASES;
+-----+
| Database      |
+-----+
| firstmysqldatabase |
| information_schema |
| mysql          |
| performance_schema |
| sakila         |
| sys            |
| world          |
+-----+
7 rows in set (0.03 sec)

mysql> SELECT VERSION();
+-----+
| VERSION() |
+-----+
| 8.0.29    |
+-----+
1 row in set (0.00 sec)

mysql> SELECT current_date();
+-----+
| current_date() |
+-----+
| 2022-07-22    |
+-----+
1 row in set (0.00 sec)
```

Task 2:

```
mysql> CREATE DATABASE B_Tech_I066;
Query OK, 1 row affected (0.02 sec)

mysql> SHOW DATABASES;
+-----+
| Database      |
+-----+
| b_tech_i066   |
| firstmysqldatabase |
| information_schema |
| mysql          |
| performance_schema |
| sakila         |
| sys            |
| world          |
+-----+
8 rows in set (0.00 sec)

mysql> SHOW TABLES;
ERROR 1046 (3D000): No database selected
mysql> USE b_tech_i066;
Database changed
mysql> SHOW TABLES;
Empty set (0.02 sec)
```

Task 3:

1. create table if not exists category\_header( cat\_code int primary key, cat\_desc varchar(20));

```
mysql> CREATE TABLE IF NOT EXISTS category_header(cat_code int PRIMARY KEY, cat_desc VARCHAR(20));
Query OK, 0 rows affected (0.03 sec)

mysql> DESC category_header;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| cat_code | int    | NO   | PRI | NULL    |       |
| cat_desc | varchar(20) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> -
```

2. create table if not exists route\_header(route\_id int primary key, route\_no int, cat\_code int, origin varchar(20), destination varchar(20), fare real(7,2), distance int, capacity int, foreign key(cat\_code) references category\_header(cat\_code));

```
mysql> CREATE TABLE IF NOT EXISTS route_header(route_id int PRIMARY KEY, route_no int, cat_code int, origin VARCHAR(20), Destination VARCHAR(20), fare real(7, 2), distance int, capacity int, foreign key(cat_code)
references category_header(cat_code));
Query OK, 0 rows affected, 1 warning (0.03 sec)

mysql> desc route_header;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| route_id | int    | NO   | PRI | NULL    |       |
| route_no | int    | YES  |     | NULL    |       |
| cat_code | int    | YES  | MUL | NULL    |       |
| origin | varchar(20) | YES  |     | NULL    |       |
| Destination | varchar(20) | YES  |     | NULL    |       |
| fare | double(7,2) | YES  |     | NULL    |       |
| distance | int    | YES  |     | NULL    |       |
| capacity | int    | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql>
```

3. create table if not exists place\_header( place\_id int primary key, place\_name varchar(20) not null, place\_address varchar(50), bus\_station varchar(10));

```
mysql> CREATE TABLE IF NOT EXISTS place_header(place_id int PRIMARY KEY, place_name VARCHAR(20) not null, place_address VARCHAR(50), bus_station VARCHAR(10));
Query OK, 0 rows affected (0.01 sec)

mysql> DESC place_header;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| place_id | int    | NO   | PRI | NULL    |       |
| place_name | varchar(20) | NO   |     | NULL    |       |
| place_address | varchar(50) | YES  |     | NULL    |       |
| bus_station | varchar(10) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

4. create table if not exists fleet\_header (fleet\_id int primary key, route\_id int, cat\_code int, day date, foreign key(route\_id) references route\_header(route\_id), foreign key(cat\_code) references category\_header(cat\_code));

```
mysql> DESC fleet_header;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| fleet_id | int | NO | PRI | NULL |
| route_id | int | YES | MUL | NULL |
| cat_code | int | YES | MUL | NULL |
| day | date | YES | | NULL |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

5. create table if not exists ticket\_header(fleet\_id int, ticket\_no int primary key, doi date not null, dot date not null, time\_travel char(8), board\_place varchar(20), origin varchar(20), destination varchar(20), adult int, children int, total\_fare real(7,2), route\_id int, foreign key(route\_id) references route\_header(route\_id), foreign key(fleet\_id) references fleet\_header(fleet\_id));

```
mysql> DESC ticket_header;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| fleet_id | int | YES | MUL | NULL |
| ticket_no | int | NO | PRI | NULL |
| doi | date | NO | | NULL |
| dot | date | NO | | NULL |
| time_travel | char(8) | YES | | NULL |
| board_place | varchar(20) | YES | | NULL |
| origin | varchar(20) | YES | | NULL |
| destination | varchar(20) | YES | | NULL |
| adult | int | YES | | NULL |
| children | int | YES | | NULL |
| total_fare | double(7,2) | YES | | NULL |
| route_id | int | YES | MUL | NULL |
+-----+-----+-----+-----+
12 rows in set (0.00 sec)
```

6. create table if not exists ticket\_detail( ticket\_no int, name varchar(20), sex char(1), age int, fare real(5,2));

```
mysql> DESC ticket_detail;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| ticket_no | int    | YES  |     | NULL    |       |
| name      | varchar(20) | YES  |     | NULL    |       |
| sex       | char(1)  | YES  |     | NULL    |       |
| age       | int     | YES  |     | NULL    |       |
| fare      | double(5,2) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

7. create table if not exists route\_detail(route\_id int, place\_id int, nonstop char(1));

```
mysql> DESC route_detail;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| route_id | int    | YES  |     | NULL    |       |
| place_id | int    | YES  |     | NULL    |       |
| nonstop  | char(1) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> SHOW TABLES;
+-----+
| Tables_in_b_tech_i066 |
+-----+
| category_header
| fleet_header
| place_header
| route_detail
| route_header
| ticket_detail
| ticket_header
+-----+
7 rows in set (0.00 sec)
```

Task 4:

1. alter table category\_header

```
-> Modify column cat_desc VARCHAR(50);
```

```
mysql> alter table category_header
      -> Modify column cat_desc VARCHAR(50);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> DESC category_header;
+-----+-----+-----+-----+-----+
| Field | Type       | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| cat_code | int        | NO   | PRI | NULL    |       |
| cat_desc | varchar(50) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

2. create table STUDENT\_MPSTME(STUDENT\_NUMBER int not null, STUDENT\_NAME VARCHAR(40), STUDENT\_ADDRESS VARCHAR(50), STUDENT\_PHONENO CHAR(10));

```
mysql> create table STUDENT_MPSTME(STUDENT_NUMBER int not null, STUDENT_NAME VARCHAR(40), STUDENT_ADDRESS VARCHAR(50), STUDENT_PHONENO CHAR(10));
Query OK, 0 rows affected (0.01 sec)
```

3. ALTER TABLE student\_mpstme

```
-> ADD PRIMARY KEY(STUDENT_NUMBER);
```

```
mysql> DESC student_mpstme;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| STUDENT_NUMBER | int | NO | | NULL | |
| STUDENT_NAME | varchar(40) | YES | | NULL | |
| STUDENT_ADDRESS | varchar(50) | YES | | NULL | |
| STUDENT_PHONENO | char(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> ALTER TABLE student_mpstme
-> ADD PRIMARY KEY(STUDENT_NUMBER);
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESC student_mpstme;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| STUDENT_NUMBER | int | NO | PRI | NULL | |
| STUDENT_NAME | varchar(40) | YES | | NULL | |
| STUDENT_ADDRESS | varchar(50) | YES | | NULL | |
| STUDENT_PHONENO | char(10) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> ■
```

4. create table STUDENT\_NMIMS(STUDENT\_NUMBER int not null, STUDENT\_NAME VARCHAR(40));

```

mysql> create table STUDENT_NMIMS(STUDENT_NUMBER int not null, STUDENT_NAME VARCHAR(40));
Query OK, 0 rows affected (0.01 sec)

mysql> DESC STUDENT_NMIMS;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| STUDENT_NUMBER | int    | NO   |     | NULL    |       |
| STUDENT_NAME   | varchar(40) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> ALTER TABLE STUDENT_NMIMS
      -> ADD FOREIGN KEY(STUDENT_NUMBER) REFERENCES STUDENT_MPSTME(STUDENT_NUMBER);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE STUDENT_NMIMS
      -> ADD FOREIGN KEY(STUDENT_NAME) REFERENCES STUDENT_MPSTME(STUDENT_NAME);

```

5. RENAME TABLE STUDENT\_MPSTME TO STU\_MPSTME;

```

mysql> RENAME TABLE STUDENT_MPSTME TO STU_MPSTME;
Query OK, 0 rows affected (0.01 sec)

```

```

mysql> SHOW TABLES;
+-----+
| Tables_in_b_tech_i066 |
+-----+
| category_header        |
| fleet_header           |
| place_header           |
| route_detail           |
| route_header           |
| stu_mpstme             |
| student_nmims          |
| ticket_detail          |
| ticket_header           |
+-----+
9 rows in set (0.00 sec)

```

6. ALTER TABLE STU\_MPSTME  
7.     -> ADD birth\_date DATETIME;

```

-> ADD birth_date DATETIME;
```

```
mysql> ALTER TABLE STU_MPSTME
      -> ADD birth_date DATETIME;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> DESC STU_MPSTME;
+-----+-----+-----+-----+-----+
| Field        | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| STUDENT_NUMBER | int       | NO   | PRI | NULL    |       |
| STUDENT_NAME   | varchar(40) | YES  |     | NULL    |       |
| STUDENT_ADDRESS | varchar(50) | YES  |     | NULL    |       |
| STUDENT_PHONENO | char(10)  | YES  |     | NULL    |       |
| birth_date     | datetime   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

8.  
9. ALTER TABLE STU\_MPSTME  
10. -> DROP COLUMN STUDENT\_PHONENO;

```
mysql> ALTER TABLE STU_MPSTME
      -> DROP COLUMN STUDENT_PHONENO;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> DESC STU_MPSTME;
+-----+-----+-----+-----+-----+
| Field        | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| STUDENT_NUMBER | int       | NO   | PRI | NULL    |       |
| STUDENT_NAME   | varchar(40) | YES  |     | NULL    |       |
| STUDENT_ADDRESS | varchar(50) | YES  |     | NULL    |       |
| birth_date     | datetime   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

11.  
12. DROP TABLE STU\_MPSTME;

13 . Adding values to the tables - category\_header and route\_header:

- Category Header

```
mysql> INSERT INTO category_header VALUES(01, 'super deluxe');

mysql> INSERT INTO category_header VALUES(02, 'deluxe');

mysql> INSERT INTO category_header VALUES(03, 'super fast');

mysql> INSERT INTO category_header VALUES(04, 'normal');
```

```
mysql> USE B_TECH_I066;
Database changed
mysql> SHOW TABLES;
+-----+
| Tables_in_b_tech_i066 |
+-----+
| category_header
| fleet_header
| plane_header
| route_detail
| route_header
| stu_mstme
| student_nmims
| ticket_detail
| ticket_header
+-----+
9 rows in set (0.01 sec)

mysql> DESC category_header;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| cat_code | int    | NO   | PRI | NULL    |
| cat_desc | varchar(50) | YES  |     | NULL    |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> INSERT INTO category_header VALUES(01, 'super deluxe');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO category_header VALUES(02, 'deluxe');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO category_header VALUES(03, 'super fast');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO category_header VALUES(04, 'normal');
Query OK, 1 row affected (0.00 sec)

mysql> DESC category_header;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| cat_code | int    | NO   | PRI | NULL    |
| cat_desc | varchar(50) | YES  |     | NULL    |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM category_header;
+-----+-----+
| cat_code | cat_desc      |
+-----+-----+
| 1       | super deluxe  |
| 2       | deluxe        |
| 3       | super fast    |
| 4       | normal         |
+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql>
```

- Route Header:

```
mysql> INSERT INTO route_header VALUES(101, 33, 01, 'Madurai', 'Madras', 35, 250, 50);
mysql> INSERT INTO route_header VALUES(102, 25, 02, 'Trichy', 'Madurai', 40, 159, 50);
mysql> INSERT INTO route_header VALUES(103, 15, 03, 'Thanjavur', 'Madurai', 59, 140, 50);
mysql> INSERT INTO route_header VALUES(104, 36, 04, 'Madras', 'Bangalore', 79, 375, 50);
mysql> INSERT INTO route_header VALUES(105, 40, 01, 'Bangalore', 'Madras', 80, 375, 50);
mysql> INSERT INTO route_header VALUES(106, 38, 02, 'Madras', 'Madurai', 39, 250, 50);
mysql> INSERT INTO route_header VALUES(107, 39, 03, 'Hyderabad', 'Madras', 50, 430, 50);
mysql> INSERT INTO route_header VALUES(108, 41, 04, 'Madras', 'Cochin ', 47, 576, 50);
```

```

mysql> DESC route_header;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| route_id | int   | NO   | PRI | NULL    |       |
| route_no | int   | YES  |     | NULL    |       |
| cat_code | int   | YES  | MUL | NULL    |       |
| origin   | varchar(20) | YES  |     | NULL    |       |
| destination | varchar(20) | YES  |     | NULL    |       |
| fare     | double(7,2)  | YES  |     | NULL    |       |
| distance | int   | YES  |     | NULL    |       |
| capacity | int   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

mysql> INSERT INTO route_header VALUES(101, 33, 01, 'Madurai', 'Madras', 35, 250, 50);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO route_header VALUES(102, 25, 02, 'Trichy', 'Madurai', 40, 159, 50);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO route_header VALUES(103, 15, 03, 'Thanjavur', 'Madurai', 59, 140, 50);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO route_header VALUES(104, 36, 04, 'Madras', 'Bangalore', 79, 375, 50);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO route_header VALUES(105, 40, 01, 'Banagalore', 'Madras', 80, 375, 50);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO route_header VALUES(106, 38, 02, 'Madras', 'Madurai', 39, 250, 50);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO route_header VALUES(107, 39, 03, 'Hyderabad', 'Madras', 50, 430, 50);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO route_header VALUES(108, 41, 04, 'Madras', 'Cochin', 47, 576, 50);
Query OK, 1 row affected (0.00 sec)

```

```

mysql> SELECT * FROM route_header;
+-----+-----+-----+-----+-----+-----+-----+-----+
| route_id | route_no | cat_code | origin   | destination | fare   | distance | capacity |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 101 | 33 | 1 | Madurai | Madras | 35.00 | 250 | 50 |
| 102 | 25 | 2 | Trichy  | Madurai | 40.00 | 159 | 50 |
| 103 | 15 | 3 | Thanjavur | Madurai | 59.00 | 140 | 50 |
| 104 | 36 | 4 | Madras  | Bangalore | 79.00 | 375 | 50 |
| 105 | 40 | 1 | Bangalore | Madras | 80.00 | 375 | 50 |
| 106 | 38 | 2 | Madras  | Madurai | 39.00 | 250 | 50 |
| 107 | 39 | 3 | Hyderabad | Madras | 50.00 | 430 | 50 |
| 108 | 41 | 4 | Madras  | Cochim  | 47.00 | 576 | 50 |
+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

```

## **B.2 Observations and Learning:**

From the experiment, I learnt to:

- Learn how to start and use MySQL
- Obtain help in MySQL
- Load a database in MySQL
- Started to be Familiar with MySQL command line and workbench

## **B.3 Conclusion:**

The experiment helped in learning basic SQL queries to create databases, tables and execute various operations on the table created.

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