Create geotest table for Spatial data storage and retrieval and do all operations using MYSQL

AIM:

To Write a program in Spatial Data Storage And Retrieval In Mysql

PROCEDURE:

Step 1: Start MySql
Step 2: Create Database SpatialDB
Step 3: Create table geotest into the database SpatialDB
Step 4: Insert spatial values to the table
Step 5: Retrieve records from the table.

Queries:

 # mysql -u root

Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 15
Server version: 10.4.32-MariaDB-log mariadb.org binary distribution
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database SpatialDB;
Query OK, 1 row affected (0.001 sec)

MariaDB [SpatialDB]> create table geotest(code int(5),descrip varchar(50),g GEOM
ETRY);
Query OK, 0 rows affected (0.221 sec)
MariaDB [SpatialDB]> describe geotest;

Field	Type	Null	Key	Default	Extra
code	int(5)	YES		NULL	
descrip	varchar(50)	YES		NULL	
g	geometry	YES		NULL	

3 rows in set (0.012 sec)

MariaDB [SpatialDB]> ALTER TABLE geotest ADD pt_local POINT;
Query OK, 0 rows affected (0.096 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [SpatialDB]> describe geotest;

Field	Type	Null	Key	Default	Extra
code	int(5)	YES		NULL	

```
| descrip    | varchar(50)          | YES |      | NULL       |      |
| g          | geometry             | YES |      | NULL       |      |
| pt_local   | point                | YES |      | NULL       |      |
+------------+----------------------+-----+------+------------+------+
4 rows in set (0.010 sec)

MariaDB [SpatialDB]>ALTER TABLE geotest DROP pt_local;
Query OK, 0 rows affected (0.207 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [spatialdb]> SET@g='LINESTRING(0 0,1 2,2 4)';
Query OK, 0 rows affected (0.000 sec)

MariaDB [spatialdb]> INSERT INTO geotest VALUES (1,"Test Data",
GeomFromText(@g));
Query OK, 1 row affected (0.045 sec)

MariaDB [spatialdb]> select * from geotest;
+------ +-----------+-----------------------------------------------------+
| code | descrip   | g                                                   |
+------ +-----------+-----------------------------------------------------+
|  1   | Test Data |  ☺☻  ♥          ≡?     @     @►@                    |
+------ +-----------+-----------------------------------------------------+
1 row in set (0.000 sec)

MariaDB [spatialdb]> SET @g = 'POLYGON(0 0,8 0,12 9,0 9,0 0),(5 3,4 5,7 9,3 7,
2 5))';
Query OK, 0 rows affected (0.000 sec)

MariaDB [spatialdb]> INSERT INTO geotest VALUES (2,"Poly
Data",GeomFromText(@g));
Query OK, 1 row affected (0.045 sec)

MariaDB [spatialdb]> select * from geotest;
+------ +--------------+-----------------------------------------------------+
| code | descrip      | g                                                   |
+------ +--------------+-----------------------------------------------------+
|   1  | Test Data    | ☺☻  ♥          ≡?     @     @►@                    |
|   2  | Poly Data    | NULL                                                |
+------ +--------------+-----------------------------------------------------+
2 rows in set (0.000 sec)

MariaDB [spatialdb]> SET @g ='GEOMETRYCOLLECTION(POINT(3
2),LINESTRING(0 0,1 3,2 5,3 5,4 7))';
Query OK, 0 rows affected (0.000 sec)
```

MariaDB [spatialdb]> INSERT INTO geotest VALUES (3,"MultiData",GeomFromText(@g));
Query OK, 1 row affected (0.084 sec)

MariaDB [spatialdb]> select * from geotest;

```
+------ +--------------+-----------------------------------------------------+
| code | descrip      | g                                                   |
+------ +--------------+-----------------------------------------------------+
|   1  | Test Data    | ☺☻  ♥          ≡?    @    @►@        |
|   2  | Poly Data    | NULL                                                |
|   3 | MultiData    |  ☺  ☻  ☺☺     @    @☺☻  ♣
    ≡?   @    @    ¶@   @    ¶@   ►@   ∟@ |
+------ +--------------+-----------------------------------------------------+
```

MariaDB [spatialdb]> SET @g = 'MULTIPOINT(0 0, 15 25, 45 65)';
Query OK, 0 rows affected (0.000 sec)

MariaDB [spatialdb]> mysql>INSERT INTO geotest VALUES (4,"Multipoint",GeomFromText(@g));
Query OK, 1 row affected (0.045 sec)
MariaDB [spatialdb]> select * from geotest;

```
+------ +--------------+-----------------------------------------------------+
| code | descrip      | g                                                   |
+------ +--------------+-----------------------------------------------------+
|   1  | Test Data    | ☺☻  ♥          ≡?    @    @►@        |
|   2  | Poly Data    | NULL                                                |
|   3  | MultiData    |  ☺  ☻  ☺☺     @    @☺☻  ♣
    ≡?   @    @    ¶@   @    ¶@   ►@   ∟@                |
|   4  | Multipoint | ☺☻  ♥          ≡?    @    @►@        |
+------ +--------------+-----------------------------------------------------+
```

MariaDB [spatialdb]> SET @g = 'MULTILINESTRING(12 12, 22 22), (19 19, 32 18))';
Query OK, 0 rows affected (0.000 sec)

MariaDB [spatialdb]> INSERT INTO geotest VALUES (5,"Multistring",GeomFromText(@g));
Query OK, 1 row affected (0.026 sec)

MariaDB [spatialdb]> select * from geotest;

```
+------ +--------------+-----------------------------------------------------+
| code | descrip      | g                                                   |
+------ +--------------+-----------------------------------------------------+
|   1  | Test Data    | ☺☻  ♥          ≡?    @    @►@        |
|   2  | Poly Data    | NULL                                                |
|   3  | MultiData    |  ☺  ☻  ☺☺     @    @☺☻  ♣
    ≡?   @    @    ¶@   @    ¶@   ►@   ∟@                |
```

```
|   4   | Multipoint  | ☺☻  ♥          ≡?     @     @►@        |
|   5   | Multistring | NULL                                    |
+------ +-------------+-----------------------------------------+
```

MariaDB [spatialdb]> SET @g='MULTIPOLYGON((O 0,11 0,12 11,0 9,0 0),(3 5,7 4,4 7,7 7,3 5))';

Query OK, 0 rows affected (0.000 sec)

MariaDB [spatialdb]> INSERT INTO geotest VALUES (6, "Multipolygon", GeomFromText(@g));

Query OK, 1 row affected (0.058 sec)

MariaDB [spatialdb]> select * from geotest;

```
+------ +---------------------+-----------------------------------------------------+
| code | descrip             | g                                                   |
+------ +---------------------+-----------------------------------------------------+
|   1   | Test Data          | ☺☻  ♥          ≡?     @     @►@        |
|   2   | Poly Data          | NULL                                                |
|   3   | MultiData          |  ☺  ☻  ☺☺     @     @☺☻  ♣
    ≡?    @     @    ¶@    @    ¶@    ►@    ∟@                  |
|   4   | Multipoint         | ☺☻  ♥          ≡?     @     @►@        |
|   5   | Multistring        | ☺  ☻  ☺☺     @     @☺☻  ♣
    ≡?    @     @    ¶@    @    ¶@    ►@    ∟@                  |
|   6   | Multipolygon       | ☺☻  ♥          ≡?     @     @►@
    @     @    ¶@    ►@    ∟@         ≡?     @     @►@        |
+------ +---------------------+-----------------------------------------------------+
```

RESULT: