

EXPERIMENT NO:1

Create database for the schemas

- 1) Program (Program_ID, Program_Name, Duration, St_Strength, Program_Type, No_Semesters)
- 2) Student (First_Name, Last_Name, Reg_no, Program_ID, DOB,Sex, Year_Admission)

RESULT:

```
MySQL 5.0 Command Line Client
mysql> CREATE DATABASE DB1
-> 1
Query OK, 1 row affected (0.45 sec)

mysql> USE DATABASE;
ERROR 1048 (42000): Unknown database 'database'
mysql> USE DB1;
Database changed
mysql> CREATE TABLE PROGRAM(PROGRAM_ID INT PRIMARY KEY,PROGRAM_NAME VARCHAR(50),ST_STRENGTH INT,PROGRAM_TYPE VARCHAR(50),NO_SEMESTER INT NOT NULL);
Query OK, 0 rows affected (0.24 sec)

mysql> DESC PROGRAM;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| PROGRAM_ID | int | NO | PRI | NULL | |
| PROGRAM_NAME | varchar(50) | YES | | NULL | |
| ST_STRENGTH | int | YES | | NULL | |
| PROGRAM_TYPE | varchar(50) | YES | | NULL | |
| NO_SEMESTER | int | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (1.74 sec)

mysql> CREATE TABLE STUDENT(FIRST_NAME VARCHAR(50),LAST_NAME VARCHAR(50),REG_NO INT NOT NULL,PROGRAM_ID INT,DOB DATE,SEX VARCHAR(50),YEAR_ADMISSION INT NOT NULL);
Query OK, 0 rows affected (1.32 sec)

mysql> DESC STUDENT;
-> 1
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| FIRST_NAME | varchar(50) | YES | | NULL | |
| LAST_NAME | varchar(50) | YES | | NULL | |
| REG_NO | int | NO | | NULL | |
| PROGRAM_ID | int | YES | | NULL | |
| DOB | date | YES | | NULL | |
| SEX | varchar(50) | YES | | NULL | |
| YEAR_ADMISSION | int | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.20 sec)

mysql>
```

```
MySQL 5.0 Command Line Client
mysql> INSERT INTO PROGRAM VALUES(1,'MCA',45,'CS',4);
Query OK, 1 row affected (1.00 sec)

mysql> INSERT INTO PROGRAM VALUES(2,'MCOM',43,'FINANCE',4);
Query OK, 1 row affected (0.15 sec)

mysql> INSERT INTO PROGRAM VALUES(3,'MTECH',34,'MECH',4);
Query OK, 1 row affected (0.14 sec)

mysql> INSERT INTO PROGRAM VALUES(4,'BTECH',55,'MECH',8);
Query OK, 1 row affected (0.23 sec)

mysql> INSERT INTO PROGRAM VALUES(5,'BCOM',60,'FINANCE',8);
Query OK, 1 row affected (0.16 sec)

mysql> SELECT * FROM PROGRAM;
+-----+-----+-----+-----+-----+
| PROGRAM_ID | PROGRAM_NAME | ST_STRENGTH | PROGRAM_TYPE | NO_SEMESTER |
+-----+-----+-----+-----+-----+
| 1 | MCA | 45 | CS | 4 |
| 2 | MCOM | 43 | FINANCE | 4 |
| 3 | MTECH | 34 | MECH | 4 |
| 4 | BTECH | 55 | MECH | 8 |
| 5 | BCOM | 60 | FINANCE | 8 |
+-----+-----+-----+-----+-----+
5 rows in set (0.14 sec)

mysql> INSERT INTO STUDENT VALUES('NINHO','XP',101,1,'1998-12-03','MALE',2020);
Query OK, 1 row affected (0.30 sec)

mysql> INSERT INTO STUDENT VALUES('AHAMMED','BASHAM',102,2,'1999-06-23','MALE',2020);
Query OK, 1 row affected (0.17 sec)

mysql> INSERT INTO STUDENT VALUES('JERIN','P',103,3,'1999-02-08','MALE',2020);
Query OK, 1 row affected (0.17 sec)

mysql> INSERT INTO STUDENT VALUES('JIBIN','P',104,4,'1997-11-06','MALE',2019);
Query OK, 1 row affected (0.21 sec)

mysql> INSERT INTO STUDENT VALUES('JALIZ','JOHN',105,5,'1997-05-06','MALE',2019);
Query OK, 1 row affected (0.08 sec)

mysql> SELECT * FROM STUDENT;
```

```

mysql> INSERT INTO PROGRAM VALUES(5,'BCOM',60,'FINANCE',8);
Query OK, 1 row affected (0.10 sec)

mysql> SELECT * FROM PROGRAM;
+-----+-----+-----+-----+-----+
| PROGRAM_ID | PROGRAM_NAME | ST_STRENGTH | PROGRAM_TYPE | NO_SEMESTER |
+-----+-----+-----+-----+-----+
| 1 | MCA | 45 | CS | 4 |
| 2 | MCOM | 43 | FINANCE | 4 |
| 3 | MTech | 34 | MECH | 4 |
| 4 | BTech | 55 | MECH | 8 |
| 5 | BCOM | 60 | FINANCE | 8 |
+-----+-----+-----+-----+-----+
5 rows in set (0.14 sec)

mysql> INSERT INTO STUDENT VALUES('RIMAD','KP',101,1,'1998-12-03','MALE',2020);
Query OK, 1 row affected (0.30 sec)

mysql> INSERT INTO STUDENT VALUES('AHMED','KASHAD',102,2,'1999-06-23','MALE',2020);
Query OK, 1 row affected (0.17 sec)

mysql> INSERT INTO STUDENT VALUES('JIRIN','P',103,3,'1999-02-08','MALE',2020);
Query OK, 1 row affected (0.17 sec)

mysql> INSERT INTO STUDENT VALUES('JIRIN','P',104,4,'1997-11-06','MALE',2019);
Query OK, 1 row affected (0.21 sec)

mysql> INSERT INTO STUDENT VALUES('JAZZ','JOHN',105,5,'1997-05-06','MALE',2019);
Query OK, 1 row affected (0.05 sec)

mysql> SELECT * FROM STUDENT;
+-----+-----+-----+-----+-----+-----+-----+
| FIRST_NAME | LAST_NAME | REG_ID | PROGRAM_ID | DOB | SEX | YEAR_ADMISSION |
+-----+-----+-----+-----+-----+-----+-----+
| RIMAD | KP | 101 | 1 | 1998-12-03 | MALE | 2020 |
| AHMED | KASHAD | 102 | 2 | 1999-06-23 | MALE | 2020 |
| JIRIN | P | 103 | 3 | 1999-02-08 | MALE | 2020 |
| JIRIN | P | 104 | 4 | 1997-11-06 | MALE | 2019 |
| JAZZ | JOHN | 105 | 5 | 1997-05-06 | MALE | 2019 |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.06 sec)

mysql> ALTER TABLE PROGRAM ADD BLOCK VARCHAR(50);

```

EXPERIMENT:2

Perform insertion of records into the database created in the first experiment.

Alter the created table and Perform the Insertion, Updation and Deletion operation.

Drop the created table and remake it.

```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'VALUE="A' at line 1
mysql> UPDATE PROGRAM SET BLOCK='A' WHERE PROGRAM_ID=1;
Query OK, 1 row affected (0.12 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE PROGRAM SET BLOCK='B' WHERE PROGRAM_ID=2;
Query OK, 1 row affected (0.40 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE PROGRAM SET BLOCK='B' WHERE PROGRAM_ID=2;
Query OK, 0 rows affected (0.05 sec)
Rows matched: 1 Changed: 0 Warnings: 0

mysql> UPDATE PROGRAM SET BLOCK='C' WHERE PROGRAM_ID=3;
Query OK, 1 row affected (0.10 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE PROGRAM SET BLOCK='D' WHERE PROGRAM_ID=4;
Query OK, 1 row affected (0.22 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE PROGRAM SET BLOCK='E' WHERE PROGRAM_ID=5;
Query OK, 1 row affected (0.17 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT * FROM PROGRAM;
+-----+-----+-----+-----+-----+-----+
| PROGRAM_ID | PROGRAM_NAME | ST_STRENGTH | PROGRAM_TYPE | NO_SEMESTER | BLOCK |
+-----+-----+-----+-----+-----+-----+
| 1 | MCA | 45 | CS | 4 | A |
| 2 | MCOM | 43 | FINANCE | 4 | B |
| 3 | MTech | 34 | MECH | 4 | C |
| 4 | BTech | 55 | MECH | 8 | D |
| 5 | BCOM | 60 | FINANCE | 8 | E |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> ALTER TABLE STUDENT ADD FOREIGN KEY(PROGRAM_ID) REFERENCES PROGRAM(PROGRAM_ID);
Query OK, 5 rows affected (0.42 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> DESC STUDENT;

```

```
mysql> DESC STUDENT;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| FIRST_NAME | varchar(50) | YES | | NULL | |
| LAST_NAME | varchar(50) | YES | | NULL | |
| REG_NO | int | NO | | NULL | |
| PROGRAM_ID | int | YES | MUL | NULL | |
| DOB | date | YES | | NULL | |
| SEX | varchar(50) | YES | | NULL | |
| YEAR_ADMISSION | int | NO | | NULL | |
+-----+
7 rows in set (0.42 sec)

mysql> ALTER TABLE STUDENT DROP REG_NO;
Query OK, 0 rows affected (7.85 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> DESC STUDENT;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| FIRST_NAME | varchar(50) | YES | | NULL | |
| LAST_NAME | varchar(50) | YES | | NULL | |
| PROGRAM_ID | int | YES | MUL | NULL | |
| DOB | date | YES | | NULL | |
| SEX | varchar(50) | YES | | NULL | |
| YEAR_ADMISSION | int | NO | | NULL | |
+-----+
6 rows in set (0.25 sec)

mysql> DROP STUDENT;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'STUDENT' at line 1
mysql> DROP TABLE STUDENT;
Query OK, 0 rows affected (1.77 sec)

mysql> DROP TABLE PROGRAM;
->
Query OK, 0 rows affected (1.61 sec)

mysql> SHOW TABLES;
->
Empty set (0.47 sec)
```

EXPERIMENT NO:3

Create database for the schemas

- 1) Course(Course_ID, Course_Name, Credit, Semester, Internal_Mark, External_Mark Course_Type)
- 2) Student_Mark(Reg_No, Course_ID, Student_Internal, Student_External)

After associating these schemas in to the already created database and perform row insertion, deletion and updation.

RESULT

```

mysql> CREATE TABLE STUDENT_MARK(REG_NO INT PRIMARY KEY,COURSE_ID VARCHAR(60),STUDENT_INTERNAL INT,STUDENT_EXTERNAL INT);
Query OK, 0 rows affected (4.12 sec)

mysql> DESC COURSE;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| COURSE_ID | int | NO | PRI | NULL | |
| COURSE_NAME | varchar(60) | YES | | NULL | |
| CREDIT | int | NO | | NULL | |
| SEMESTER | int | NO | | NULL | |
| INTERNAL_MARK | int | YES | | NULL | |
| EXTERNAL_MARK | int | YES | | NULL | |
| COURSE_TYPE | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.20 sec)

mysql> DESC STUDENT_MARK;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| REG_NO | int | NO | PRI | NULL | |
| COURSE_ID | varchar(60) | YES | | NULL | |
| STUDENT_INTERNAL | int | YES | | NULL | |
| STUDENT_EXTERNAL | int | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql> INSERT INTO COURSE VALUES(1,'MCA',20,4,33,45,'REGULAR');
Query OK, 1 row affected (0.27 sec)

mysql> INSERT INTO COURSE VALUES(2,'MCOM',20,4,40,60,'REGULAR');
Query OK, 1 row affected (0.33 sec)

mysql> INSERT INTO COURSE VALUES(3,'BCOM',40,6,40,60,'DISTANT');
Query OK, 1 row affected (0.22 sec)

mysql> SELECT * FROM COURSE;
+-----+-----+-----+-----+-----+-----+
| COURSE_ID | COURSE_NAME | CREDIT | SEMESTER | INTERNAL_MARK | EXTERNAL_MARK | COURSE_TYPE |
+-----+-----+-----+-----+-----+-----+
| 1 | MCA | 20 | 4 | 33 | 45 | REGULAR |
| 2 | MCOM | 20 | 4 | 40 | 60 | REGULAR |
+-----+-----+-----+-----+-----+-----+

```

```

mysql> SELECT * FROM COURSE;
+-----+-----+-----+-----+-----+-----+
| COURSE_ID | COURSE_NAME | CREDIT | SEMESTER | INTERNAL_MARK | EXTERNAL_MARK | COURSE_TYPE |
+-----+-----+-----+-----+-----+-----+
| 1 | MCA | 20 | 4 | 33 | 45 | REGULAR |
| 2 | MCOM | 20 | 4 | 40 | 60 | REGULAR |
| 3 | BCOM | 40 | 6 | 40 | 60 | DISTANT |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.09 sec)

mysql> INSERT INTO STUDENT_MARK VALUES(101,1,30,40);
Query OK, 1 row affected (0.34 sec)

mysql> INSERT INTO STUDENT_MARK VALUES(102,2,35,48);
Query OK, 1 row affected (0.21 sec)

mysql> INSERT INTO STUDENT_MARK VALUES(105,20,50);
ERROR 1136 (21503): Column count doesn't match value count at row 1
mysql> INSERT INTO STUDENT_MARK VALUES(105,3,20,50);
Query OK, 1 row affected (0.13 sec)

mysql> SELECT * FROM STUDENT_MARK;
+-----+-----+-----+-----+
| REG_NO | COURSE_ID | STUDENT_INTERNAL | STUDENT_EXTERNAL |
+-----+-----+-----+-----+
| 101 | 1 | 30 | 40 |
| 102 | 2 | 35 | 48 |
| 105 | 3 | 20 | 50 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> DELETE FROM STUDENT_MARK WHERE COURSE_ID=3;
Query OK, 1 row affected (0.22 sec)

mysql> SELECT * FROM STUDENT_MARK;
+-----+-----+-----+-----+
| REG_NO | COURSE_ID | STUDENT_INTERNAL | STUDENT_EXTERNAL |
+-----+-----+-----+-----+
| 101 | 1 | 30 | 40 |
| 102 | 2 | 35 | 48 |
+-----+-----+-----+-----+
2 rows in set (0.05 sec)

```

```

mysql> INSERT INTO STUDENT_MARK VALUES(101,1,30,40);
Query OK, 1 row affected (0.34 sec)

mysql> INSERT INTO STUDENT_MARK VALUES(102,2,35,40);
Query OK, 1 row affected (0.21 sec)

mysql> INSERT INTO STUDENT_MARK VALUES(105,20,09);
ERROR 1136 (21588): Column count doesn't match value count at row 1
mysql> INSERT INTO STUDENT_MARK VALUES(105,3,20,59);
Query OK, 1 row affected (0.23 sec)

mysql> SELECT * FROM STUDENT_MARK;
+-----+-----+-----+-----+
| REG_ID | COURSE_ID | STUDENT_INTERNAL | STUDENT_EXTERNAL |
+-----+-----+-----+-----+
| 101    | 1         | 30               | 40               |
| 102    | 2         | 35               | 40               |
| 105    | 3         | 20               | 50               |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> DELETE FROM STUDENT_MARK WHERE COURSE_ID=3;
Query OK, 1 row affected (0.22 sec)

mysql> SELECT * FROM STUDENT_MARK;
+-----+-----+-----+-----+
| REG_ID | COURSE_ID | STUDENT_INTERNAL | STUDENT_EXTERNAL |
+-----+-----+-----+-----+
| 101    | 1         | 30               | 40               |
| 102    | 2         | 35               | 40               |
+-----+-----+-----+-----+
2 rows in set (0.05 sec)

mysql> UPDATE COURSE SET INTERNAL_MARK=30 WHERE COURSE_ID=1;
Query OK, 1 row affected (0.21 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT * FROM COURSE;
+-----+-----+-----+-----+-----+-----+-----+
| COURSE_ID | COURSE_NAME | CREDIT | SEMESTER | INTERNAL_MARK | EXTERNAL_MARK | COURSE_TYPE |
+-----+-----+-----+-----+-----+-----+-----+
| 1         | PCA        | 20     | 4        | 30            | 45            | REGULAR     |
| 2         | PCOM       | 20     | 4        | 40            | 40            | REGULAR     |
| 3         | BCOM      | 40     | 0        | 40            | 40            | DISTANT     |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

EXPERIMENT NO:4

Data retrieval from the already created database/ Create new sample database and necessary adding of data are made then perform the query selections.

```

mysql> SELECT * FROM STUDENT_MARK;
+-----+-----+-----+-----+
| REG_ID | COURSE_ID | STUDENT_INTERNAL | STUDENT_EXTERNAL |
+-----+-----+-----+-----+
| 101    | 1         | 30               | 40               |
| 102    | 2         | 35               | 40               |
+-----+-----+-----+-----+
2 rows in set (0.05 sec)

mysql> UPDATE COURSE SET INTERNAL_MARK=30 WHERE COURSE_ID=1;
Query OK, 1 row affected (0.21 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT * FROM COURSE;
+-----+-----+-----+-----+-----+-----+-----+
| COURSE_ID | COURSE_NAME | CREDIT | SEMESTER | INTERNAL_MARK | EXTERNAL_MARK | COURSE_TYPE |
+-----+-----+-----+-----+-----+-----+-----+
| 1         | PCA        | 20     | 4        | 30            | 45            | REGULAR     |
| 2         | PCOM       | 20     | 4        | 40            | 40            | REGULAR     |
| 3         | BCOM      | 40     | 0        | 40            | 40            | DISTANT     |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT DISTINCT COURSE_TYPE FROM COURSE;
+-----+
| COURSE_TYPE |
+-----+
| REGULAR     |
| DISTANT     |
+-----+
2 rows in set (0.11 sec)

mysql> SELECT COURSE_NAME FROM COURSE WHERE INTERNAL_MARK>30;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'MARK>30' at line 1
mysql> SELECT COURSE_NAME FROM COURSE WHERE INTERNAL_MARK>30;
+-----+
| COURSE_NAME |
+-----+
| PCOM        |
| BCOM        |
+-----+
2 rows in set (0.01 sec)

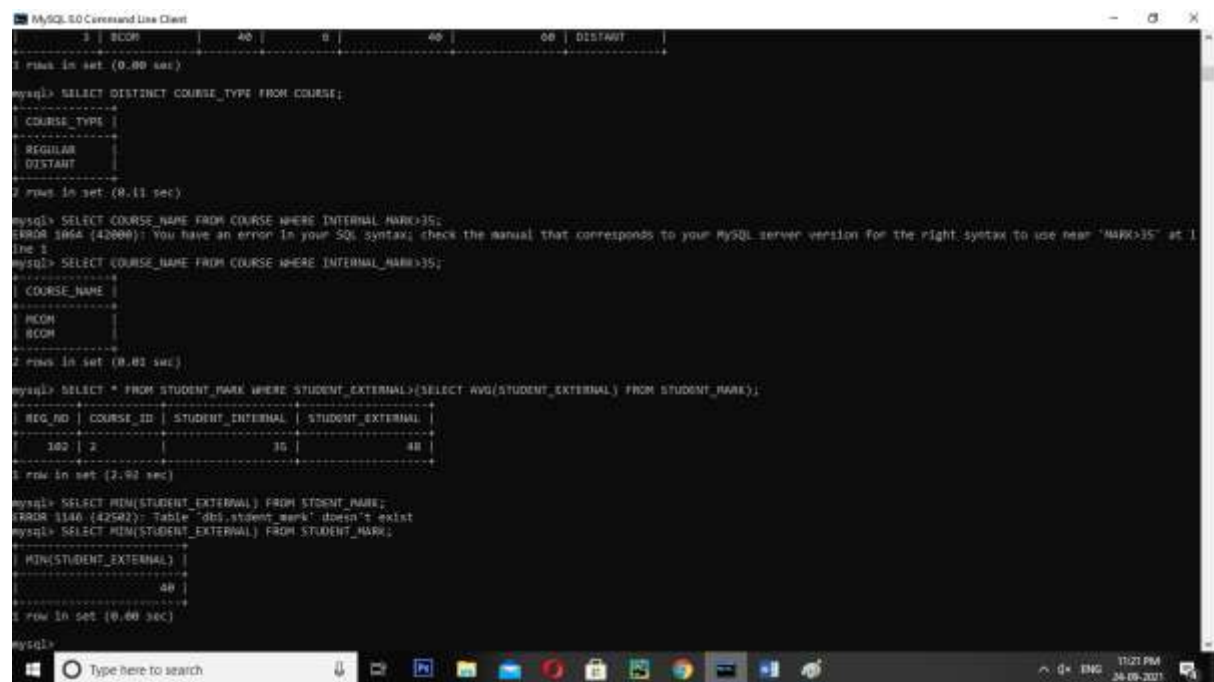
mysql>

```

EXPERIMENT NO:5

Data retrieval from the already created database/ Create new sample database and necessary adding of data are made then perform the query selections. (Write nested query selection using with comparison operators and logical connectives).

RESULT:



```
mysql> SELECT DISTINCT COURSE_TYPE FROM COURSE;
+-----+
| COURSE_TYPE |
+-----+
| REGULAR     |
| DISTANT     |
+-----+
2 rows in set (0.00 sec)

mysql> SELECT COURSE_NAME FROM COURSE WHERE INTERNAL_MARK>35;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'MARK>35' at line 1
mysql> SELECT COURSE_NAME FROM COURSE WHERE INTERNAL_MARK>35;
+-----+
| COURSE_NAME |
+-----+
| BCOM        |
| BCOM        |
+-----+
2 rows in set (0.01 sec)

mysql> SELECT * FROM STUDENT_MARK WHERE STUDENT_EXTERNAL>(SELECT AVG(STUDENT_EXTERNAL) FROM STUDENT_MARK);
+-----+
| REG_ID | COURSE_ID | STUDENT_INTERNAL | STUDENT_EXTERNAL |
+-----+
| 100    | 2         | 35              | 48              |
+-----+
1 row in set (2.92 sec)

mysql> SELECT MIN(STUDENT_EXTERNAL) FROM STUDENT_MARK;
ERROR 1146 (42502): Table 'db1.student_mark' doesn't exist
mysql> SELECT MIN(STUDENT_EXTERNAL) FROM STUDENT_MARK;
+-----+
| MIN(STUDENT_EXTERNAL) |
+-----+
| 40                    |
+-----+
1 row in set (0.00 sec)

mysql>
```

EXPERIMENT NO:6

Data retrieval from the already created database/ Create new sample database and necessary adding of data are made then perform the query selections. (Write queries that familiarize all strings operation in SQL)

RESULT:

```

MySQL 5.0 Command Line Client
1 row in set (2.02 sec)

mysql> SELECT RDN(STUDENT_EXTERNAL) FROM STUDENT_MARK;
ERROR 1146 (42S02): Table 'db1.student_mark' doesn't exist
mysql> SELECT RDN(STUDENT_EXTERNAL) FROM STUDENT_MARK;
+-----+
| RDN(STUDENT_EXTERNAL) |
+-----+
| 40                     |
+-----+
1 row in set (0.00 sec)

mysql> select * from course;
+-----+-----+-----+-----+-----+-----+
| COURSE_ID | COURSE_NAME | CREDIT | SEMESTER | INTERNAL_MARK | EXTERNAL_MARK | COURSE_TYPE |
+-----+-----+-----+-----+-----+-----+
| 1         | PCA         | 20     | 4        | 30            | 45             | REGULAR     |
| 2         | PCOM        | 20     | 4        | 40            | 60             | REGULAR     |
| 3         | BCOM        | 40     | 6        | 40            | 60             | DISTANT     |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.06 sec)

mysql> SELECT COURSE_NAME,LENGTH(COURSE_TYPE) AS LENGTH FROM COURSE;
+-----+-----+
| COURSE_NAME | LENGTH |
+-----+-----+
| PCA         | 7      |
| PCOM        | 7      |
| BCOM        | 7      |
+-----+-----+
3 rows in set (2.75 sec)

mysql> SELECT COURSE_NAME,LOCATE('H',COURSE_NAME) AS C_LOCATION FROM COURSE;
ERROR 1054 (42S22): Unknown column 'H' in 'field list'
mysql> SELECT COURSE_NAME,LOCATE('H',COURSE_NAME) AS C_LOCATION FROM COURSE;
+-----+-----+
| COURSE_NAME | C_LOCATION |
+-----+-----+
| PCA         | 1          |
| PCOM        | 1          |
| BCOM        | 4          |
+-----+-----+
3 rows in set (0.09 sec)

```

```

MySQL 5.0 Command Line Client
+-----+-----+
| COURSE_NAME | C_LOCATION |
+-----+-----+
| PCA         | 1          |
| PCOM        | 1          |
| BCOM        | 4          |
+-----+-----+
3 rows in set (0.09 sec)

mysql> SELECT LOWER(COURSE_NAME) FROM COURSE;
+-----+
| LOWER(COURSE_NAME) |
+-----+
| pcp                |
| pcom               |
| bcom               |
+-----+
3 rows in set (0.07 sec)

mysql> SELECT REPLACE(COURSE_TYPE,'BOON','BA') FROM COURSE;
+-----+
| REPLACE(COURSE_TYPE,'BOON','BA') |
+-----+
| REGULAR                          |
| REGULAR                          |
| DISTANT                          |
+-----+
3 rows in set (0.05 sec)

mysql> SELECT REPLACE(COURSE_NAME,'COM','BA') FROM COURSE;
+-----+
| REPLACE(COURSE_NAME,'COM','BA') |
+-----+
| PCA                              |
| PCBA                            |
| BBA                             |
+-----+
3 rows in set (0.04 sec)

mysql>

```

EXPERIMENT NO:7

Data retrieval from the already created database/ Create new sample database and necessary adding of data are made then perform the query selections. (Write sample queries that familiarize all aggregate functions,group by and having clauses in SQL).

RESULT:


```
MySQL 5.0 Command Line Client
mysql> SELECT COUNT(COURSE_NAME) AS NO_OF_COURSES FROM COURSE;
+-----+
| NO_OF_COURSES |
+-----+
| 3 |
+-----+
1 row in set (0.02 sec)

mysql> SELECT MAX(INTERNAL_MARK) FROM COURSE;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'COURSE' at '1'
mysql> SELECT MAX(INTERNAL_MARK) FROM COURSE;
+-----+
| MAX(INTERNAL_MARK) |
+-----+
| 40 |
+-----+
1 row in set (0.00 sec)

mysql> SELECT MIN(INTERNAL_MARK) FROM COURSE;
+-----+
| MIN(INTERNAL_MARK) |
+-----+
| 30 |
+-----+
1 row in set (0.00 sec)

mysql> SELECT AVG(INTERNAL_MARK) FROM COURSE;
+-----+
| AVG(INTERNAL_MARK) |
+-----+
| 36.6667 |
+-----+
1 row in set (0.02 sec)

mysql> SELECT SUM(INTERNAL_MARK) FROM COURSE;
+-----+
| SUM(INTERNAL_MARK) |
+-----+
| 110 |
+-----+
1 row in set (0.00 sec)

mysql>
```

EXPERIMENT NO:8

Data retrieval from the already created database/ Create new sample database and necessary adding of data are made then perform the query selections.(Write sample queries that familiarize all set operations in SQL)

RESULT:

```
MySQL 5.0 Command Line Client
mysql>
+-----+
| NO | NAME |
+-----+
| 1 | JESSI |
| 2 | JOHN |
| 3 | SAM |
| 4 | JAMES |
+-----+
1 row in set (0.02 sec)

mysql> SELECT * FROM TB2;
+-----+
| NO | NAME |
+-----+
| 5 | JERIN |
| 2 | JOHN |
+-----+
1 rows in set (0.00 sec)

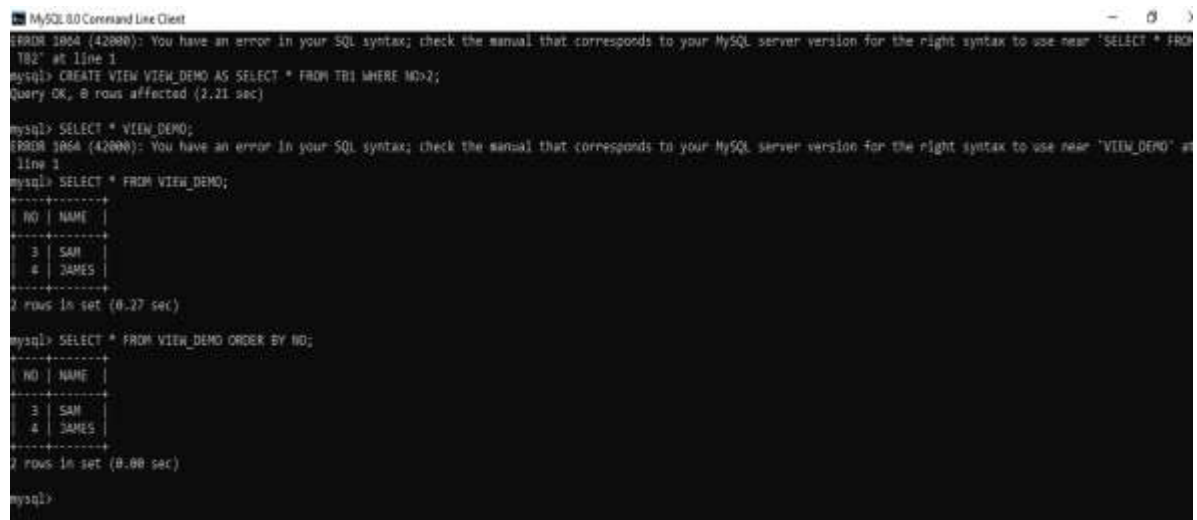
mysql> SELECT * FROM TB1 UNION SELECT * FROM TB2;
+-----+
| NO | NAME |
+-----+
| 1 | JESSI |
| 2 | JOHN |
| 3 | SAM |
| 4 | JAMES |
| 5 | JERIN |
+-----+
5 rows in set (0.05 sec)

mysql> SELECT * FROM TB1 UNION ALL SELECT * FROM TB2;
+-----+
| NO | NAME |
+-----+
| 1 | JESSI |
| 2 | JOHN |
| 3 | SAM |
| 4 | JAMES |
| 5 | JERIN |
| 2 | JOHN |
+-----+
6 rows in set (0.00 sec)
```


EXPERIMENT NO:9

Define a view on the already created database and perform query selection on it.(Create sample view and write sample queries on it).

RESULT:



```
mysql> CREATE VIEW VIEW_DEMO AS SELECT * FROM TB1 WHERE NO>2;
Query OK, 0 rows affected (2.21 sec)

mysql> SELECT * FROM VIEW_DEMO;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'VIEW_DEMO' at line 1
mysql> SELECT * FROM VIEW_DEMO;
+----+-----+
| NO | NAME |
+----+-----+
| 3  | SAM  |
| 4  | JAMES|
+----+-----+
2 rows in set (0.27 sec)

mysql> SELECT * FROM VIEW_DEMO ORDER BY NO;
+----+-----+
| NO | NAME |
+----+-----+
| 3  | SAM  |
| 4  | JAMES|
+----+-----+
2 rows in set (0.00 sec)

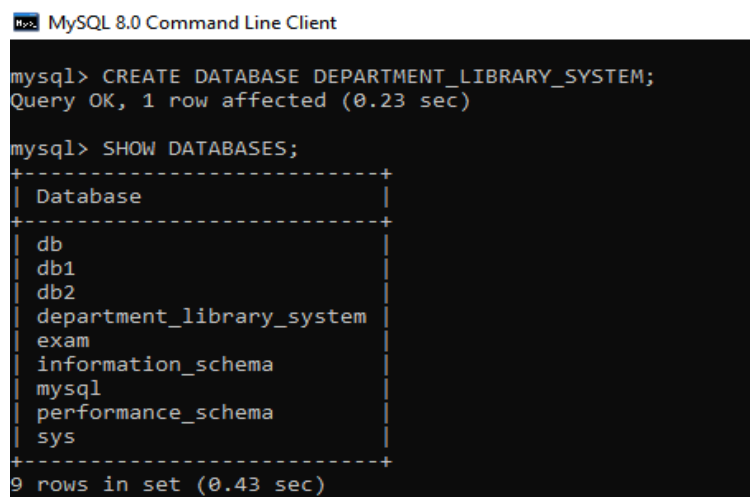
mysql>
```

EXPERIMENT NO:10

Develop a tiny database system and do necessary adding of data and data retrieval from that.(Create sample database system such as department library system,college canteen system,hostel system,college store system etc.)

RESULT

DEPARTMENT LIBRARY SYSTEM DATABASE



```
mysql> CREATE DATABASE DEPARTMENT_LIBRARY_SYSTEM;
Query OK, 1 row affected (0.23 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| db       |
| db1      |
| db2      |
| department_library_system |
| exam     |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
+-----+
9 rows in set (0.43 sec)
```

TABLES:

DEPARTMENT

```
mysql> CREATE TABLE DEPARTMENT(DEP_ID INT PRIMARY KEY,FACULTY_NAME VARCHAR(50));
Query OK, 0 rows affected (3.80 sec)

mysql> DESC DEPARTMENT;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| DEP_ID     | int           | NO   | PRI | NULL    |       |
| FACULTY_NAME | varchar(50)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.24 sec)
```

STUDENT

```
MySQL 8.0 Command Line Client
mysql> CREATE TABLE STUDENT(STD_ID INT PRIMARY KEY,STD_NAME VARCHAR(60));
Query OK, 0 rows affected (2.25 sec)

mysql> DESC STUDENT;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| STD_ID     | int           | NO   | PRI | NULL    |       |
| STD_NAME   | varchar(60)   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

BOOK

```
MySQL 8.0 Command Line Client
mysql> CREATE TABLE BOOK(BOOK_ID INT PRIMARY KEY NOT NULL,BOOK_NAME VARCHAR(60) NOT NULL,AUTHOR VARCHAR(60) NOT NULL);
Query OK, 0 rows affected (1.27 sec)

mysql> DESC BOOK;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| BOOK_ID    | int           | NO   | PRI | NULL    |       |
| BOOK_NAME  | varchar(60)   | NO   |     | NULL    |       |
| AUTHOR     | varchar(60)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.13 sec)
```

ISSUED STATUS

```
mysql> CREATE TABLE ISSUED_STATUS(ISSUE_ID INT PRIMARY KEY,BOOK_ID INT,ISSUED_STUDENT VARCHAR(60),BOOK_NAME VARCHAR(60),DATE DATE,FOREIGN KEY(BOOK_ID) REFERENCES BOOK(B
BOOK_ID));
Query OK, 0 rows affected (4.06 sec)

mysql> DESC ISSUED_STATUS;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| ISSUE_ID | int | NO | PRI | NULL | |
| BOOK_ID | int | YES | MUL | NULL | |
| ISSUED_STUDENT | varchar(60) | YES | | NULL | |
| BOOK_NAME | varchar(60) | YES | | NULL | |
| DATE | date | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.07 sec)

mysql>
```