SOCIAL MEDIA DATABASE MANAGEMENT SYSTEMS

DBMS Project (IT252) Report

Submitted in partial fulfilment of the requirements for the degree of

BACHELOR OF TECHNOLOGY

In

INFORMATION TECHNOLOGY

By

KALYANE SATYAM (201IT269)

LOHITH N (201IT133)

SANKET HANAGANDI (201IT154)

SHAULENDRA KUMAR (201IT159)

MAYUR JINDE (201IT135)

DEPARTMENT OF INFORMATION TECHNOLOGY

NATIONAL INSTITUTE OF TECHNOLOGY

KARNATAKA SURATHKAL, MANGALORE - 575025

MAY, 2022

DESCRIPTION OF THE OUR DATABASE

Social Media Management Systems are collection of procedures used to manage work flow in a disparate social media environment. These procedures can be manual or computer-based and enable the manager to listen, aggregate, publish, and manage multiple social media channels from one tool.

Our database is on the **Social Media System**. We have total 9 tables in our database. We have created the table "USERS" in which we store the email and phone numbers, and these users can create multiple profiles, which is stored in the table "PROFILE". With these profiles, users can post various images and videos which is stored in the table "POST". If the posts are inappropriate, then there is an option to report it, and that record is stored in the table "REPORT". Also, there is an option to create groups. The group record is stored in "TEAMS" and the data of the members is stored in the table "MEMBERS". We have implemented other features to make friends which is stored in the table "FRIENDS", to store the data of the interested people we have the table "INTEREST". Then to put some profiles in the block list, we have the table "BLOCKLIST".

SCREENSHOTS OF ALL THE TABLES OF OUR DATABASE

1) Table-1 **USERS**

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

mysql> USE social_media;
Database changed
mysql> CREATE Table users(
    ->     user_id INTEGER AUTO_INCREMENT PRIMARY KEY,
    ->     email VARCHAR(25) UNIQUE NOT NULL,
    ->     phone VARCHAR(12) UNIQUE NOT NULL
    ->  );
Query OK, 0 rows affected (1.28 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("a@mail.com",917707909733);
Query OK, 1 row affected (0.40 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("b@mail.com",917707903397);
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("c@mail.com",91707909707);
Query OK, 1 row affected (0.17 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("d@mail.com",917707902333);
Query OK, 1 row affected (0.09 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("e@mail.com",917707901333);
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("h@mail.com",917707901233);
Query OK, 1 row affected (0.09 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("i@mail.com",917707909721);
Query OK, 1 row affected (0.21 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("j@mail.com",917707909234);
Query OK, 1 row affected (0.19 sec)

mysql> INSERT INTO users ( email,phone ) VALUES("k@mail.com",917707909235);
Query OK, 1 row affected (0.12 sec)
```

```
mysql> SELECT * FROM users;
+---------+------------+--------------+
| user_id | email      | phone        |
+---------+------------+--------------+
|       1 | a@mail.com | 917707909733 |
|       2 | b@mail.com | 917707903397 |
|       3 | c@mail.com | 91707909707  |
|       4 | d@mail.com | 917707902333 |
|       5 | e@mail.com | 917707901333 |
|       6 | h@mail.com | 917707901233 |
|       7 | i@mail.com | 917707909721 |
|       8 | j@mail.com | 917707909234 |
|       9 | k@mail.com | 917707909235 |
+---------+------------+--------------+
9 rows in set (0.20 sec)
```

2) Table-2 **PROFILES**

```
mysql> CREATE TABLE PROFILE(
    ->     user_name VARCHAR(20),
    ->     DOB DATE,
    ->     bio varchar(256),
    ->     profile_id INTEGER UNIQUE,
    ->     CONSTRAINT fk_user_id FOREIGN KEY (profile_id) REFERENCES users(user_id)
    ->         ON DELETE CASCADE
    ->         ON UPDATE CASCADE
    -> );
Query OK, 0 rows affected (1.58 sec)

mysql> INSERT INTO PROFILE ( user_name,DOB,bio,profile_id ) VALUES(
    ->     "a",str_to_date('12-07-2012','%d-%m-%Y'),"abcd",1
    -> );
Query OK, 1 row affected (0.14 sec)

mysql> INSERT INTO PROFILE ( user_name,DOB,bio,profile_id ) VALUES(
    ->     "b",str_to_date('22-2-2001','%d-%m-%Y'),"efg",2
    -> );
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO PROFILE ( user_name,DOB,bio,profile_id ) VALUES(
    ->     "c",str_to_date('03-03-2001','%d-%m-%Y'),"hij",3
    -> );
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO PROFILE ( user_name,DOB,bio,profile_id ) VALUES(
    ->     "d",str_to_date('04-04-2001','%d-%m-%Y'),"lmn",4
    -> );
Query OK, 1 row affected (0.10 sec)

mysql> INSERT INTO PROFILE ( user_name,DOB,bio,profile_id ) VALUES(
    ->     "e",str_to_date("05-02-2001",'%d-%m-%Y'),"opq",5
    -> );
Query OK, 1 row affected (0.09 sec)
```

```
mysql> SELECT * FROM profile;
+-----------+------------+------+------------+
| user_name | DOB        | bio  | profile_id |
+-----------+------------+------+------------+
| a         | 2012-07-12 | abcd |          1 |
| b         | 2001-02-22 | efg  |          2 |
| c         | 2001-03-03 | hij  |          3 |
| d         | 2001-04-04 | lmn  |          4 |
| e         | 2001-02-05 | opq  |          5 |
+-----------+------------+------+------------+
5 rows in set (0.06 sec)
```

3) Table-3 **POST**

```
mysql> CREATE TABLE post(
    ->     post_id INTEGER PRIMARY KEY AUTO_INCREMENT,
    ->     post_type ENUM("img","video"),
    ->     visibility ENUM("public","private"),
    ->     postedBy_id INTEGER ,
    ->     posted_on TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP,
    ->     CONSTRAINT fk_uid FOREIGN KEY (postedBy_id) REFERENCES users(user_id)
    ->         ON DELETE CASCADE
    ->         ON UPDATE CASCADE
    -> );
Query OK, 0 rows affected (0.76 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "img","public",1
    -> );
Query OK, 1 row affected (0.26 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "img","public",2
    -> );
Query OK, 1 row affected (0.14 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "video","public",3
    -> );
Query OK, 1 row affected (0.11 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "img","private",3
    -> );
Query OK, 1 row affected (0.19 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "img","private",1
    -> );
Query OK, 1 row affected (0.18 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "img","public",5
    -> );
Query OK, 1 row affected (0.10 sec)

mysql> INSERT INTO post ( post_type,visibility,postedBy_id ) VALUES(
    ->      "img","public",1
    -> );
Query OK, 1 row affected (0.09 sec)
```

```
mysql> SELECT * FROM post;
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       1 | img       | public     |           1 | 2022-05-03 10:16:07 |
|       2 | img       | public     |           2 | 2022-05-03 10:16:07 |
|       3 | video     | public     |           3 | 2022-05-03 10:16:07 |
|       4 | img       | private    |           3 | 2022-05-03 10:16:08 |
|       5 | img       | private    |           1 | 2022-05-03 10:16:08 |
|       6 | img       | public     |           5 | 2022-05-03 10:16:08 |
|       7 | img       | public     |           1 | 2022-05-03 10:16:08 |
+---------+-----------+------------+-------------+---------------------+
7 rows in set (0.06 sec)
```

4) Table-4 **REPORT**

```
mysql> CREATE TABLE report(
    ->     post_id INTEGER ,
    ->     reportedBy INTEGER,
    ->     report_type ENUM("harassment","bullying","violence","Spam","misleading"),
    ->     disciption VARCHAR(255),
    ->     CONSTRAINT FOREIGN KEY (post_id) REFERENCES post(post_id)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE,
    ->     FOREIGN KEY (reportedBy) REFERENCES users(user_id)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE
    -> );
Query OK, 0 rows affected (1.75 sec)

mysql> INSERT INTO  report ( post_id, reportedBy, report_type, disciption ) VALUES(
    ->      2,1,"harassment","asdfghjklhgftdsdrftghcfggfgfxg"
    -> );
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO  report ( post_id, reportedBy, report_type, disciption ) VALUES(
    ->      1,2,"Spam","asdfghjklhgftdsdrftghcfggfgfxg"
    -> );
Query OK, 1 row affected (0.23 sec)
```

```
mysql> SELECT * FROM report;
+---------+------------+-------------+--------------------------------+
| post_id | reportedBy | report_type | disciption                     |
+---------+------------+-------------+--------------------------------+
|       2 |          1 | harassment  | asdfghjklhgftdsdrftghcfggfgfxg |
|       1 |          2 | Spam        | asdfghjklhgftdsdrftghcfggfgfxg |
+---------+------------+-------------+--------------------------------+
2 rows in set (0.03 sec)
```

5) Table-5 **TEAMS**

```
mysql> CREATE TABLE teams(
    ->     Gid INTEGER AUTO_INCREMENT  PRIMARY KEY ,
    ->     Gname VARCHAR(12),
    ->     GAdmin INTEGER
    -> );
Query OK, 0 rows affected (1.99 sec)

mysql> INSERT INTO  teams ( Gname,Gadmin ) VALUES(
    ->     "IT-24",1
    -> );
Query OK, 1 row affected (0.14 sec)

mysql>
mysql> INSERT INTO  teams ( Gname,Gadmin ) VALUES(
    ->     "IT-25",2
    -> );
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO  teams ( Gname,Gadmin ) VALUES(
    ->     "IT-26",3
    -> );
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO  teams ( Gname,Gadmin ) VALUES(
    ->     "CS-24",4
    -> );
Query OK, 1 row affected (0.09 sec)

mysql> INSERT INTO  teams ( Gname,Gadmin ) VALUES(
    ->     "CS-25",5
    -> );
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO  teams ( Gname,Gadmin ) VALUES(
    ->     "CS-26",6
    -> );
Query OK, 1 row affected (0.10 sec)
```

```
mysql> SELECT * FROM teams;
+-----+-------+--------+
| Gid | Gname | GAdmin |
+-----+-------+--------+
|   1 | IT-24 |      1 |
|   2 | IT-25 |      2 |
|   3 | IT-26 |      3 |
|   4 | CS-24 |      4 |
|   5 | CS-25 |      5 |
|   6 | CS-26 |      6 |
+-----+-------+--------+
6 rows in set (0.04 sec)
```

6) Table-6 **MEMBERS**

```
mysql> CREATE TABLE members(
    ->     mem_id INTEGER,
    ->     Gid INTEGER,
    ->     Unique my_uniq_key (mem_id, Gid),
    ->      CONSTRAINT fk_gid FOREIGN KEY (Gid) REFERENCES teams(Gid)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE,
    ->     CONSTRAINT fk_user_ids FOREIGN KEY (mem_id) REFERENCES users(user_id)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE
    ->
    -> );
Query OK, 0 rows affected (1.19 sec)

mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     1,1
    -> );
Query OK, 1 row affected (0.24 sec)

mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     2,2
    -> );
Query OK, 1 row affected (0.11 sec)

mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     5,3
    -> );
Query OK, 1 row affected (0.12 sec)

mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     4,4
    -> );
Query OK, 1 row affected (0.08 sec)

mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     3,4
    -> );
Query OK, 1 row affected (0.14 sec)

mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     2,3
    -> );
Query OK, 1 row affected (0.07 sec)

mysql>
mysql> INSERT INTO members ( mem_id , Gid ) VALUES(
    ->     5,1
    -> );
Query OK, 1 row affected (0.07 sec)
```

```
mysql> SELECT * FROM members;
+--------+------+
| mem_id | Gid  |
+--------+------+
|      1 |    1 |
|      2 |    2 |
|      2 |    3 |
|      3 |    4 |
|      4 |    2 |
|      4 |    4 |
|      5 |    1 |
|      5 |    3 |
|      6 |    4 |
+--------+------+
9 rows in set (0.02 sec)
```

7) Table-7 **FRIENDS**

```
mysql> CREATE TABLE friends(
    ->     friend INTEGER NOT NULL,
    ->     fk_user INTEGER,
    ->     CONSTRAINT fk_userid FOREIGN KEY (fk_user) REFERENCES users(user_id)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> INSERT INTO friends ( friend,fk_user ) VALUES(
    ->   1,3
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO friends ( friend,fk_user ) VALUES(
    ->   3,1
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO friends ( friend,fk_user ) VALUES(
    ->   3,4
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO friends ( friend,fk_user ) VALUES(
    ->   4,3
    -> );
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> SELECT * FROM friends;
+--------+---------+
| friend | fk_user |
+--------+---------+
|      1 |       3 |
|      3 |       1 |
|      3 |       4 |
|      4 |       3 |
+--------+---------+
4 rows in set (0.00 sec)
```

8) Table-8 **BLOCK LIST**

```
mysql> CREATE TABLE blocklist(
    ->     usid INTEGER,
    ->     blockedBy INTEGER,
    ->     FOREIGN KEY (blockedBy) REFERENCES users(user_id)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> INSERT INTO  blocklist ( ) VALUES(
    ->     2,1
    -> );
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO  blocklist ( ) VALUES(
    ->     1,2
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM blocklist;
+------+-----------+
| usid | blockedBy |
+------+-----------+
|    2 |         1 |
|    1 |         2 |
+------+-----------+
2 rows in set (0.00 sec)
```

9) Table-9 **INTEREST**

```
mysql> CREATE TABLE intrest(
    ->     user_id INTEGER,
    ->     intrested_in  ENUM ("cat","dog","fish") NOT NULL,
    ->     FOREIGN KEY (user_id) REFERENCES users(user_id)
    ->     ON DELETE CASCADE
    ->     ON UPDATE CASCADE
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      1,"cat"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      2,"dog"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      1,"fish"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      3,"cat"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      4,"cat"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      5,"dog"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      4,"dog"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO intrest ( user_id,intrested_in ) VALUES(
    ->      6,"fish"
    -> );
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM intrest;
+---------+--------------+
| user_id | intrested_in |
+---------+--------------+
|       1 | cat          |
|       2 | dog          |
|       1 | fish         |
|       3 | cat          |
|       4 | cat          |
|       5 | dog          |
|       4 | dog          |
|       6 | fish         |
+---------+--------------+
8 rows in set (0.00 sec)
```

SRCEENSHOTS OF THE GIVEN QUERIES

1) Simple Queries

Query 1:

```
mysql> SELECT COUNT(user_id) FROM users;
+----------------+
| COUNT(user_id) |
+----------------+
|              9 |
+----------------+
1 row in set (0.13 sec)
```

Query 2:

```
mysql> ALTER TABLE profile
    ->     MODIFY COLUMN bio VARCHAR(200);
Query OK, 5 rows affected (3.69 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

Query 3:

```
mysql> SELECT COUNT(DISTINCT profile_id) FROM profile;
+----------------------------+
| COUNT(DISTINCT profile_id) |
+----------------------------+
|                          5 |
+----------------------------+
1 row in set (0.02 sec)
```

Query 4:

```
mysql> SELECT user_name from profile WHERE profile_id = 1;
+-----------+
| user_name |
+-----------+
| a         |
+-----------+
1 row in set (0.08 sec)
```

Query 5:

```
mysql> SELECT * FROM post
    ->    WHERE post_type = 'img' AND visibility = 'public';
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       1 | img       | public     |           1 | 2022-05-03 10:16:07 |
|       2 | img       | public     |           2 | 2022-05-03 10:16:07 |
|       6 | img       | public     |           5 | 2022-05-03 10:16:08 |
|       7 | img       | public     |           1 | 2022-05-03 10:16:08 |
+---------+-----------+------------+-------------+---------------------+
4 rows in set (0.03 sec)
```

Query 6:

```
mysql> SELECT email FROM users;
+-------------+
| email       |
+-------------+
| a@mail.com  |
| b@mail.com  |
| c@mail.com  |
| d@mail.com  |
| e@mail.com  |
| h@mail.com  |
| i@mail.com  |
| j@mail.com  |
| k@mail.com  |
+-------------+
9 rows in set (0.03 sec)
```

Query 7:

```
mysql> SELECT DISTINCT report_type FROM report;
+--------------+
| report_type  |
+--------------+
| harassment   |
| Spam         |
+--------------+
2 rows in set (0.10 sec)
```

Query 8:

```
mysql> UPDATE users
    ->     SET phone = '1234567890'
    ->     WHERE user_id = 1;
Query OK, 1 row affected (0.12 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Query 9:

```
mysql> SELECT * FROM teams;
+-----+-------+--------+
| Gid | Gname | GAdmin |
+-----+-------+--------+
|   1 | IT-24 |      1 |
|   2 | IT-25 |      2 |
|   3 | IT-26 |      3 |
|   4 | CS-24 |      4 |
|   5 | CS-25 |      5 |
|   6 | CS-26 |      6 |
+-----+-------+--------+
6 rows in set (0.00 sec)
```

Query 10:

```
mysql> SELECT * FROM members
    ->     WHERE gid BETWEEN 1 AND 3;
+--------+------+
| mem_id | Gid  |
+--------+------+
|      1 |    1 |
|      2 |    2 |
|      2 |    3 |
|      4 |    2 |
|      5 |    1 |
|      5 |    3 |
+--------+------+
6 rows in set (0.03 sec)
```

2) Complex Queries

Query 1 (Nested Query)*:*

```
mysql> select user_name,DOB,bio from profile  where profile_id in(select user_id from users where user_id in(select postedBy_id from post where visibility='public'));
+-----------+------------+------+
| user_name | DOB        | bio  |
+-----------+------------+------+
| a         | 2012-07-12 | abcd |
| b         | 2001-02-22 | efg  |
| c         | 2001-03-03 | hij  |
| e         | 2001-02-05 | opq  |
+-----------+------------+------+
4 rows in set (0.00 sec)
```

Query 2 (Nested Query)*:*

```
mysql>  select Gname,GAdmin from teams where Gid=(select max(mem_id) from members);
+-------+--------+
| Gname | GAdmin |
+-------+--------+
| CS-26 |      6 |
+-------+--------+
1 row in set (0.00 sec)
```

Query 3 (Nested Query)*:*

```
mysql>  select email from users where user_id in(select profile_id from profile where DOB='2012-07-12' and bio='abcd');
+------------+
| email      |
+------------+
| a@mail.com |
+------------+
1 row in set (0.00 sec)
```

Query 4 (Nested Query)*:*

```
ysql>  select user_name,DOB,bio from profile where profile_id=(select user_id from users where phone='917707909733');
+-----------+------------+------+
 user_name | DOB        | bio  |
+-----------+------------+------+
 a         | 2012-07-12 | abcd |
+-----------+------------+------+
 row in set (0.00 sec)
```

Query 5 (Correlated Query)*:*

```
mysql> select user_name,profile_id,(select avg(profile_id)from profile E2 where E2.profile_id=E1.profile_id) as average from profile E1;
+-----------+------------+---------+
| user_name | profile_id | average |
+-----------+------------+---------+
| a         |          1 |  1.0000 |
| b         |          2 |  2.0000 |
| c         |          3 |  3.0000 |
| d         |          4 |  4.0000 |
| e         |          5 |  5.0000 |
+-----------+------------+---------+
5 rows in set (0.00 sec)
```

Query 6 (Correlated Query)*:*

```
mysql> select*from users where exists(select*from profile where users.user_id=profile.profile_id);
+---------+------------+--------------+
| user_id | email      | phone        |
+---------+------------+--------------+
|       1 | a@mail.com | 917707909733 |
|       2 | b@mail.com | 917707903397 |
|       3 | c@mail.com | 91707909707  |
|       4 | d@mail.com | 917707902333 |
|       5 | e@mail.com | 917707901333 |
+---------+------------+--------------+
5 rows in set (0.00 sec)
```

Query 7 (Correlated Query)*:*

```
mysql> select user_name,DOB,bio from profile P1 where profile_id>(select sum(profile_id) from profile where profile_id=P1.profile_id);
Empty set (0.00 sec)

mysql>  select*from users where not exists(select*from profile where users.user_id=profile.profile_id);
+---------+------------+--------------+
| user_id | email      | phone        |
+---------+------------+--------------+
|       6 | h@mail.com | 917707901233 |
|       7 | i@mail.com | 917707909721 |
|       8 | j@mail.com | 917707909234 |
|       9 | k@mail.com | 917707909235 |
+---------+------------+--------------+
4 rows in set (0.04 sec)

mysql>
```

3) Views

View 1:

```
mysql> create view Group_Members as
    ->  select t.Gid as Group_No , m.mem_id as User_Id
    ->  from teams as t, members as m
    ->  where t.Gid = m.Gid
    ->  group by User_Id,Group_No
    ->  order by Group_No;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from Group_Members;
+----------+---------+
| Group_No | User_Id |
+----------+---------+
|        1 |       1 |
|        1 |       5 |
|        2 |       2 |
|        2 |       4 |
|        3 |       2 |
|        3 |       5 |
|        4 |       4 |
|        4 |       6 |
|        7 |       4 |
+----------+---------+
9 rows in set (0.00 sec)
```

View 2:

```
mysql> select * from PROFILE;
+-----------+------------+------+------------+
| user_name | DOB        | bio  | profile_id |
+-----------+------------+------+------------+
| a         | 2012-07-12 | abcd |          1 |
| b         | 2001-02-22 | efg  |          2 |
| d         | 2001-04-04 | lmn  |          4 |
| e         | 2001-02-05 | opq  |          5 |
+-----------+------------+------+------------+
4 rows in set (0.00 sec)
```

```
mysql> create view Age_Check as
    ->  select user_name as Name , YEAR(CURDATE()) - YEAR(DOB) AS age
    ->   FROM PROFILE
    ->   where (YEAR(CURDATE()) - YEAR(DOB)) < 18;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from Age_Check;
+------+------+
| Name | age  |
+------+------+
| a    |   10 |
+------+------+
1 row in set (0.00 sec)

mysql>
```

View 3:

```
mysql> CREATE VIEW allpost AS
    -> SELECT user_id,post_id,visibility,posted_on FROM users JOIN post on postedBy_id=user_id ORDER BY user_id;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM allpost ;
+---------+---------+------------+---------------------+
| user_id | post_id | visibility | posted_on           |
+---------+---------+------------+---------------------+
|       1 |       1 | public     | 2022-05-01 19:08:56 |
|       1 |       5 | private    | 2022-05-01 19:08:56 |
|       1 |       7 | public     | 2022-05-01 19:08:56 |
|       2 |       2 | public     | 2022-05-01 19:08:56 |
|       3 |       3 | public     | 2022-05-01 19:08:56 |
|       3 |       4 | private    | 2022-05-01 19:08:56 |
|       5 |       6 | public     | 2022-05-01 19:08:56 |
+---------+---------+------------+---------------------+
7 rows in set (0.00 sec)
```

View 4:

```
mysql> CREATE VIEW all_reports AS
    -> SELECT * FROM users JOIN report on reportedBy=user_id ORDER BY user_id;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM all_reports  ;
+---------+------------+-------------+---------+------------+-------------+--------------------------------+
| user_id | email      | phone       | post_id | reportedBy | report_type | disciption                     |
+---------+------------+-------------+---------+------------+-------------+--------------------------------+
|       1 | a@mail.com | 917707909733 |       2 |          1 | harassment  | asdfghjklhgftdsdrftghcfggfgfxg |
|       2 | b@mail.com | 917707903397 |       1 |          2 | Spam        | asdfghjklhgftdsdrftghcfggfgfxg |
+---------+------------+-------------+---------+------------+-------------+--------------------------------+
2 rows in set (0.01 sec)

mysql>
```

View 5:

```
mysql> CREATE VIEW all_report_byuser AS
    -> SELECT postedBy_id AS "USER ID" ,reportedBy AS
    -> "REPORTED BY",report_type as "Type" ,disciption
    -> FROM report
    -> JOIN post WHERE post.post_id=report.post_id;
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> SELECT * FROM all_report_byuser;
+---------+-------------+------------+--------------------------------+
| USER ID | REPORTED BY | Type       | disciption                     |
+---------+-------------+------------+--------------------------------+
|       2 |           1 | harassment | asdfghjklhgftdsdrftghcfggfgfxg |
|       1 |           2 | Spam       | asdfghjklhgftdsdrftghcfggfgfxg |
+---------+-------------+------------+--------------------------------+
2 rows in set (0.00 sec)
```

4) Stored Procedures and Stored Functions

Procedure 1:

```
mysql> delimiter //
mysql> create procedure Spammer()
    -> Begin
    ->  select reportedBy as spammer , count(*) as spams
    ->  from report
    ->  group by reportedBy
    ->  having count(*) = (select max(spams) from
    ->   (select reportedBy as spammer , count(*) as spams
    ->    from report
    ->    group by reportedBy)
    ->    report);
    -> end//
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> delimiter ;
```

```
mysql> select * from report;
+---------+------------+-------------+--------------------------------+
| post_id | reportedBy | report_type | disciption                     |
+---------+------------+-------------+--------------------------------+
|       2 |          1 | harassment  | asdfghjklhgftdsdrftghcfggfgfxg |
|       6 |          1 | bullying    | asdfghjklhgftdsdrftghcfggfgfxg |
|       7 |          2 | misleading  | asdfghjklhgftdsdrftghcfggfgfxg |
|       6 |          2 | bullying    | asdfghjklhgftdsdrftghcfggfgfxg |
|       7 |          5 | misleading  | asdfghjklhgftdsdrftghcfggfgfxg |
+---------+------------+-------------+--------------------------------+
5 rows in set (0.00 sec)

mysql> call Spammer();
+---------+-------+
| spammer | spams |
+---------+-------+
|       1 |     2 |
|       2 |     2 |
+---------+-------+
2 rows in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)
```

Procedure 2:

```
mysql> select * from post;
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       2 | img       | public     |           2 | 2022-04-30 16:08:55 |
|       5 | img       | private    |           1 | 2022-04-30 16:08:56 |
|       6 | img       | public     |           5 | 2022-04-30 16:08:56 |
|       7 | img       | public     |           1 | 2022-04-30 16:08:56 |
+---------+-----------+------------+-------------+---------------------+
4 rows in set (0.00 sec)

mysql> drop procedure User_with_greater_post;
Query OK, 0 rows affected (0.01 sec)

mysql> delimiter //
mysql> create procedure User_with_greater_post(IN amount int)
    -> Begin
    ->  select postedBy_id as User, count(*) as posts
    ->  from post
    ->  group by postedBy_id
    ->  having count(*) >= amount;
    ->  end//
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> call User_with_greater_post(1);
+------+-------+
| User | posts |
+------+-------+
|    1 |     2 |
|    2 |     1 |
|    5 |     1 |
+------+-------+
3 rows in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql> call User_with_greater_post(2);
+------+-------+
| User | posts |
+------+-------+
|    1 |     2 |
+------+-------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql>
```

Procedure 3:

```
mysql>
mysql> DELIMITER //
mysql> CREATE PROCEDURE finduserid ( username VARCHAR(20))
    -> BEGIN
    -> SELECT * FROM profile WHERE user_name=username;
    -> END //
Query OK, 0 rows affected (0.01 sec)

mysql> DELIMITER ;
mysql> CALL finduserid('a');
+-----------+------------+------+------------+
| user_name | DOB        | bio  | profile_id |
+-----------+------------+------+------------+
| a         | 2012-07-12 | abcd |          1 |
+-----------+------------+------+------------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql>
```

Procedure 4:

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE userpost ( user_id INTEGER ,postid INTEGER)
    -> BEGIN
    ->     SELECT * FROM post WHERE postedBy_id=user_id AND postid=post.post_id ORDER BY post_id;
    -> END //
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> call userpost (1,7);
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       7 | img       | public     |           1 | 2022-05-01 19:08:56 |
+---------+-----------+------------+-------------+---------------------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

mysql>
```

Procedure 5:

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE intrestedin (userid INTEGER )
    -> BEGIN
    ->     SELECT *  FROM intrest WHERE user_id=userid;
    -> END//
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> CALL intrestedin(1);
+--------------+---------+
| intrested_in | user_id |
+--------------+---------+
| cat          |       1 |
| fish         |       1 |
+--------------+---------+
2 rows in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)
```

```
mysql> DELIMITER //
mysql> CREATE PROCEDURE blockelist(userid INTEGER )
    -> BEGIN
    ->     SELECT usid AS 'user id' ,blockedby FROM blocklist WHERE blockedBy=userid ;
    -> END//
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> call blockelist(2);
+---------+-----------+
| user id | blockedby |
+---------+-----------+
|       1 |         2 |
+---------+-----------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql>
```

Function 1:

```
mysql> select * from members;
+--------+------+
| mem_id | Gid  |
+--------+------+
|      1 |    1 |
|      2 |    2 |
|      2 |    3 |
|      4 |    2 |
|      4 |    4 |
|      4 |    7 |
|      5 |    1 |
|      5 |    3 |
|      6 |    4 |
+--------+------+
9 rows in set (0.00 sec)
```

```
mysql> delimiter //
mysql> create function Total_Groups( abc int)
    -> RETURNS INT
    -> NOT DETERMINISTIC
    -> begin
    ->  declare total int;
    ->  set total = (select count(*)
    ->   from members where mem_id = abc);
    ->  return total;
    ->  end//
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> select Total_Groups(4);
+-----------------+
| Total_Groups(4) |
+-----------------+
|               3 |
+-----------------+
1 row in set (0.00 sec)

mysql>
```

Function 2:

```
mysql> select * from post;
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       2 | img       | public     |           2 | 2022-04-30 16:08:55 |
|       5 | img       | private    |           1 | 2022-04-30 16:08:56 |
|       6 | img       | public     |           5 | 2022-04-30 16:08:56 |
|       7 | img       | public     |           1 | 2022-04-30 16:08:56 |
+---------+-----------+------------+-------------+---------------------+
4 rows in set (0.00 sec)
```

```
mysql> delimiter //
mysql> create function User_Status(abc int)
    -> RETURNS VARCHAR(40)
    -> NOT DETERMINISTIC
    -> begin
    ->  declare store int default 0;
    ->  set store = (select count(*)
    ->   from post where postedBy_id = abc);
    ->  if store > 0 then
    ->   return 'User is Active. User posted some posts';
    ->  else
    ->   return 'Inactive User !!! No Posts';
    ->  end if;
    ->  end//
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> delimiter ;
```

```
mysql> select User_Status(1) as Status;
+-----------------------------------------+
| Status                                  |
+-----------------------------------------+
| User is Active. User posted some posts  |
+-----------------------------------------+
1 row in set (0.00 sec)

mysql> select User_Status(4) as Status;
+---------------------------+
| Status                    |
+---------------------------+
| Inactive User !!! No Posts |
+---------------------------+
1 row in set (0.00 sec)

mysql>
```

Function 3:

```
mysql> DELIMITER //
mysql> CREATE FUNCTION groupsize ( groupid INTEGER )
    -> RETURNS INT NOT DETERMINISTIC
    -> BEGIN
    ->     DECLARE i Integer DEFAULT 0;
    ->     SELECT COUNT(*) INTO i  FROM members where  Gid=groupid;
    ->     RETURN i;
    -> END//
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> SELECT groupsize(1);
+--------------+
| groupsize(1) |
+--------------+
|            2 |
+--------------+
1 row in set (0.00 sec)
```

Function 4:

```
mysql> DELIMITER //
mysql>
mysql> CREATE FUNCTION addfriend(userid INTEGER,urer2 INTEGER)
    -> RETURNS varchar(12) NOT DETERMINISTIC
    -> BEGIN
    ->     INSERT INTO  friends ( fk_user,friend ) VALUES(
    ->     userid,urer2
    ->     );
    ->     INSERT INTO  friends ( fk_user,friend ) VALUES(
    ->     urer2,userid
    ->     );
    ->     RETURN "done";
    -> END//
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> SELECT addfriend( 1,3);
+-----------------+
| addfriend( 1,3) |
+-----------------+
| done            |
+-----------------+
1 row in set (0.01 sec)

mysql> SELECT * FROM friends;
+--------+---------+
| friend | fk_user |
+--------+---------+
|      3 |       1 |
|      1 |       3 |
+--------+---------+
2 rows in set (0.00 sec)

mysql>
```

Function 5:

```
mysql> DELIMITER //
mysql> CREATE FUNCTION CHECKfriends(user1 INTEGER,user2 INTEGER)
    -> RETURNS VARCHAR(12) NOT DETERMINISTIC
    -> BEGIN
    ->     DECLARE i INT;
    ->     DECLARE j INT;
    ->     SELECT COUNT(*) INTO i FROM friends WHERE fk_user = user1 AND friend = user2;
    ->     SELECT COUNT(*) INTO j FROM friends WHERE fk_user = user2 AND friend = user1;
    ->     IF ( i=j AND i>0)
    ->     THEN
    ->         RETURN "true";
    ->     ELSE
    ->         RETURN "false";
    ->     END IF;
    -> END//
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql> SELECT CHECKfriends(1,5);
+--------------------+
| CHECKfriends(1,5) |
+--------------------+
| false              |
+--------------------+
1 row in set (0.00 sec)
```

5) Triggers

Trigger 1:

```
mysql>
mysql> delimiter ;
mysql> delimiter //
mysql> create trigger Admin_Adding
    -> after insert
    -> on teams for each row
    -> begin
    ->  insert into members values(new.GAdmin,new.Gid);
    -> end//
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> delimiter ;
mysql> select * from teams;
```

```
mysql> select * from teams;
+-----+-------+--------+
| Gid | Gname | GAdmin |
+-----+-------+--------+
|   1 | IT-24 |      1 |
|   2 | IT-25 |      2 |
|   3 | IT-26 |      3 |
|   4 | CS-24 |      4 |
|   5 | CS-25 |      5 |
|   6 | CS-26 |      6 |
+-----+-------+--------+
6 rows in set (0.00 sec)

mysql> insert into teams(Gname,GAdmin) values('NITK',4);
Query OK, 1 row affected (0.01 sec)

mysql> select * from teams;
+-----+-------+--------+
| Gid | Gname | GAdmin |
+-----+-------+--------+
|   1 | IT-24 |      1 |
|   2 | IT-25 |      2 |
|   3 | IT-26 |      3 |
|   4 | CS-24 |      4 |
|   5 | CS-25 |      5 |
|   6 | CS-26 |      6 |
|   7 | NITK  |      4 |
+-----+-------+--------+
7 rows in set (0.00 sec)
```

```
mysql> select * from members;
+--------+------+
| mem_id | Gid  |
+--------+------+
|      1 |    1 |
|      2 |    2 |
|      2 |    3 |
|      3 |    4 |
|      4 |    2 |
|      4 |    4 |
|      4 |    7 |
|      5 |    1 |
|      5 |    3 |
|      6 |    4 |
+--------+------+
10 rows in set (0.01 sec)
```

Trigger 2:

```
mysql> delimiter //
mysql> create trigger Deleting_Post
    -> after update
    -> on report for each row
    -> begin
    ->  if new.report_type = 'violence' then
    ->   delete from post where new.post_id = post.post_id;
    ->  end if;
    -> end//
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> delimiter ;
mysql> select * from post;
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       1 | img       | public     |           1 | 2022-04-30 16:08:55 |
|       2 | img       | public     |           2 | 2022-04-30 16:08:55 |
|       3 | video     | public     |           3 | 2022-04-30 16:08:55 |
|       4 | img       | private    |           3 | 2022-04-30 16:08:56 |
|       5 | img       | private    |           1 | 2022-04-30 16:08:56 |
|       6 | img       | public     |           5 | 2022-04-30 16:08:56 |
|       7 | img       | public     |           1 | 2022-04-30 16:08:56 |
+---------+-----------+------------+-------------+---------------------+
7 rows in set (0.00 sec)
```

```
mysql> select * from report;
+---------+------------+-------------+---------------------------------+
| post_id | reportedBy | report_type | disciption                      |
+---------+------------+-------------+---------------------------------+
|       2 |          1 | harassment  | asdfghjklhgftdsdrftghcfggfgfxg |
|       1 |          2 | Spam        | asdfghjklhgftdsdrftghcfggfgfxg |
+---------+------------+-------------+---------------------------------+
2 rows in set (0.00 sec)

mysql> update report set report_type = 'violence' where post_id = 1;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from post;
+---------+-----------+------------+-------------+---------------------+
| post_id | post_type | visibility | postedBy_id | posted_on           |
+---------+-----------+------------+-------------+---------------------+
|       2 | img       | public     |           2 | 2022-04-30 16:08:55 |
|       3 | video     | public     |           3 | 2022-04-30 16:08:55 |
|       4 | img       | private    |           3 | 2022-04-30 16:08:56 |
|       5 | img       | private    |           1 | 2022-04-30 16:08:56 |
|       6 | img       | public     |           5 | 2022-04-30 16:08:56 |
|       7 | img       | public     |           1 | 2022-04-30 16:08:56 |
+---------+-----------+------------+-------------+---------------------+
6 rows in set (0.01 sec)
```

```
mysql> select * from report;
+---------+------------+-------------+--------------------------------+
| post_id | reportedBy | report_type | disciption                     |
+---------+------------+-------------+--------------------------------+
|       2 |          1 | harassment  | asdfghjklhgftdsdrftghcfggfgfxg |
+---------+------------+-------------+--------------------------------+
1 row in set (0.01 sec)
```

Trigger 3:

```
mysql> select * from PROFILE;
+-----------+------------+------+------------+
| user_name | DOB        | bio  | profile_id |
+-----------+------------+------+------------+
| a         | 2012-07-12 | abcd |          1 |
| b         | 2001-02-22 | efg  |          2 |
| c         | 2001-03-03 | hij  |          3 |
| d         | 2001-04-04 | lmn  |          4 |
| e         | 2001-02-05 | opq  |          5 |
+-----------+------------+------+------------+
5 rows in set (0.00 sec)

mysql> select * from users;
+---------+------------+--------------+
| user_id | email      | phone        |
+---------+------------+--------------+
|       1 | a@mail.com | 917707909733 |
|       2 | b@mail.com | 917707903397 |
|       3 | c@mail.com | 91707909707  |
|       4 | d@mail.com | 917707902333 |
|       5 | e@mail.com | 917707901333 |
|       6 | h@mail.com | 917707901233 |
|       7 | i@mail.com | 917707909721 |
|       8 | j@mail.com | 917707909234 |
|       9 | k@mail.com | 917707909235 |
+---------+------------+--------------+
9 rows in set (0.00 sec)
```

```
mysql> delimiter //
mysql> create trigger Remove_User
    -> after delete
    -> on PROFILE for each row
    -> begin
    ->  delete from users where old.profile_id = user_id;
    -> end//
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> delimiter ;
mysql> delete from PROFILE where profile_id = 3;
Query OK, 1 row affected (0.02 sec)
```

```
mysql> select * from PROFILE;
+-----------+------------+------+------------+
| user_name | DOB        | bio  | profile_id |
+-----------+------------+------+------------+
| a         | 2012-07-12 | abcd |          1 |
| b         | 2001-02-22 | efg  |          2 |
| d         | 2001-04-04 | lmn  |          4 |
| e         | 2001-02-05 | opq  |          5 |
+-----------+------------+------+------------+
4 rows in set (0.00 sec)

mysql> select * from users;
+---------+------------+--------------+
| user_id | email      | phone        |
+---------+------------+--------------+
|       1 | a@mail.com | 917707909733 |
|       2 | b@mail.com | 917707903397 |
|       4 | d@mail.com | 917707902333 |
|       5 | e@mail.com | 917707901333 |
|       6 | h@mail.com | 917707901233 |
|       7 | i@mail.com | 917707909721 |
|       8 | j@mail.com | 917707909234 |
|       9 | k@mail.com | 917707909235 |
+---------+------------+--------------+
8 rows in set (0.00 sec)
```