# DATABASE MANAGEMENT SYSTEM MINIPROJECT (UE20CS301)

# **"CRIME REPORT MANAGEMENT SYSTEM"**

# **Submitted by**

Name: Chaitanya Madhav R

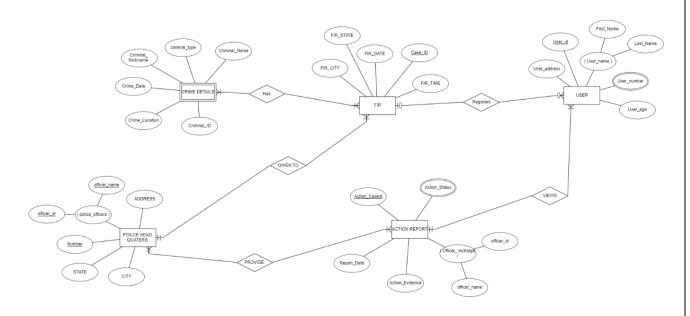
**SRN: PES1UG20CS634** 

**V Semester K-Section** 

# **Abstract:**

Aim of the project is to build an efficient online crime reporting management system, where users can register there crime reports online and the system with the designed workflow assigns and solves the crime that has been reported.

# **ER DIAGRAM:**



# **Relational Schema:**

1	lser-Dotails
J.	irst-Name Zest-Name User-id User-address User-no User-
F	IR
2	ity State Date Case To TIME
C	rine_Details
CY	iminal Criminal Comminal Crime crime crime and nickname Type Location out
Pe	lice-quaters
A	dobers city state number officeria officernan
Ac	tion-suport
-	tion-cavid Action Report- Enidence Official of
Ac	March Charle

#### **DDL STATEMENTS:**

```
CREATE TABLE crime_details (
  criminal_id int(5) NOT NULL,
  criminal_name varchar(15) NOT NULL,
  criminal_type varchar(15) NOT NULL,
  criminal_NickName varchar(10) Default null,
  crime_Location text NOT NULL,
  crime_date DATE NOT NULL,
  primary key(criminal_id)
);
```

```
CREATE TABLE crime_fir(
  fir_time TIME NOT NULL,
  case_id varchar(5) NOT NULL,
  fir_date DATE NOT NULL,
  fir_state varchar(15) NOT NULL,
  fir_city varchar(15) NOT NULL,
  primary key(case_id,fir_city)
);
```

```
CREATE TABLE action_report (
    action_caseid int(5) NOT NULL,
    officer_name varchar(20) NOT NULL,
    officer_id int(5) NOT NULL,
    report_date DATE Default NULL,
    action_evidence varchar(20) Default NULL,
    action_status varchar(20),
    primary key(action_caseid),
    foreign key(officer_id) references police_quaters(q_officerid)
);
```

```
CREATE TABLE user_details(
  first_name varchar(8) NOT NULL,
  last_name varchar(8) DEFAULT Null,
  user_id int(5) NOT NULL,
  user_address text NOT NULL,
  user_number varchar(10) NOT NULL,
  user_age int(2) NOT NULL,
  primary key(user_id)
);
```

```
Create table police_quaters(
    q_city varchar(15) NOT NULL,
    q_state varchar(15) NOT NULL,
    q_number varchar(10) NOT NULL,
    q_address text NOT NULL,
    q_officername varchar(20) NOT NULL,
    q_officerid varchar(5) NOT NULL,
    primary key(q_number,q_officerid,q_officername),
    foreign key(q_city) references crime_fir(fir_city)
);
```

# Populating the database:

```
insert into crime details
VALUES(11, "JOHNSON", "MURDERER", "jonny", "Mandya", "1948-07-27");
insert into crime details
VALUES(12, "BERGLIM", "ROBBER", "berly", "Bengaluru", "1995-02-05");
insert into crime details VALUES(13, "ROBERT", "SERIAL
KILLER", "robby", "Mangaluru", "1999-09-30");
insert into crime_details VALUES(14,"JIMMY","THEIF","jimmy","Nasik","1989-10-
22");
insert into crime details VALUES(15, "STUART", "SERIAL
KILLER", "staum", "Dwarka", "1967-09-27");
insert into crime details VALUES(16, "LIMENET", "ROBBER", "limmy", "Delhi", "1998-
03-23");
insert into crime_details VALUES(17,"USEF","MURDERER","usef","Mumbai","1984-
04-17");
insert into crime details
VALUES(18, "MANHAT", "THIEF", "manhat", "Thiruvanathapuram", "1967-11-29");
```

```
insert into crime_fir VALUES("09:45:34",123,"1967-11-
30","Karnataka","Mangaluru");
insert into crime_fir VALUES("14:24:05",453,"1984-04-20","Gujarat","Surat");
insert into crime_fir VALUES("12:45:07",567,"1998-03-25","Tamil
Nadu","Kodaikanal");
insert into crime_fir VALUES("05:23:05",234,"1967-09-
27","Maharashtra","Nasik");
insert into crime_fir VALUES("07:58:34",668,"1989-10-
25","Karnataka","Bengaluru");
insert into crime_fir VALUES("12:49:50",231,"1999-09-30","Gujarat","Dwarka");
insert into crime_fir VALUES("04:56:56",655,"1995-02-07","Andhra
Pradesh","Vijayawada");
insert into crime_fir VALUES("22:56:22",111,"1948-07-
30","Maharashtra","Mumbai");
```

```
insert into action_report VALUES(123, "Ashoka Kumar", 2345, "1948-08-
30","NULL","NOT Completed");
insert into action report VALUES(453, "Vinod Chaubey", 9854, "1995-03-
07", "FOUND", "COMPLETED");
insert into action report VALUES(567, "Kempaiah", 3673, "1999-10-30", "NULL", "NOT
Completed");
insert into action_report VALUES(234,"M L Kumawat",3562,"1989-11-
25", "FOUND", "COMPLETED");
insert into action report VALUES(668, "Sanjeev Tripati", 2225, "1967-10-
27","NULL","NOT Completed");
insert into action_report VALUES(231,"Vijay Salaskar",7363,"1998-04-
25", "FOUND", "COMPLETED");
insert into action_report VALUES(655, "Rakesh Maria", 2346, "1984-05-
20","NULL","NOT Completed");
insert into action report VALUES(111, "Chandrappa", 6464, "1967-12-
30", "FOUND", "COMPLETED");
```

```
insert into user details VALUES("Madhav", "Sharma", 22, "Maleshwaram 2nd
stage",9876543212,22);
insert into user_details VALUES("Lokesh","Vittal",23,"Banshankari 3rd
block",9676543212,45);
insert into user_details VALUES("Neeraj", "Sharma", 24, "Kengeri satellite
town",9896543212,39);
insert into user_details VALUES("Pardeep", "Dahiya", 25, "Banshankari 4rh
block",9996543212,18);
insert into user_details VALUES("Sanjeev", "Deshmuk", 26, "Maleshwaram 1st
stage",9336543212,27);
insert into user_details VALUES("Manoj", "Prateek", 27, "Govindaraja
nagara",9876553212,34);
insert into user_details VALUES("Rakesh", "Sangroya", 28, "Hubli main
street",9878843212,56);
insert into user_details VALUES("Chandra", "Reddy", 29, "Maleshwaram 3rd
stage",8876543212,70);
```

```
insert into police_quaters VALUES("Delhi", "Karnataka", 9876543211, "Maleshwaram")
2nd stage", "Ashoka Kumar", 2345);
insert into police quaters
VALUES("Bengaluru", "Gujarat", 9876543212, "Banshankari 3rd block", "Vinod
Chaubey", 9854);
insert into police_quaters VALUES("Mumbai", "Maharashtra", 8823543212, "Kengeri
satellite town","Kempaiah",3673);
insert into police_quaters VALUES("Madur", "Tamil Nadu", 8876554212, "Banshankari
4rh block","M L Kumawat",3562);
insert into police_quaters VALUES("Dwarka", "Andhra
Pradesh",8346543212, "Maleshwaram 1st stage", "Sanjeev Tripati",2225);
insert into police quaters
VALUES("Mangaluru", "Maharashtra", 8877543212, "Govindaraja nagara", "Vijay
Salaskar",7363);
insert into police quaters VALUES("Nasik", "Gujarat", 8876599212, "Hubli main
street", "Rakesh Maria", 2346);
insert into police_quaters VALUES("Vijayawada","Tamil
Nadu",9976543212,"Maleshwaram 3rd stage","Chandrappa",6464);
```

#### **TOOLS USED:**

**Front End:** Streamlit

**Backend**: xampp server(sql framework)

#### **Queries:**

### **JOIN QUERIES:**

#### **REGULAR JOINS**

1. Selects fir as well as police quarter details using city as reference:

fir_time   case_id	fir_date	fir_state	fir_city	q_city	q_state	q_number	q_address	q_officername	q_officerid
12:49:50   231	1999-09-30	Guiarat	Dwarka	Dwarka	Andhra Pradesh	8346543212	Maleshwaram 1st stage	Sanieev Tripati	2225
00:00:00   111	1948-08-21	Maharashtra	Mumbai	Mumbai	Maharashtra	8823543212	Kengeri satellite town	Kempaiah	3673
05:23:05   234	1967-09-27	Maharashtra	Nasik	Nasik	Gujarat	8876599212	Hubli main street	Rakesh Maria	2346
09:45:34   123	1967-11-30	Karnataka	Mangaluru	Mangaluru	Maharashtra	8877543212	Govindaraja nagara	Vijay Salaskar	7363
07:58:34   668	1989-10-25	Karnataka	Bengaluru	Bengaluru	Gujarat	9876543212	Banshankari 3rd block	Vinod Chaubey	9854
07:58:34   668	1989-10-25	Karnataka	Bengaluru	Bengaluru	Tamil Nadu	9976543212	Maleshwaram 3rd stage	Chandrappa	6464

2. Select all fir along with the police head quarters details.

```
MariaDB [demo_crime]> select * from crime_fir INNER JOIN police_quaters on crime_fir.case_id=crime_details.criminal_id;
ERROR 1054 (42522): Unknown column 'crime_details.criminal_id' in 'on clause'
MariaDB [demo_crime]> select * from crime_fir INNER JOIN crime_details on crime_fir.case_id=crime_details.criminal_id;
Empty set (0.001 sec)
```

3. Select all the officers and the cases they are involved.

```
MariaDB [demo_crime]> SELECT crime_fir.case_id, action_report.officer_name
    -> FROM crime_fir
    -> INNER JOIN action_report ON crime_fir.case_id = action_report.action_caseid;
case_id | officer_name
           Chandrappa
           Ashoka Kumar
           Vijay Salaskar
 231
 234
           M L Kumawat
 453
           Vinod Chaubey
 567
            Kempaiah
 655
           Rakesh Maria
 668
           Sanjeev Tripati
8 rows in set (0.001 sec)
MariaDB [demo_crime]> 🕳
```

4. Selects all fir details along with officers in charge.

```
MariaDB [demo_crime]> select * from crime_fir INNER JOIN police_quaters on crime_fir.fir_city=police_quaters.q_city;

| fir_time | case_id | fir_date | fir_state | fir_city | q_city | q_state | q_number | q_address | q_officername | q_officerid | |
| 12:49:50 | 231 | 1999-09-30 | Gujarat | Dwarka | Dwarka | Andhra Pradesh | 8346543212 | Maleshwaram 1st stage | Sanjeev Tripati | 2225 |
| 00:00:00 | 111 | 1948-08-21 | Maharashtra | Mumbai | Mumbai | Mumbai | Maharashtra | 8823543212 | Kengeri satellite town | Kempaiah | 3673 |
| 05:23:05 | 234 | 1967-09-27 | Maharashtra | Nasik | Gujarat | 8876599212 | Hubli main street | Rakesh Maria | 2346 |
| 09:45:34 | 123 | 1967-11-30 | Karnataka | Mangaluru | Mangaluru | Maharashtra | 8877543212 | Govindaraja | angara | Vijay Salaskar | 7363 |
| 07:58:34 | 668 | 1989-10-25 | Karnataka | Bengaluru | Bengaluru | Gujarat | 9876543212 | Banshankari 3rd block | Vinod Chaubey | 9854 |
| 07:58:34 | 668 | 1989-10-25 | Karnataka | Bengaluru | Bengaluru | Tamil Nadu | 9976543212 | Maleshwaram 3rd stage | Chandrappa | 6464 |
| 6 rows in set (0.011 sec)
```

5. Matches criminals who have same criminal type using Self Join: (Co-related query)

```
tariaDB [demo_crime]> SELECT A.criminal_name AS criminal_name1, B.criminal_name AS criminal_name2, A.criminal_type
     -> FROM crime_details A, crime_details B
-> WHERE A.criminal_id <> B.criminal_id
     -> AND A.criminal_type = B.criminal_type
-> ORDER BY A.criminal_type;
 criminal_name1 | criminal_name2 | criminal_type |
  LIMENET
                          BERGLIM
                                                  ROBBER
                                                  ROBBER
SERIAL KILLER |
  ROBERT
                          STUART
  JOHNSON
                          STUART
  STUART
                        ROBERT
8 rows in set (0.001 sec)
MariaDB [demo_crime]> _
```

6. Selects all the fir details and case id which has been reported to police head quarters. (Nested Query)

# **Aggregate Functions (at least 2)**

1. Retrieve all the maximum age of the users.

2. Retrieve all the minimum age of the users.

3. Retrieve the count from table crime details.

# **Set Operations (at least 2)**

1. Retrieve common cases that police quarters and action report is involved in.

```
MariaDB [demo_crime]> select * from action_report INTERSECT select * from police_quaters;
Empty set (0.018 sec)
```

2. Retrieve the action report (action\_caseid = 453) with a new evidence and a new action status.

```
MariaDB [demo_crime]> UPDATE action_report
    -> SET action_evidence = 'NOT FOUND', action_status= 'not completed'
-> WHERE action_caseid = 453;
Query OK, 1 row affected (0.016 sec)
Rows matched: 1 Changed: 1 Warnings: 0
MariaDB [demo crime]> select * from action report;
 action_caseid | officer_name
                                   | officer_id | report_date | action_evidence | action_status |
                                            6464 |
2345 |
            111 |
                  Chandrappa
                                                   1967-12-30
                                                                  FOUND
                                                                                     COMPLETED
            123
                  Ashoka Kumar
                                                   1948-08-30
                                                                  NULL
                                                                                     NOT Completed
                  Vijay Salaskar
                                                   1998-04-25
                                                                  FOUND
                                                                                     COMPLETED
                  M L Kumawat
                                                   1989-11-25
                                                                  FOUND
                                                                                     COMPLETED
                                                                  NOT FOUND
                  Vinod Chaubey
                                            9854
                                                   1995-03-07
                                                                                     not completed
                                                   1999-10-30
            567
                  Kempaiah
                                                                  NULL
                                                                                     NOT Completed
                                                   1984-05-20
                  Rakesh Maria
                                                                  NULL
                                                                                     NOT Completed
            668 | Sanjeev Tripati
                                                   1967-10-27
                                                                                     NOT Completed
8 rows in set (0.001 sec)
```

3. Get the crime details (criminal id = 11) with similar criminal type.

```
riaDB [demo_crime]> UPDATE crime_details
-> SET criminal_type = 'SERIAL KILLER'
-> WHERE criminal_id = 11;
ery OK, 1 row affected (0.012 sec)
MariaDB [demo_crime]> select * from crime_details;
 criminal_id | criminal_name | criminal_type | criminal_NickName | crime_Location
                 11 | JOHNSON
12 | BERGLIM
13 | ROBERT
14 | JIMMY
15 | STUART
16 | LIMENET
17 | USEF
18 | MANHAT
                                                         SERIAL KILLER
ROBBER
SERIAL KILLER
THEIF
SERIAL KILLER
                                                                                                                              Mandya
Bengaluru
                                                                                                                                                                   1995-02-05
1999-09-30
1989-10-22
1967-09-27
                                                                                                                             Mangaluru
Nasik
Dwarka
                                                                                       robby
jimmy
                                                                                        staum
                                                          ROBBER
MURDERER
                                                                                                                             Delhi
Mumbai
                                                                                                                                                                    1998-03-23
1984-04-17
                                                                                                                              Thiruvanathapuram
                                                                                                                                                                   1967-11-29
                                                                                        manhat
 rows in set (0.001 sec)
NariaDB [demo_crime]> _
```

#### View (atleast 1)

Demonstrate creation and querying one view.

#### Create a view to display criminal details from location Delhi.

```
MariaDB [demo_crime]> create view show_dehli_Criminals AS
-> select criminal_name,criminal_id
-> from crime_details
-> where crime_location = 'DELHI';
Query OK, 0 rows affected (0.016 sec)
```

```
ariaDB [demo_crime]> select * from show_dehli_criminals;
 criminal_name | criminal_id |
 LIMENET
 row in set (0.001 sec)
MariaDB [demo_crime]> select * from crime_details;
 criminal_id | criminal_name | criminal_type | criminal_NickName | crime_Location
                                                                                        | crime date |
           0
                                SERIAL KILLER
                                                                     Bengaluru
                                                                                          1978-12-22
                                                                                          1948-07-27
                JOHNSON
                                SERIAL KILLER
                                                 jonny
                                                                     Mandya
                BERGLIM
                                ROBBER
                                                                                          1995-02-05
                                                 berly
                                                                     Bengaluru
                                                                                          1999-09-30
                ROBERT
                                SERIAL KILLER
                                                 robby
                                                                     Mangaluru
           14
                JIMMY
                                THEIF
                                                 jimmy
                                                                     Nasik
                                                                                          1989-10-22
                                                                     Dwarka
           15
                STUART
                                SERIAL KILLER
                                                                                          1967-09-27
                                                 staum
                LIMENET
           16
                                ROBBER
                                                 limmy
                                                                     Delhi
                                                                                          1998-03-23
                                MURDERER
                                                                                          1984-04-17
                USEF
                                                 usef
                                                                     Mumbai
                MANHAT
           18
                                THIEF
                                                 manhat
                                                                     Thiruvanathapuram
                                                                                          1967-11-29
                Mohandas
                                ROBBER
                                                 Mohan
                                                                     Nasik
                                                                                          2022-11-01
10 rows in set (0.001 sec)
MariaDB [demo_crime]> _
```

#### **Triggers:**

Create a Function or a Procedure. State the objective of the function / Procedure. Run and display the results.

# Create a trigger to not allow insertion of crime details, if the user's age is less than 12 years.

```
MariaDB [(none)]> use demo_crime
Database changed
MariaDB [demo_crime]> select * from user_details;
  first_name | last_name | user_id | user_address
                                                                                                         user_number | user_age |
                                                     22 | Maleshwaram 2nd stage
23 | Banshankari 3rd block
24 | Kengeri satellite town
25 | Banshankari 4rh block
26 | Maleshwaram 1st stage
27 | Govindaraja nagara
28 | Hubli main street
                                                                                                            9876543212
  Madhav
                        Sharma
Vittal
                                                                                                                                               22
45
39
18
27
34
56
                                                                                                            9676543212
9896543212
  Neeraj
Pardeep
                         Sharma
                        Dahiya
Deshmuk
                                                                                                            9996543212
9336543212
  Sanjeev
  Manoj
Rakesh
                                                                                                            9876553212
9878843212
                         Sangroya
                                                       29 | Maleshwaram 3rd stage
                                                                                                                                                70
  rows in set (0.017 sec)
MariaDB [demo_crime]> insert into user_details VALUES("Madhav","Sharma",22,"Maleshwaram 2nd stage",9876543212,9);
ERROR 1644 (45000): ERROR: AGE MUST BE ATLEAST 25 YEARS!
 |ariaDB [demo_crime]
```

#### **FUNCTIONS:**

Arrest the criminals immediately if crime location is grater than one and type is "SERIAL KILLERS".

```
MariaDB [demo_crime]> delimiter $$
MariaDB [demo_crime]> create function crime_arrest(criminal_id varchar(20))
    -> returns varchar(50)
    -> begin
    -> declare print varchar(50);
    -> declare count int;
    -> select count(crime_location) into count from crime_details where criminal_type = "SERIAL KILLER";
    -> if count > 1 then
    -> set print = "ARREST IMMEDIATELY";
    -> else
    -> set print = "ARREST Later";
    -> end if;
    -> return print;
    -> end$$
Query OK, 0 rows affected (0.015 sec)
```



## **Developing a Frontend**

The frontend should support

1.Addition, Modification and Deletion of records from any chosen table.

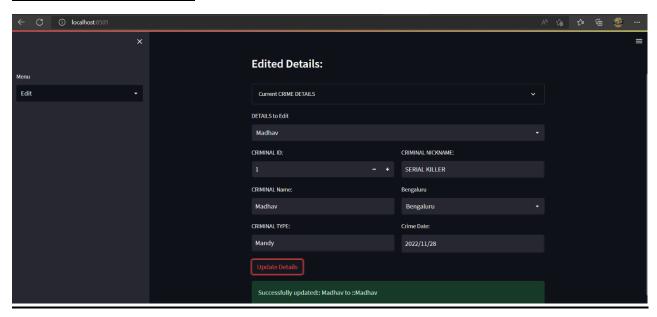
#### a. **INSERT DETAILS:**

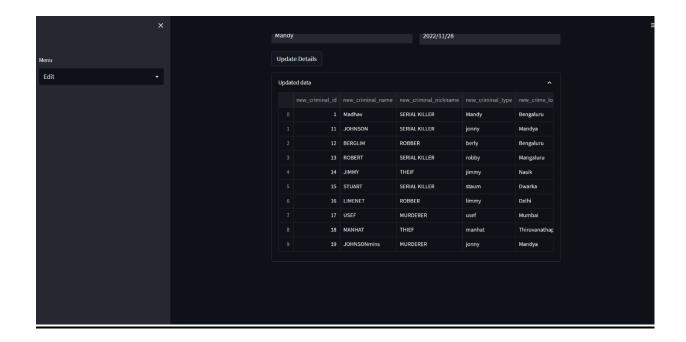


#### **b.VIEW DETAILS**:

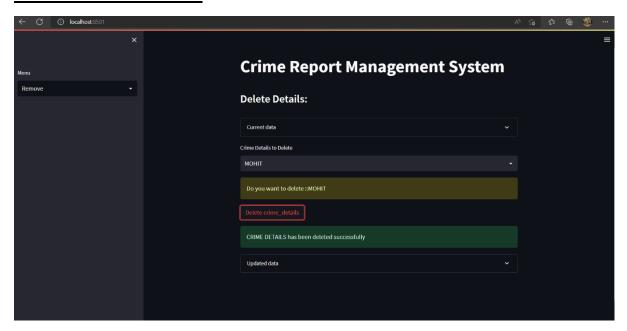


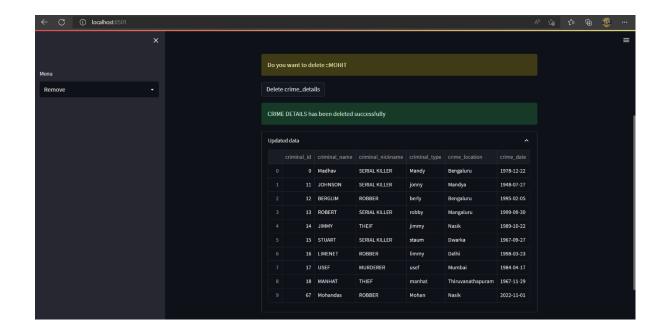
#### c.UPDATE DETAILS:





#### **d. DELETE DETAILS:**





2. There should be a window to accept and run any SQL statement and display the result.

