



PES UNIVERSITY, BANGALORE  
Department of Computer Science and Engineering

**B.TECH. (CSE)**  
**IV, VIII**  
**SEMESTER**  
**UE20CS301 – Database Management Systems (Minors)**  
**Mini-Project Report**  
**on**  
**Title-Police Management System**

SUBMITTED BY

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**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
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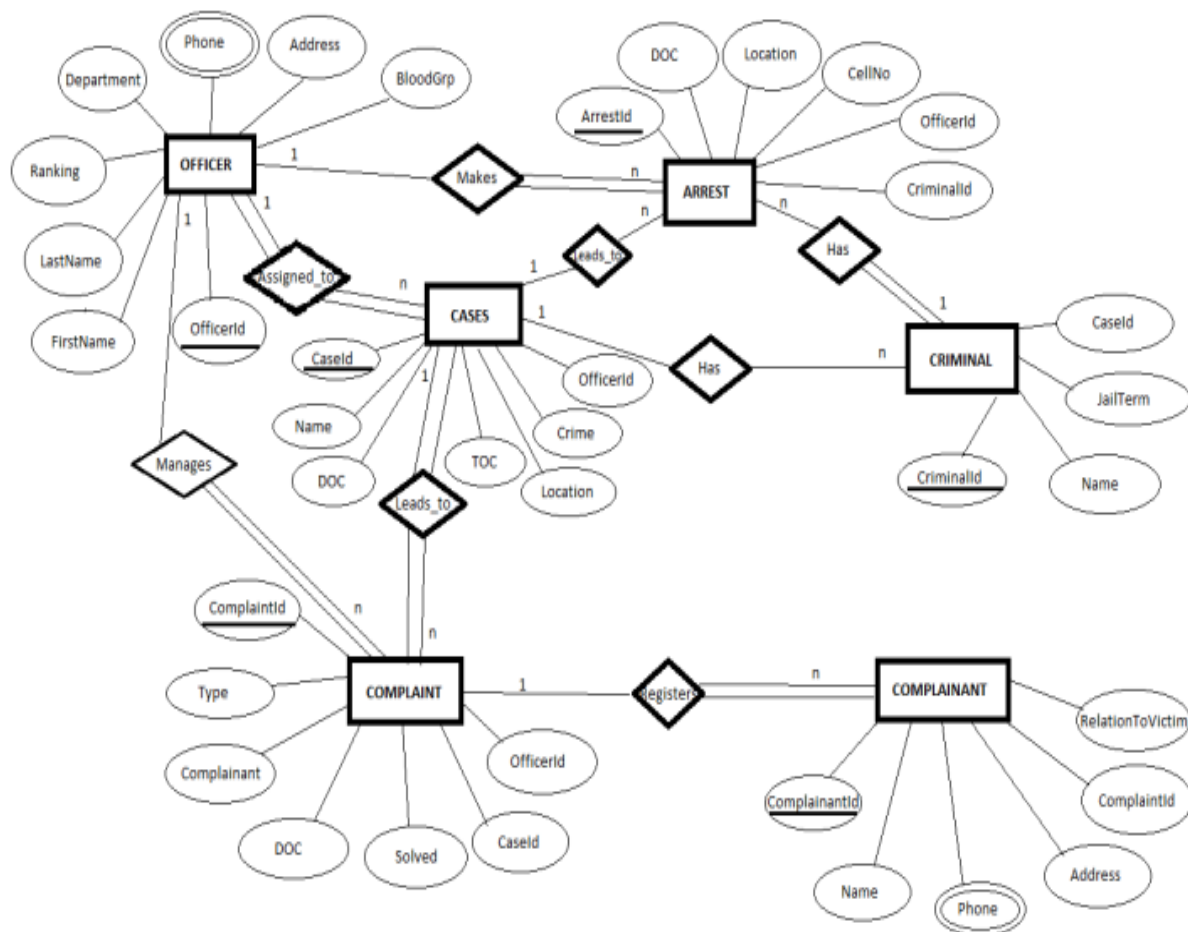


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## **PROBLEM STATEMENT(SYNOPSIS)**

This project deals with creation of a database of the police management system. It has information about-Officers, cases, complaints, complainants, arrests and criminals. Tables have been formed on each and the ER diagram establishes the relationship between the entities and attributes. The project also demonstrates the performance of certain operations like create, select, delete, update, read, trigger, functions and many more. We have used github, streamlit, python and xampp to execute the same. There are screenshots of the table after performing each operation along with the sql query command for the same.

## ER DIAGRAM





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## RELATIONAL SCHEMA

### OFFICER

| <u>OfficerId</u> | FirstName | LastName | Ranking | Department | Phone | Address | BloodGrp |
|------------------|-----------|----------|---------|------------|-------|---------|----------|
|------------------|-----------|----------|---------|------------|-------|---------|----------|

### CASES

| <u>CasId</u> | Name | DOC | TOC | Location | CRIME | OfficerId |
|--------------|------|-----|-----|----------|-------|-----------|
|--------------|------|-----|-----|----------|-------|-----------|

### COMPLAINT

| <u>ComplaintId</u> | Type | Complainant | DOC | Solved | CasId | OfficerId |
|--------------------|------|-------------|-----|--------|-------|-----------|
|--------------------|------|-------------|-----|--------|-------|-----------|

### COMPLAINANT

| <u>ComplainantId</u> | Name | Phone | Address | ComplaintId | RelationToVictim |
|----------------------|------|-------|---------|-------------|------------------|
|----------------------|------|-------|---------|-------------|------------------|

### CRIMINAL

| <u>CriminalId</u> | Name | JailTerm | CasId |
|-------------------|------|----------|-------|
|-------------------|------|----------|-------|

### ARREST

| <u>ArrestId</u> | DOC | Location | CellNo | OfficerId | CriminalId |
|-----------------|-----|----------|--------|-----------|------------|
|-----------------|-----|----------|--------|-----------|------------|



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## INDIVIDUAL CONTRIBUTION OF EACH TEAM MEMBER

1. **Vighnesh**- ER diagram and Relational Schema along with join operation
2. **Krishna**- Create,Insert,Select, Making of report.
3. **Sanraj**- Update, delete operations in CRUD. Creating trigger and function.
4. **Adithya**- Setting up streamlit. Create and Read operations in CRUD. Debugging Update function. Creating triggers and function and using union and aggregate.



## OPERATIONS ON THE DATABASE WITH SCREENSHOTS

### CREATE

Create the tables titled officer, cases, complainant, complaint, arrest and criminal  
Add suitable datatypes

1.officer-Add the fields-Officer Id(Primary Key),First name, Last name, Ranking,Department,phone ,Address and Blood group

```
CREATE TABLE `officer` (  
  `OfficerId` varchar(20) NOT NULL,  
  `FirstName` text DEFAULT NULL,  
  `LastName` text DEFAULT NULL,  
  `Ranking` text DEFAULT NULL,  
  `Department` text DEFAULT NULL,  
  `Phone` text DEFAULT NULL,  
  `Address` text DEFAULT NULL,  
  `BloodGrp` text DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds)

```
CREATE TABLE `officer` (  
  `OfficerId` varchar(20) NOT NULL, `FirstName` text DEFAULT NULL, `LastName` text DEFAULT NULL, `Ranking` text  
  DEFAULT NULL, `Department` text DEFAULT NULL, `Phone` text DEFAULT NULL, `Address` text DEFAULT NULL, `BloodGrp` text  
  DEFAULT NULL )  
ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

### Output

| OfficerId | FirstName | LastName | Ranking | Department | Phone | Address | BloodGrp |
|-----------|-----------|----------|---------|------------|-------|---------|----------|
|-----------|-----------|----------|---------|------------|-------|---------|----------|

2.Cases-Add the fields;Case Id(primary key), Name, Date, Location, crime, Officer Id.

```
CREATE TABLE `cases` (  
  `CaseId` varchar(20) NOT NULL,  
  `Name` text DEFAULT NULL,  
  `DOC` date DEFAULT NULL,  
  `Location` text DEFAULT NULL,  
  `CRIME` text DEFAULT NULL,  
  `OfficerId` varchar(20) DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds)

```
CREATE TABLE `cases` (  
  `CaseId` varchar(20) NOT NULL, `Name` text DEFAULT NULL, `DOC` date DEFAULT NULL, `Location` text DEFAULT NULL,  
  `CRIME` text DEFAULT NULL, `OfficerId` varchar(20) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

### Output

| Caseld | Name | DOC | Location | CRIME | OfficerId |
|--------|------|-----|----------|-------|-----------|
|--------|------|-----|----------|-------|-----------|



### 3.complaint-Add the fields;Complaint id(primary key), Type, Complainant,Date,Solved(Yes/no),Case Id, Officer Id

```
CREATE TABLE `complaint` (  
  `ComplaintId` varchar(20) NOT NULL,  
  `Type` text DEFAULT NULL,  
  `Complainant` text DEFAULT NULL,  
  `DOC` date DEFAULT NULL,  
  `Solved` text DEFAULT NULL,  
  `CaseId` varchar(20) DEFAULT NULL,  
  `OfficerId` varchar(20) DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

```
CREATE TABLE `complaint` (  
  `ComplaintId` varchar(20) NOT NULL, `Type` text DEFAULT NULL, `Complainant` text DEFAULT NULL, `DOC` date DEFAULT  
  NULL, `Solved` text DEFAULT NULL, `CaseId` varchar(20) DEFAULT NULL, `OfficerId` varchar(20) DEFAULT NULL ) ENGINE=InnoDB DEFAULT  
  CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

output

| ComplaintId | Type | Complainant | DOC | Solved | CaseId | OfficerId |
|-------------|------|-------------|-----|--------|--------|-----------|
|-------------|------|-------------|-----|--------|--------|-----------|

### 4.Complainant-Add the fields- Complainant Id(primary key),Name,Phone,Address,Complaint Id and relation to victim.

```
CREATE TABLE `complainant` (  
  `ComplainantId` varchar(20) NOT NULL,  
  `Name` text DEFAULT NULL,  
  `Phone` text DEFAULT NULL,  
  `Address` text DEFAULT NULL,  
  `ComplaintId` varchar(20) DEFAULT NULL,  
  `RelationToVictim` text DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

```
CREATE TABLE `complainant` (  
  `ComplainantId` varchar(20) NOT NULL, `Name` text DEFAULT NULL, `Phone` text DEFAULT NULL, `Address` text  
  DEFAULT NULL, `ComplaintId` varchar(20) DEFAULT NULL, `RelationToVictim` text DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4  
  COLLATE=utf8mb4_general_ci;
```

Output

| ComplainantId | Name | Phone | Address | ComplaintId | RelationToVictim |
|---------------|------|-------|---------|-------------|------------------|
|---------------|------|-------|---------|-------------|------------------|





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5.Arrest- Add the fields; Arrest Id(primary key), Date,Location,Cell number, Officer Id, Criminal Id.

```
CREATE TABLE `arrest` (  
  `ArrestId` varchar(20) NOT NULL,  
  `DOC` date DEFAULT NULL,  
  `Location` text DEFAULT NULL,  
  `CellNo` text DEFAULT NULL,  
  `OfficerId` varchar(20) DEFAULT NULL,  
  `CriminalId` varchar(20) DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
CREATE TABLE `arrest` ( `ArrestId` varchar(20) NOT NULL, `DOC` date DEFAULT NULL, `Location` text DEFAULT NULL, `CellNo` text DEFAULT NULL, `OfficerId` varchar(20) DEFAULT NULL, `CriminalId` varchar(20) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

Output

| ArrestId | DOC | Location | CellNo | OfficerId | CriminalId |
|----------|-----|----------|--------|-----------|------------|
|----------|-----|----------|--------|-----------|------------|

6.Criminal-Add the fields-Criminal Id(primary key),Name,Jail term and Case Id

```
CREATE TABLE `criminal` (  
  `CriminalId` varchar(20) NOT NULL,  
  `Name` text DEFAULT NULL,  
  `JailTerm` text DEFAULT NULL,  
  `CaseId` varchar(20) DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
CREATE TABLE `criminal` ( `CriminalId` varchar(20) NOT NULL, `Name` text DEFAULT NULL, `JailTerm` text DEFAULT NULL, `CaseId` varchar(20) DEFAULT NULL ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_general_ci;
```

Output

| CriminalId | Name | JailTerm | Caseld |
|------------|------|----------|--------|
|------------|------|----------|--------|



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## Insert

Q.Insert tuples for each field in the above created tables

```
1 INSERT INTO `officer` (`OfficerId`, `FirstName`, `LastName`, `Ranking`, `Department`, `Phone`, `Address`,  
2 `BloodGrp`) VALUES  
3 ('CI101', 'Ashok', 'Kumar', 'SI', 'Crime Investigation', '8872314512', 'Rajajinagar', 'Bpositive'),  
4 ('CI200', 'Rakesh', 'Karthik', 'Inspector', 'Crime Investigation', '9901234522', 'Majestic', 'Opositive'),  
5 ('CI217', 'Chandru', 'Rajkumar', 'Inspector', 'Crime Investigation', '8800044422', 'Banashankari',  
6 'Opositive'),  
7 ('CI340', 'Sunil', 'Vadeyar', 'Inspector', 'Crime Investigation', '7700345621', 'Jayanagar', 'Apositive'),  
8 ('PA400', 'Vinod', 'Bhatt', 'Inspector', 'Patrol', '7878787894', 'Nagasandra', 'Apositive');
```

```
INSERT INTO `cases` (`CaseId`, `Name`, `DOC`, `Location`, `CRIME`, `OfficerId`) VALUES  
( '20124545', 'Theft', '2023-02-01', 'Reserve bank of India', 'Stolen 5 Cr', 'CI340'),  
( '27123232', 'Murder', '2023-02-10', 'Bangalore Palace', 'Murder of 2', 'CI101'),  
( '30033451', 'Extortion', '2023-03-04', 'Church street', 'Extorted 1 Cr', 'CI200'),  
( '31456781', 'Rape', '2023-04-06', 'Nation Resort', 'Gang rape', 'CI217'),  
( '41232316', 'Murder', '2023-04-12', 'Mantri residency', 'Murder of a businessman', 'CI340');
```

```
INSERT INTO `complaint` (`ComplaintId`, `Type`, `Complainant`, `DOC`, `Solved`, `CaseId`, `OfficerId`)  
VALUES  
( '1011', 'Criminal', 'Rajesh Verma', '2023-02-28', 'Yes', '27123232', 'CI101'),  
( '1033', 'Criminal', 'Vijay Narayan', '2023-04-09', 'No', '31456781', 'CI101'),  
( '1045', 'Criminal', 'Vaishnavi S', '2023-04-12', 'No', '41232316', 'CI340'),  
( '2033', 'Criminal', 'Manish M', '2023-05-01', 'No', '41232316', 'CI217');
```

```
INSERT INTO `complainant` (`ComplainantId`, `Name`, `Phone`, `Address`, `ComplaintId`, `RelationToVictim`)  
VALUES  
( '20344', 'Manish M', '6666666622', 'Jayanagar', '1033', 'Friend'),  
( '20347', 'Dhanush M', '7474747488', 'KR Road', '1045', 'Son'),  
( '20351', 'Rajesh Verma', '7898765432', 'Jayanagar', '2033', 'Brother'),  
( '20355', 'Vaishnavi S', '9876543210', 'Yeshwanthpur', '1011', 'Sister'),  
( '20370', 'Vijay Narayan', '8884371232', 'Lalbagh', '1011', 'Father');
```

```
INSERT INTO `arrest` (`ArrestId`, `DOC`, `Location`, `CellNo`, `OfficerId`, `CriminalId`) VALUES  
( 'AR111', '2023-04-01', 'Mysuru Road', 'CJ101', 'CI101', '4041'),  
( 'AR222', '2023-04-03', 'UB city', 'CJ202', 'CI200', '4042'),  
( 'AR333', '2023-04-05', 'Orion mall', 'CJ144', 'CI340', '4043');
```

```
INSERT INTO `criminal` (`CriminalId`, `Name`, `JailTerm`, `CaseId`) VALUES  
( '4041', 'Rocky', 'life', '27123232'),  
( '4042', 'Vicky', '10 yrs', '30033451'),  
( '4043', 'Michael', '5 yrs', '20124545');
```



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## Outputs-

### 1.officer

|                          |                  | OfficerId | FirstName | LastName | Ranking   | Department          | Phone      | Address      | BloodGrp  |
|--------------------------|------------------|-----------|-----------|----------|-----------|---------------------|------------|--------------|-----------|
| <input type="checkbox"/> | Edit Copy Delete | CI101     | Ashok     | Kumar    | SI        | Crime Investigation | 8872314512 | Rajajinagar  | Bpositive |
| <input type="checkbox"/> | Edit Copy Delete | CI200     | Rakesh    | Karthik  | Inspector | Crime Investigation | 9901234522 | Majestic     | Opositive |
| <input type="checkbox"/> | Edit Copy Delete | CI217     | Chandru   | Rajkumar | Inspector | Crime Investigation | 8800044422 | Banashankari | Opositive |
| <input type="checkbox"/> | Edit Copy Delete | CI340     | Sunil     | Vadayar  | Inspector | Crime Investigation | 7700345621 | Jayanagar    | Apositive |
| <input type="checkbox"/> | Edit Copy Delete | PA400     | Vinod     | Bhatt    | Inspector | Patrol              | 7878787894 | Nagasandra   | Apositive |

### 2.cases

| Caseld   | Name      | DOC        | Location              | CRIME                   | OfficerId |
|----------|-----------|------------|-----------------------|-------------------------|-----------|
| 20124545 | Theft     | 2023-02-01 | Reserve bank of India | Stolen 5 Cr             | CI340     |
| 27123232 | Murder    | 2023-02-10 | Bangalore Palace      | Murder of 2             | CI101     |
| 30033451 | Extortion | 2023-03-04 | Church street         | Extorted 1 Cr           | CI200     |
| 31456781 | Rape      | 2023-04-06 | Nation Resort         | Gang rape               | CI217     |
| 41232316 | Murder    | 2023-04-12 | Mantri residency      | Murder of a businessman | CI340     |

### 3.complaint

|                          |                  | ComplaintId | Type     | Complainant   | DOC        | Solved | Caseld   | OfficerId |
|--------------------------|------------------|-------------|----------|---------------|------------|--------|----------|-----------|
| <input type="checkbox"/> | Edit Copy Delete | 1011        | Criminal | Rajesh Verma  | 2023-02-28 | Yes    | 27123232 | CI101     |
| <input type="checkbox"/> | Edit Copy Delete | 1033        | Criminal | Vijay Narayan | 2023-04-09 | No     | 31456781 | CI101     |
| <input type="checkbox"/> | Edit Copy Delete | 1045        | Criminal | Vaishnavi S   | 2023-04-12 | No     | 41232316 | CI340     |
| <input type="checkbox"/> | Edit Copy Delete | 2033        | Criminal | Manish M      | 2023-05-01 | No     | 41232316 | CI217     |

### 4.complainant

|                          |                  | ComplainantId | Name          | Phone      | Address      | ComplaintId | RelationToVictim |
|--------------------------|------------------|---------------|---------------|------------|--------------|-------------|------------------|
| <input type="checkbox"/> | Edit Copy Delete | 20344         | Manish M      | 6666666622 | Jayanagar    | 1033        | Friend           |
| <input type="checkbox"/> | Edit Copy Delete | 20347         | Dhanush M     | 7474747488 | KR Road      | 1045        | Son              |
| <input type="checkbox"/> | Edit Copy Delete | 20351         | Rajesh Verma  | 7898765432 | Jayanagar    | 2033        | Brother          |
| <input type="checkbox"/> | Edit Copy Delete | 20355         | Vaishnavi S   | 9876543210 | Yeshwanthpur | 1011        | Sister           |
| <input type="checkbox"/> | Edit Copy Delete | 20370         | Vijay Narayan | 8884371232 | Lalbagh      | 1011        | Father           |

### 5.arrest

|                          |                  | ArrestId | DOC        | Location    | CellNo | OfficerId | CriminalId |
|--------------------------|------------------|----------|------------|-------------|--------|-----------|------------|
| <input type="checkbox"/> | Edit Copy Delete | AR111    | 2023-04-01 | Mysuru Road | CJ101  | CI101     | 4041       |
| <input type="checkbox"/> | Edit Copy Delete | AR222    | 2023-04-03 | UB city     | CJ202  | CI200     | 4042       |
| <input type="checkbox"/> | Edit Copy Delete | AR333    | 2023-04-05 | Orion mall  | CJ144  | CI340     | 4043       |

### 6.criminal

|                          |                  | CriminalId | Name    | JailTerm | Caseld   |
|--------------------------|------------------|------------|---------|----------|----------|
| <input type="checkbox"/> | Edit Copy Delete | 4041       | Rocky   | life     | 27123232 |
| <input type="checkbox"/> | Edit Copy Delete | 4042       | Vicky   | 10 yrs   | 30033451 |
| <input type="checkbox"/> | Edit Copy Delete | 4043       | Michael | 5 yrs    | 20124545 |



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## Select

### 1.Display the contents of the table officer

```
SELECT * FROM `officer`
```

| <div><div>←</div><div>→</div></div> |  | OfficerId | FirstName | LastName | Ranking   | Department          | Phone      | Address      | BloodGrp  |
|-------------------------------------|--|-----------|-----------|----------|-----------|---------------------|------------|--------------|-----------|
| <input type="checkbox"/>            | <div><div>Edit</div><div>Copy</div><div>Delete</div></div> | CI101     | Ashok     | Kumar    | SI        | Crime Investigation | 8872314512 | Rajajinagar  | Bpositive |
| <input type="checkbox"/>            | <div><div>Edit</div><div>Copy</div><div>Delete</div></div> | CI200     | Rakesh    | Karthik  | Inspector | Crime Investigation | 9901234522 | Majestic     | Opositive |
| <input type="checkbox"/>            | <div><div>Edit</div><div>Copy</div><div>Delete</div></div> | CI217     | Chandru   | Rajkumar | Inspector | Crime Investigation | 8800044422 | Banashankari | Opositive |
| <input type="checkbox"/>            | <div><div>Edit</div><div>Copy</div><div>Delete</div></div> | CI340     | Sunil     | Vadeyar  | Inspector | Crime Investigation | 7700345621 | Jayanagar    | Apositive |
| <input type="checkbox"/>            | <div><div>Edit</div><div>Copy</div><div>Delete</div></div> | PA400     | Vinod     | Bhatt    | Inspector | Patrol              | 7878787894 | Nagasandra   | Apositive |

### 2.Display all the entries from the table cases if the case is not solved

```
SELECT * FROM `complaint` WHERE(Solved='No');
```

|                          | ComplaintId  | Type | Complainant | DOC           | Solved     | Caseld | OfficerId      |
|--------------------------|--|------|-------------|---------------|------------|--------|----------------|
| <input type="checkbox"/> | <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a> | 1033 | Criminal    | Vijay Narayan | 2023-04-09 | No     | 31456781 CI101 |
| <input type="checkbox"/> | <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a> | 1045 | Criminal    | Vaishnavi S   | 2023-04-12 | No     | 41232316 CI340 |
| <input type="checkbox"/> | <a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a> | 2033 | Criminal    | Manish M      | 2023-05-01 | No     | 41232316 CI217 |

### 3.Select an entry which does not exist

```
SELECT * FROM `complaint` WHERE(CaseId=11111111);
```

| ComplaintId | Type | Complainant | DOC | Solved | Caseld | OfficerId |
|-------------|------|-------------|-----|--------|--------|-----------|
|-------------|------|-------------|-----|--------|--------|-----------|



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**The below CRUD operations was performed using streamlit as frontend and MySQL as backend**

## Create

### Add to Officer table

×

Menu

Add ▾

Ranking

SI

Department

Crime Investigation

Phone

9092341256

Address

Ulsoor

BloodGrp

Onegative

Add Officer

Officer added successfully

### Add to Cases table

×

Menu

Add ▾

Add Data to Cases table ^

Case Name

Theft

DOC

2023/05/07

Location

Ulsoor

CRIME

Stole bicycle

Officerid

C1103

Add Cases

Case added successfully



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## Add to complaint table

×

Menu

Add

Complainant

Naresh Babu

DOC

2023/05/07

Solved

No

Caseld

30033451

OfficerId

CI101

Add Complaints

Complaint added successfully

## Add to complainant table

×

Menu

Add

Add Data to Complainant table

Name

Sanjay

Phone

9891245097

Address

BTM

ComplaintId

1045

RelationToVictim

Bystander

Add Complainant

Complainant added successfully

## Add to criminal table

×

Menu

Add

Add Data to Arrest table

Add Data to Criminal table

Name

Rupesh

JailTerm

1yr

Caseld

41232318

Add Criminal

Criminal added successfully



## Add to arrest table

×

Menu

Add

AR117

DOC

2023/05/07

Location

Nagarbhavi

Cell No.

CJ132

OfficerId

CI102

CriminalId

4044

Add Arrest

Arrest added successfully

## Read

## View Officer table

×

Menu

View

# Police Management System Dashboard

## View data

View all officers

|   | OfficerId | FirstName | LastName | Ranking   | Department          | Phone      | Address      | Block |
|---|-----------|-----------|----------|-----------|---------------------|------------|--------------|-------|
| 0 | CI101     | Ashok     | Kumar    | SI        | Crime Investigation | 8872314512 | BTM          | Bp    |
| 1 | CI102     | Ajay      | Sarang   | SI        | Crime Investigation | 9898123400 | Ullal        | AB    |
| 2 | CI103     | Satya     | Naidu    | SI        | Crime Investigation | 9092341256 | Ulsoor       | Or    |
| 3 | CI200     | Rakesh    | Karthik  | Inspector | Crime Investigation | 9901234522 | Majestic     | Oq    |
| 4 | CI217     | Chandru   | Rajkumar | Inspector | Crime Investigation | 8800044422 | Banashankari | Oq    |
| 5 | CI340     | Sunil     | Vadeyar  | Inspector | Crime Investigation | 7700345621 | Jayanagar    | Ap    |
| 6 | PA400     | Vinod     | Bhatt    | Inspector | Patrol              | 7878787894 | Nagasandra   | Ap    |



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## View Cases table

Menu

View

View all cases

|   | Caseld   | Name       | DOC        | Location              | CRIME                    | OfficerId |
|---|----------|------------|------------|-----------------------|--------------------------|-----------|
| 0 | 20124545 | Theft      | 2016-04-16 | Reserve bank of India | Stolen 5 Cr              | CI340     |
| 1 | 27123232 | Murder     | 2014-10-16 | Bangalore Palace      | Murder of 2              | CI101     |
| 2 | 30033451 | Extortion  | 2014-11-24 | Church street         | Extorted 1 Cr            | CI200     |
| 3 | 31456781 | Rape       | 2014-11-24 | Nation Resort         | Gang rape                | CI217     |
| 4 | 41232316 | Murder     | 2019-11-29 | Mantri residency      | Murder of a businessman  | CI340     |
| 5 | 41232317 | Pickpocket | 2023-05-06 | Arekere               | Rolex watch pickpocketed | CI101     |
| 6 | 41232318 | Theft      | 2023-05-07 | Ulsoor                | Stole bicycle            | CI103     |
| 7 | 41232319 | Theft      | 2023-05-07 | Ulsoor                | Chain snatching          | CI103     |

## View complaints and complainant table

Menu

View

View all complaints

|   | ComplaintId | Type     | Complainant   | DOC        | Solved | Caseld   | OfficerId |
|---|-------------|----------|---------------|------------|--------|----------|-----------|
| 0 | 1011        | Criminal | Rajesh Verma  | 2023-02-28 | Yes    | 27123232 | CI101     |
| 1 | 1033        | Criminal | Vijay Narayan | 2023-03-03 | No     | 31456781 | CI101     |
| 2 | 1045        | Criminal | Vaishnavi S   | 2023-04-01 | No     | 41232316 | CI340     |
| 3 | 2033        | Criminal | Manish M      | 2023-01-01 | No     | 41232316 | CI217     |

View all complainants

|   | ComplainantId | Name          | Phone      | Address      | ComplaintId | RelationToVictim |
|---|---------------|---------------|------------|--------------|-------------|------------------|
| 0 | 20344         | Manish M      | 666666622  | Jayanagar    | None        | Friend           |
| 1 | 20347         | Dhanush M     | 747474788  | KR Road      | None        | Son              |
| 2 | 20351         | Rajesh Verma  | 7898765432 | Jayanagar    | None        | Brother          |
| 3 | 20355         | Vaishnavi S   | 9876543210 | Yeshwanthpur | None        | None             |
| 4 | 20370         | Vijay Narayan | 8884371232 | Lalbagh      | None        | Father           |
| 5 | 20371         | Sanjay        | 9891245097 | BTM          | 1045        | Bystander        |





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## View arrests and criminals table

Menu

View

View all arrests

|   | ArrestId | DOC        | Location    | CellNo | OfficerId | CriminalId |
|---|----------|------------|-------------|--------|-----------|------------|
| 0 | AR111    | 2023-04-01 | Mysuru Road | CJ101  | CI101     | 4041       |
| 1 | AR117    | 2023-05-07 | Nagarbhavi  | CJ132  | CI102     | 4044       |
| 2 | AR222    | 2023-04-03 | UB city     | CJ202  | CI200     | 4042       |
| 3 | AR333    | 2023-04-05 | Orion mall  | CJ144  | CI340     | 4043       |

View all criminals

|   | CriminalId | Name    | JailTerm | Caseld   |
|---|------------|---------|----------|----------|
| 0 | 4041       | Rocky   | life     | 27123232 |
| 1 | 4042       | Vicky   | 10 yrs   | 30033451 |
| 2 | 4043       | Michael | 5 yrs    | 20124545 |
| 3 | 4044       | Raju    | 2yr      | 41232317 |

## Update

Q.Add a row with the following details in Officer table

**Id=CI101, Ranking=SI,Department=Crime Investigation, Ph=8872314512, Address=HSR, for the officer Ashok Kumar.**

Menu

Edit

Officer to Edit

CI101

Ranking:

SI

Department:

Crime Investigation

Phone:

8872314512

Address:

HSR

Update Officer

Officer's Detail has been updated

Updated row value



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```
mysql> select * from officer;
```

| OfficerId | FirstName | LastName | Ranking | Department          | Phone      | Address | BloodGrp  |
|-----------|-----------|----------|---------|---------------------|------------|---------|-----------|
| CI101     | Ashok     | Kumar    | SI      | Crime Investigation | 8872314512 | HSR     | Bpositive |

## Delete

Delete the entry of the case that has already been solved.

×

Menu

Remove ▾

|   |          |            |            |                       |                          |       |
|---|----------|------------|------------|-----------------------|--------------------------|-------|
| 0 | 20124545 | Theft      | 2016-04-16 | Reserve bank of India | Stolen 5 Cr              | CI340 |
| 1 | 27123232 | Murder     | 2014-10-16 | Bangalore Palace      | Murder of 2              | CI101 |
| 2 | 30033451 | Extortion  | 2014-11-24 | Church street         | Extorted 1 Cr            | CI200 |
| 3 | 31456781 | Rape       | 2014-11-24 | Nation Resort         | Gang rape                | CI217 |
| 4 | 41232316 | Murder     | 2019-11-29 | Mantri residency      | Murder of a businessman  | CI340 |
| 5 | 41232317 | Pickpocket | 2023-05-06 | Arekere               | Rolex watch pickpocketed | CI101 |
| 6 | 41232318 | Theft      | 2023-05-07 | Ulsoor                | Stole bicycle            | CI103 |
| 7 | 41232319 | Theft      | 2023-05-07 | Ulsoor                | Chain snatching          | CI103 |

Task to Delete

41232319 ▾

Do you want to delete ::41232319

Delete Case

Case has been solved successfully



## Stored function

Q.Create a stored function to count the number of days between current date and date the criminal was arrested.

```
mysql> DELIMITER $$
mysql> CREATE FUNCTION date_difference (input_date DATE)
    -> RETURNS INT(4)
    -> DETERMINISTIC
    -> BEGIN
    -> DECLARE result INT(4);
    -> SET result = DATEDIFF(CURDATE(), input_date);
    -> RETURN result;
    -> END;$$
Query OK, 0 rows affected, 2 warnings (0.13 sec)

mysql> DELIMITER;
```

## OUTPUT

```
mysql> SELECT date_difference(DOC) from ARREST;
+-----+
| date_difference(DOC) |
+-----+
|          36          |
|          34          |
|          32          |
+-----+
3 rows in set (0.00 sec)
```



## Trigger

Q.Using Trigger, set the id of Cases, Criminal, Complaint and Complainant tables, and increment the max id value by one for each new row added.

```
def trigger():  
    #c.execute('CREATE TRIGGER my_trigger BEFORE INSERT ON Officer FOR EACH ROW BEGIN -- generate a new cas  
    c.execute('CREATE TRIGGER CaseId'  
        'BEFORE INSERT ON Cases'  
        'FOR EACH ROW'  
        'SET NEW.CaseId = (SELECT MAX(CaseId) + 1 FROM Cases);')  
  
    c.execute('CREATE TRIGGER CriminalId'  
        'BEFORE INSERT ON Criminal'  
        'FOR EACH ROW'  
        'SET NEW.CriminalId = (SELECT MAX(CriminalId) + 1 FROM Criminal);')  
  
    c.execute('CREATE TRIGGER ComplaintId'  
        'BEFORE INSERT ON Complaint'  
        'FOR EACH ROW'  
        'SET NEW.ComplaintId = (SELECT MAX(ComplaintId) + 1 FROM Complaint);')  
  
    c.execute('CREATE TRIGGER ComplainantId'  
        'BEFORE INSERT ON Complainant'  
        'FOR EACH ROW'  
        'SET NEW.ComplainantId = (SELECT MAX(ComplainantId) + 1 FROM Complainant);')
```

You can see here that as soon as trigger was created, after **41232316** all the case ids are automatically incremented by one.

```
mysql> select * from cases;  
+-----+-----+-----+-----+-----+-----+  
| CaseId | Name      | DOC      | Location          | CRIME                                | OfficerId |  
+-----+-----+-----+-----+-----+-----+  
| 20124545 | Theft     | 2016-04-16 | Reserve bank of India | Stolen 5 Cr                         | CI340     |  
| 27123232 | Murder    | 2014-10-16 | Bangalore Palace    | Murder of 2                         | CI101     |  
| 30033451 | Extortion | 2014-11-24 | Church street       | Extorted 1 Cr                      | CI200     |  
| 31456781 | Rape      | 2014-11-24 | Nation Resort       | Gang rape                          | CI217     |  
| 41232316 | Murder    | 2019-11-29 | Mantri residency    | Murder of a businessman            | CI340     |  
| 41232317 | Pickpocket | 2023-05-06 | Arekere             | Rolex watch pickpocketed          | CI101     |  
| 41232318 | Theft     | 2023-05-07 | Ulsoor              | Stole bicycle                     | CI103     |  
| 41232319 | Theft     | 2023-05-07 | BTM                 | Chain snatching                   | CI101     |  
| 41232320 | Theft     | 2023-05-07 | Madiwala            | Chain snatching                   | CI102     |  
| 41232321 | Theft     | 2023-05-07 | Madiwala            | Stole shoes                        | CI102     |  
+-----+-----+-----+-----+-----+-----+  
10 rows in set (0.00 sec)
```

## Aggregate

1. count of number of cases which occurred in each area?

```
mysql> select COUNT(*), Location from cases group by Location;
```

| COUNT(*) | Location              |
|----------|-----------------------|
| 1        | Reserve bank of India |
| 1        | Bangalore Palace      |
| 1        | Church street         |
| 1        | Nation Resort         |
| 1        | Mantri residency      |
| 2        | Arekere               |
| 1        | Ulsoor                |
| 2        | BTM                   |
| 2        | Madiwala              |

9 rows in set (0.01 sec)

1. Count of number of cases solved by each officer?

```
mysql> select COUNT(*), OfficerId from cases group by OfficerId;
```

| COUNT(*) | OfficerId |
|----------|-----------|
| 5        | CI101     |
| 2        | CI102     |
| 1        | CI103     |
| 1        | CI200     |
| 1        | CI217     |
| 2        | CI340     |

6 rows in set (0.00 sec)

## Unions

1. Give the list of cases which occurred before 2015 and after 2022.

```
mysql> select * from cases;
```

| CaseId   | Name       | DOC        | Location              | CRIME                    | OfficerId |
|----------|------------|------------|-----------------------|--------------------------|-----------|
| 20124545 | Theft      | 2016-04-16 | Reserve bank of India | Stolen 5 Cr              | CI340     |
| 27123232 | Murder     | 2014-10-16 | Bangalore Palace      | Murder of 2              | CI101     |
| 30033451 | Extortion  | 2014-11-24 | Church street         | Extorted 1 Cr            | CI200     |
| 31456781 | Rape       | 2014-11-24 | Nation Resort         | Gang rape                | CI217     |
| 41232316 | Murder     | 2019-11-29 | Mantri residency      | Murder of a businessman  | CI340     |
| 41232317 | Pickpocket | 2023-05-06 | Arekere               | Rolex watch pickpocketed | CI101     |
| 41232318 | Theft      | 2023-05-07 | Ulsoor                | Stole bicycle            | CI103     |
| 41232319 | Theft      | 2023-05-07 | BTM                   | Chain snatching          | CI101     |
| 41232320 | Theft      | 2023-05-07 | Madiwala              | Chain snatching          | CI102     |
| 41232321 | Theft      | 2023-05-07 | Madiwala              | Stole shoes              | CI102     |
| 41232322 | Pickpocket | 2023-05-08 | Arekere               | Stole wallet             | CI101     |
| 41232323 | Pickpocket | 2023-05-08 | BTM                   | Stole cards              | CI101     |

12 rows in set (0.03 sec)

With union:



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```
mysql> select * from cases where year(DOC)<2015
-> UNION
-> select * from cases where year(DOC)>2022;
```

| CaseId   | Name       | DOC        | Location         | CRIME                    | OfficerId |
|----------|------------|------------|------------------|--------------------------|-----------|
| 27123232 | Murder     | 2014-10-16 | Bangalore Palace | Murder of 2              | CI101     |
| 30033451 | Extortion  | 2014-11-24 | Church street    | Extorted 1 Cr            | CI200     |
| 31456781 | Rape       | 2014-11-24 | Nation Resort    | Gang rape                | CI217     |
| 41232317 | Pickpocket | 2023-05-06 | Arekere          | Rolex watch pickpocketed | CI101     |
| 41232318 | Theft      | 2023-05-07 | Ulsoor           | Stole bicycle            | CI103     |
| 41232319 | Theft      | 2023-05-07 | BTM              | Chain snatching          | CI101     |
| 41232320 | Theft      | 2023-05-07 | Madiwala         | Chain snatching          | CI102     |
| 41232321 | Theft      | 2023-05-07 | Madiwala         | Stole shoes              | CI102     |
| 41232322 | Pickpocket | 2023-05-08 | Arekere          | Stole wallet             | CI101     |
| 41232323 | Pickpocket | 2023-05-08 | BTM              | Stole cards              | CI101     |

10 rows in set (0.13 sec)

## Join

**Q1.Retrieve the details of all arrests made, including the arrest date and location, the officer's full name, and the associated criminal's name.**

```
SELECT ARREST.DOC, ARREST.Location, OFFICER.FirstName, OFFICER.LastName, CRIMINAL.Name FROM ARREST JOIN OFFICER ON ARREST.OfficerId = OFFICER.OfficerId JOIN CRIMINAL ON ARREST.CriminalId = CRIMINAL.CriminalId;
```

| DOC        | Location    | FirstName | LastName | Name    |
|------------|-------------|-----------|----------|---------|
| 2023-04-01 | Mysuru Road | Ashok     | Kumar    | Rocky   |
| 2023-04-03 | UB city     | Rakesh    | Karthik  | Vicky   |
| 2023-04-05 | Orion mall  | Sunil     | Vadeyar  | Michael |

**Q2.Retrieve the details of all officers along with the number of cases they are assigned to. Using left join**

```
SELECT OFFICER.*, COUNT(CASES.CaseId) AS NumberOfCases FROM OFFICER LEFT JOIN CASES ON OFFICER.OfficerId = CASES.OfficerId GROUP BY OFFICER.OfficerId;
```

| OfficerId | FirstName | LastName | Ranking   | Department          | Phone      | Address      | BloodGrp  | NumberOfCases |
|-----------|-----------|----------|-----------|---------------------|------------|--------------|-----------|---------------|
| CI101     | Ashok     | Kumar    | SI        | Crime Investigation | 8872314512 | Rajajinagar  | Bpositive | 1             |
| CI200     | Rakesh    | Karthik  | Inspector | Crime Investigation | 9901234522 | Majestic     | Opositive | 1             |
| CI217     | Chandru   | Rajkumar | Inspector | Crime Investigation | 8800044422 | Banashankari | Opositive | 1             |
| CI340     | Sunil     | Vadeyar  | Inspector | Crime Investigation | 7700345621 | Jayanagar    | Apositive | 2             |
| PA400     | Vinod     | Bhatt    | Inspector | Patrol              | 7878787894 | Nagasandra   | Apositive | 0             |



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## CONCLUSION

**(i)Successfully created a database on the police management system with various tables and its ER diagram and Relational schema**

**(ii)Successfully performed several operations on the database.**

**THE END!!!!**