ABSTRACT

The need for good record-keeping and information sharing practices has taken on added significance in today's global environment. Not only do good records provide crucial internal information, law enforcement agencies now need to communicate agency-to-agency and across continents in order to protect the nation's citizens. Nothing is more important in accomplishing that mission than having accessibility to accurate and timely records. Calls for service records and investigate, arrest, criminal identification, detention, and even civil records hold information that by themselves mean little; however, when pieced together with information from other jurisdictions, the result can help with all levels of investigations and aid in safeguarding the nation. Hence, we are designing this "police station database management" to store data related to a particular police station which can be further expanded to cover all police stations making an interconnection of the police stations in the country. In this database we can view details of police personnel, defendants, cases, property ceased by the police personnel and also the vehicles used by them. We can file new cases and update the status of the case so that it is public. The public can view the most wanted criminals based on the number of crimes done by him. They can calculate the crime rate based on complaints filed in a particular time period. All in all, this Database can keep account of the activities of Police personnel, cases filed, criminals.

CONTENTS

CHAPTER 1

INTRODUCTION

The project is aimed to develop a crime file to maintain a computerized record of all the FIRS against crime. The system is desktop application that can be accessed throughout the police department. This system can be used as an application for the crime file of the police department to manage the records of different activity related to first information report. In such desktop crime file system, we will manage all such activities (like registration of the complaint updating information, search of particular viewing of the respective reports of crimes) which will save time and manpower. This system will provide better prospective for the enhancement of organization regarding quality and transparency.

This project is mainly useful for police departments. This system will help to manage all the activities in a police department using computers. Currently, all the works are done manually by computerizing all the activities inside a police department which can be managed easily and effectively. The police departments in the country today are virtually unconnected islands. Thanks to telephones, wireless and to mobile telephones. There is a voice connectivity between the police department and senior police officers. There is no system of data storage, data sharing and accessing data. There is no system under which one police department can talk to another directly. There is no record of crimes or criminals that can be accessed by a Department House Officer, except the manual records related to that particular police department. The goals of the system are to facilitate, collect, store, retrieve, analyse, transfer and share, data and information to the police department and between the police department and the State Headquarters and the Central Police Organizations.

The objectives of this system can broadly be listed as follows:

- Make the Police functioning citizens friendly and more transparent by automating the functioning of Police Departments.
- Improve delivery of citizen-centric services through effective usage of Information and Communications Technology.
- Provide the Investigating Officers of the Civil Police with tools, technology and information to facilitate investigation of crime and detection of criminals.
- Improve Police functioning in various other areas such as Law and Order, Traffic Management etc.
- Facilitate Interaction and sharing of Information among Police Departments, Districts, State/ headquarters and other Police Agencies.

CHAPTER 2

SYSTEM REQUIREMENTS AND SPECIFICATION

The hardware and software components of a computer system that are required to install and use software efficiently are specified in the SRS. The minimum system requirements need to be met for the program to run at all times on the system.

2.1: Hardware Requirements

The hardware requirements specify the necessary hardware which provides us the platform to implement our programs.

- Processor: intel dual core i5 or above
- 2 GB RAM (system memory)
- 20 GB of hard-drive space

and necessary computer peripherals such as keyboard, monitor etc.

2.2: Software Requirements

The software requirements specify the pre-installed software needed to run the code being implemented in this project.

- BACK END-XAMPP, MYSQL, APACHE SERVER
- OPERATING SYSTEM - WINDOWS, UBUNTU
- BROWSER - GOOGLE CHROME, FIREFOX, INTERNET EXPLORER

CHAPTER 3

SYSTEM DESIGN

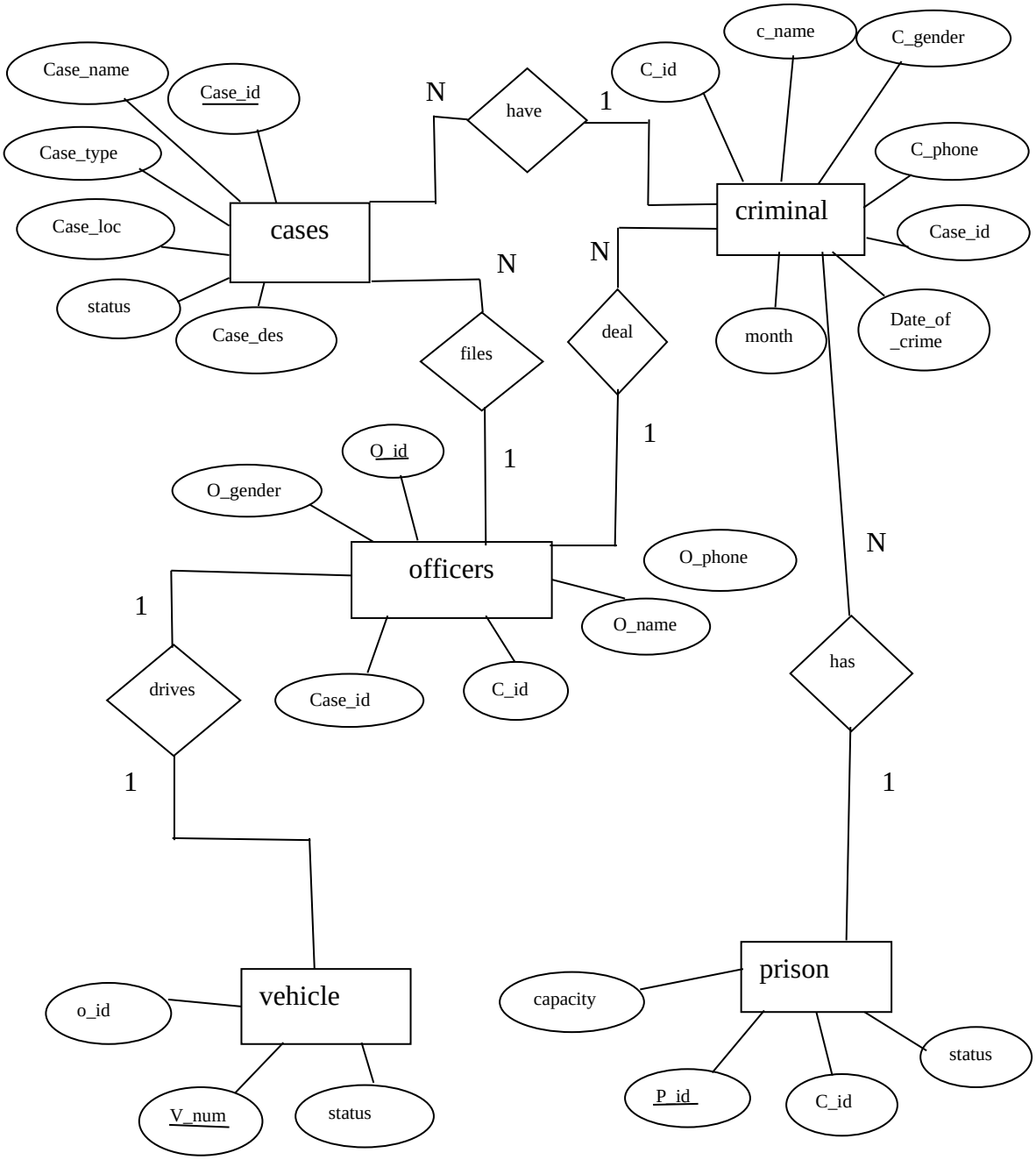
3.1:SQL

SQL is a special-purpose programming language designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). Originally based upon relational algebra and tuple relational calculus. SQL consists of a data definition language, data manipulation language. and a data control language. The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. SQL stores each data item in its own fields. In SQL, the fields relating to a particular person, thing or event are bundled together to form a single complete unit of data called record (it can also be referred to a row or an occurrence). Each record is made up of a number of fields. No two fields in a record can have the same field name.

3.2: ER DIAGRAM

An entity-relationship model (ER model) is a data model for describing the data or information aspects of a business domain or its process requirements in an abstract way that lends itself to ultimately being implemented in a database such as a relational database. The main components of ER models are entities (things) and the relationships that can exist among them. Entity-relationship modelling was developed by Peter Chen and published in 1976 paper. The ER diagram is drawn to have a better understanding of the whole scenario, it is used to conceptualize the phenomena, actions and interactions between various entities and to arrive at the specific requirements in a comprehensive manner. An entity-relationship model is the result of using a systematic process to describe and define a subject area of business data. The data is represented as components (entities) that are linked with each other by relationships that express the dependencies and requirements between them.

ER DIAGRAM :


c_name
C_gender
Case_name
Case_id
C_id
N
have
1
C_phone
Case_type
criminal
Case_loc
cases
Case_id
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status
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officers
O_phone
N
1
O_name
has
drives
Case_id
C_id
1
1
prison
o_id
vehicle
capacity
status
P_id
C_id
V_num
status

3.3: SCHEMA DIAGRAM

Relational Schema

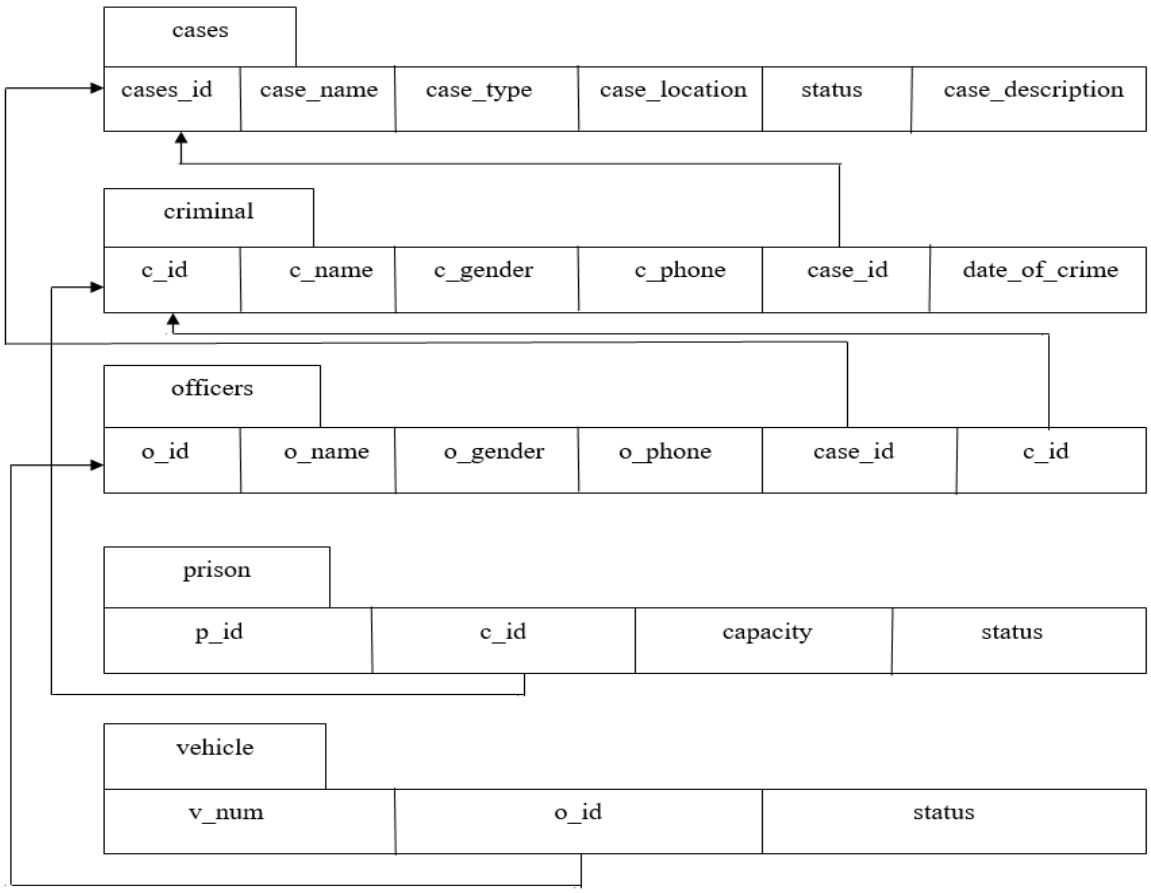
A relation schema is a named relation defined by a set heading paired with a set of constraints defined in terms of that heading. A relation can thus be seen as an instantiation of a relation schema if it has the heading of that schema and it satisfies the applicable constraints.

Entity

Basic object that the object with an ER model represent in an entity, which is a thing in the real world with an independent existence. An entity may be a physical existence (E.g. a particular person, car, house, employee) or it may be an object with a conceptual existence (E.g. a company, a job or a university course)

Attribute

Each entity has attributes. It is a particular property that describes entity. For example, an employee entity may be described by the employee's name, age, address, salary and job. A particular entity will have a value for each of its attributes. The attribute values that describe each entity become a major part of the data stored in the database.



CHAPTER 4

IMPLEMENTATION

4.1:TABLE CREATION

```
1. CREATE TABLE CASES (
   CASE_ID INT PRIMARY KEY,
   CASE_NAME VARCHAR(20),
   CASE_TYPE VARCHAR(20),
   CASE_LOCATION VARCHAR(20),
   STATUS VARCHAR(20),
   CASE_DESCRIPTION VARCHAR(150)
   );

2.CREATE TABLE CRIMINAL (
  C_NAME VARCHAR(20),
  C_ID INT PRIMARY KEY,
  C_GENDER VARCHAR(20),
  C_PHONE VARCHAR(10),
  CASE_ID INT,
  DOC VARCHAR(10),
  FOREIGN KEY (CASE_ID) REFERENCES CASES(CASE_ID)
  );

3.CREATE TABLE OFFICERS (
  O_NAME VARCHAR(20),
  O_ID INT PRIMARY KEY,
  O_GENDER VARCHAR(1),
  O_PHONE VARCHAR(10),
  CASE_ID INT,
  C_ID INT,
  FOREIGN KEY (CASE_ID) REFERENCES CASES(CASE_ID),
  FOREIGN KEY (C_ID) REFERENCES CRIMINAL(C_ID)
  );
```

```
4.CREATE TABLE PRISON (
  P_ID INT PRIMARY KEY,
  C_ID INT,
  CAPACITY INT,
  STATUS VARCHAR(20),
  FOREIGN KEY (C_ID) REFERENCES CRIMINAL(C_ID)
  );

5.CREATE TABLE VEHICLE (
  V_NUM INT PRIMARY KEY,
  O_ID INT,
  STATUS VARCHAR(20),
  FOREIGN KEY (O_ID) REFERENCES OFFICERS(O_ID)
  );
```

4.2: INSERTION OF TUPLES

1.INSERTING INTO CASES

INSERT INTO CASES VALUES(1001,'C1','ASSAULT','BENGALURU','ON-GOING',PHYSICAL HARM ON HIS WIFE') **;**
INSERT INTO CASES VALUES(1002,'C2','ROBBERY','BENGALURU','ON-GOING','ROBBED GOLD ORNAMENTS FROM JEWELLERY SHOP') **;**
INSERT INTO CASES VALUES(1003,'C3','CHILD ABUSE','MYSORE','COMPLETED','ON HER DAUGHTER') **;**
INSERT INTO CASES VALUES(1004,'C4','RAPE','KUNIGAL','ON-GOING','ON A STUDENT OF LAW COLLEGE');
INSERT INTO CASES VALUES(1005,'C5','MOBILE THEFT','BENGALURU','ON-GOING','TUESDAY MORNING IN VIJAYANAGAR METRO STATION);
INSERT INTO CASES VALUES(1006,'C6','PICKPOCKETING' ,'BENGALURU','COMPLETED',BMTC BUS');
INSERT INTO CASES VALUES(1007,'C7','ATTEMPT TO MURDER','SHIVMOGGA','ON-GOING','TRIED KILLING USING KNIFE IN K R MARKET');
INSERT INTO CASES VALUES(1008,'C8','MURDER','MYSORE','ON-GOING','KILLED IN FRONT OF MYSORE PALACE USING DAGGER');
INSERT INTO CASES VALUES(1009,'C9','VEHICLE THEFT','UDUPI','COMPLETED','SWIFT DESIRE MISSING FROM 2 DAYS');
INSERT INTO CASES VALUES(1010,'C10','ROBBERY','MANGALORE','COMPLETED', 'ROBBED KARNATAKA BANK ON REPUBLIC DAY')

2.INSERTING INTO CRIMINALS

INSERT INTO CRIMINALS VALUES('LIKITH',3001,'M',8976726789,1001,'2022-07-23','JULY');
INSERT INTO CRIMINALS VALUES('MADHUSUDHAN',3002,'M',89767278689,1002,'2023-01-04','JANUARY');
INSERT INTO CRIMINALS VALUES('ASHWINI',3003,'F',8911126789,1003,'2022-01-04','JANUARY');
INSERT INTO CRIMINALS VALUES('MADHAV',3004,'M',9676726789,1004,'2023-09-04','SEPTEMBER');
INSERT INTO CRIMINALS VALUES('MADHUSHREE',3005,'F',7776726789,1005,'2023-03-24','MARCH');
INSERT INTO CRIMINALS VALUES('PURUSHOTTAM',3006,'M',8923426789,1006,'2021-01-04','JANUARY');
INSERT INTO CRIMINALS VALUES('MANJUNATH B N',3007,'M',8965726789,1007,'2023-03-24,'MARCH');
INSERT INTO CRIMINALS VALUES('MOIN',3008,'M',8988826789,1008,'2023-03-15','MARCH');
INSERT INTO CRIMINALS VALUES('POOJA',3009,'F',8976726111,1009,'2022-06-17','JUNE');

3.INSERTING INTO OFFICERS

INSERT INTO OFFICERS VALUES ('MANISH RATHOD', 5001, 'M', 5678926789, 1004, 3004);
INSERT INTO OFFICERS VALUES ('PARAM SINGH', 5002, 'M', 9978926789, 1001, 3001);
INSERT INTO OFFICERS VALUES ('RAKSHITHA', 5003, 'F', 5778926789, 1002, 3002);
INSERT INTO OFFICERS VALUES ('NISHU AGARWAL' ,5004, 'F', 8678926789, 1003, 3003);
INSERT INTO OFFICERS VALUES('RAMESH', 5005, 'M', 9778926789, 1005, 3005);
INSERT INTO OFFICERS VALUES('ANUSHA', 5006,'F',8778926789,1006,3006);
INSERT INTO OFFICERS VALUES('PRAJWAL GOPAL', 5007, 'M', 6978926789, 1007, 3007);
INSERT INTO OFFICERS VALUES('MAHENDAR',5008, 'M', 8908926789, 1008, 3008);

INSERT INTO OFFICERS VALUES('KUMAR', 5009, 'M', 7788926789, 1009, 3009);
INSERT INTO OFFICERS VALUES('SAHANA', 5010, 'F', 5678926711, 1010, 3010);

4.INSERTING INTO PRISON

INSERT INTO PRISON VALUES(7001,3001,5,'VACANT FOR 4');
INSERT INTO PRISON VALUES(7001,3002,5,'VACANT FOR 3');
INSERT INTO PRISON VALUES(7001,3003,5,'VACANT FOR 2');
INSERT INTO PRISON VALUES(7001,3004,5,'VACANT FOR 1');
INSERT INTO PRISON VALUES(7002,3006,10,'VACANT FOR 1');
INSERT INTO PRISON VALUES(7002,3007,10,'FULL');
INSERT INTO PRISON VALUES(7003,3010,7,'VACANT FOR 4');
INSERT INTO PRISON VALUES(7003,3009,7,'VACANT FOR 3');

5.INSERTING INTO VEHICLE

INSERT INTO VEHICLE VALUES('KA02NH4224','OFF-SERVICE',5006);
INSERT INTO VEHICLE VALUES('KA04MH2224','ON-SERVICE',5008);
INSERT INTO VEHICLE VALUES('KA03JS8055','OFF-SERVICE',5001);
INSERT INTO VEHICLE VALUES('KA02KY1234','ON-SERVICE',5003);
INSERT INTO VEHICLE VALUES('KA02GT4243','OFF-SERVICE',5009);
INSERT INTO VEHICLE VALUES('KA02FF8989','OFF-SERVICE',5002);

CHAPTER 5

SNAPSHOTS

5.1:Tables

select * from cases;

Cases

Case Id	Case name	Case Type	Case Location	Case Status	Case Description
1001	C1	ASSAULT	BENGALURU	ON GOING	PHYSICAL HARM ON HIS WIFE
1002	C2	ROBBERY	BENGALURU	ON GOING	ROBBERY GOLD ORNAMENTS FROM JEWELLERY SHOP
1003	C3	CHILD ABUSE	MYSORE	COMPLETED	ON HIS DAUGHTER
1004	C4	RAPE	KUNIGAL	COMPLETED	ON A STUDENT FROM FRAUD LAW COLLEGE
1005	C5	MOBILE THEFT	BENGALURU	ON GOING	BMTC BUS
1006	C6	PICK-POCKETING	BENGALURU	COMPLETED	TUESDAY MORNING IN VIJAYNAGAR METRO STATION
1007	C7	ATTEMPT TO MURDER	SHIVMOGGA	ON GOING	TRYING TO KILL IN MARKET
1008	C8	MURDER	MYSORE	ON-GOING	KILLED IN FRONT OF MYSORE PALACE USING DAGGER
1009	C9	VEHICLE THEFT	UDUPI	COMPLETED	SWIFT DESIRE MISSING FROM 2 DAYS
1010	C10	ROBBERY	MANGAORE	COMPLETED	ROBBED KARNATAKA BANK ON REPUBLIC DAY
1011	C11	ROBBERY	KOPPAL	ON GOING	ROBBED JEWELLERY SHOP
1012	C12	SMUGGLING	HOSPET	ON GOING	CAUGHT SMUGGLING 500 GRAMS OF COCAINE IN TRAIN

select * from criminal;

Criminals

Criminal Name	Criminal Id	Criminal Gender	Criminal Phone	Case Id	Date Of Crime	Month
LIKITH	3001	M	5551234	1001	2022-07-23	JULY
MADHUSUDHAN	3002	M	5541359	1002	2023-01-04	JANUARY
ASHWINI	3003	F	5552346	1003	2022-01-04	JANUARY
MADHAV	3004	M	5558723	1004	2023-09-04	SEPTEMBER
MADHUSHREE	3005	F	5551234	1005	2023-03-24	MARCH
PURUSHOTTAM	3006	M	5551234	1006	2021-01-04	JANUARY
MANJUNATH B N	3007	M	5568934	1007	2023-03-15	MARCH
MOIN	3008	M	5551234	1008	2023-03-15	MARCH
POOJA	3009	F	5551234	1009	2022-06-17	JUNE
NISHANT	3010	M	5569431	1010	2021-04-13	APRIL
RAZAK	3011	M	5569433	1011	2022-04-14	APRIL
HARSHITA	3012	F	5551458	1012	2023-02-07	MARCH

select * from officers;

Officers

Officer Name	Officer Id	Office Gender	Office Phone	Case Id	Criminal Id
MANISH RATHOD	5001	M	5551256	1004	3004
PARAM SINGH	5002	M	5558907	1001	3001
RAKSHITHA	5003	F	5552314	1002	3002
NISHU AGARWAL	5004	F	5567852	1003	3003
RAMESH	5005	M	5529087	1005	3005
ANUSHA	5006	F	5531296	1006	3006
PRAJWAL GOPAL	5007	M	5552970	1007	3007
MAHENDAR	5008	M	5551234	1008	3008
KUMAR	5009	M	5551235	1009	3009
SAHANA	5010	F	5551234	1010	3010
SRUSHTI	5011	F	5551236	1011	3011
CHAITHANYA	5012	F	5561234	1012	3012

select * from prison;

Prison

Prison Id	Criminal Id	Capacity	Status
7001	3001	5	VACANT FOR 4
7001	3002	5	VACANT FOR 3
7001	3003	5	VACANT FOR 2
7001	3004	5	VACANT FOR 1
7001	3005	5	FULL
7002	3006	2	VACANT FOR 1
7002	3007	2	FULL
7003	3008	10	VACANT FOR 9
7003	3009	10	VACANT FOR 8
7003	3010	10	VACANT FOR 7
7003	3011	10	VACANT FOR 6
7003	3012	10	VACANT FOR 5

select * from vehicles;

Vehicles

Vehicle Number	Vehicle Status	Office Id
KA02NH4222	OFF-SERVICE	5006
KA04MH5224	ON-SERVICE	5002
KA04NH4224	ON-SERVICE	5003
KA04NH8055	ON-SERVICE	5004
KA05JW4424	ON-SERVICE	5001
KA05NI1224	OFF-SERVICE	5005

5.2:Queries

1. Retrieve the names of all officers who have worked on cases that involved a male criminal with the phone number '555-1234':

```
SELECT O_NAME
FROM officers
WHERE CASE_ID IN (
SELECT CASE_ID
FROM criminal
WHERE C_GENDER = 'MALE' AND C_PHONE = '5551234'
);
```

Retrieve the names of all officers who have worked on cases that involved a male criminal with the phone number '555-1234':

OFFICER NAME
PARAM SINGH
ANUSHA
MAHENDAR

2. Find the names of all the officers and their phone numbers who are assigned to cases that involve female criminals:

```
SELECT DISTINCT officers.O_NAME, officers.O_PHONE
FROM officers
INNER JOIN criminal ON officers.CASE_ID = criminal.CASE_ID
WHERE criminal.C_GENDER = 'F';
```

Find the names of all the officers and their phone numbers who are assigned to cases that involve female criminals:

Officer Name	Officer Phone
NISHU AGARWAL	5567852
RAMESH	5529087
KUMAR	5551235
CHAITHANYA	5561234

3. Find the names of all the cases that involve male criminals and are assigned to officers whose phone numbers start with "555":

```
SELECT cases.CASE_NAME
FROM cases
INNER JOIN criminal ON cases.CASE_ID = criminal.CASE_ID
INNER JOIN officers ON cases.CASE_ID = officers.CASE_ID
WHERE criminal.C_GENDER = 'M'
AND officers.O_PHONE LIKE '555%';
```

Find the names of all the cases that involve male criminals and are assigned to officers whose phone numbers start with "555":

CAse Name
C1
C2
C4
C7
C8
C10
C11

4. This query joins the officers, criminal, and cases tables using the C_ID and CASE_ID columns. It then selects the O_NAME, C_NAME, and CASE_NAME columns where the officer's gender is female and the case type is robbery.

```
SELECT O_NAME, C_NAME, CASE_NAME
FROM officers
INNER JOIN criminal ON officers.C_ID = criminal.C_ID
INNER JOIN cases ON criminal.CASE_ID = cases.CASE_ID
WHERE O_GENDER = 'F' AND CASE_TYPE = 'ROBBERY';
```

This query joins the officers, criminal, and cases tables using the C_ID and CASE_ID columns. It then selects the O_NAME, C_NAME, and CASE_NAME columns where the officer's gender is female and the case type is robbery.

Officer Name	Criminal Name	Case Name
RAKSHITHA	MADHUSUDHAN	C2
SAHANA	NISHANT	C10
SRUSHTI	RAZAK	C11

5. Retrieve the names and phone numbers of criminals who are assigned to cases that are closed and have a type of "CHILD ABUSE" or "RAPE":

```
SELECT C_NAME, C_PHONE
FROM criminal
WHERE CASE_ID IN (
   SELECT CASE_ID
   FROM cases
   WHERE STATUS1 = 'COMPLETED' AND CASE_TYPE IN ('CHILD ABUSE', 'RAPE')
);
```

Retrieve the names and phone numbers of criminals who are assigned to cases that are closed and have a type of "CHILD ABUSE" or "RAPE":

Brand Name	Product Name
ASHWINI	5552346
MADHAV	5558723

CONCLUSION

The Database developed is found to be working efficiently and effectively. It results in regular and timely action against crime reported. It can be observed that the information can be obtained easily and accurately. The Database is made user friendly to the maximum with a web application so that any authorised official can use the database.

Maintainability

- System design is modular and structural.
- System can easily be enhanced.

Portability

We know "Writes once, Run Anywhere* approach. So Police Station Management is 100% portable in any operating system which further propagates to be implemented by all other police stations.

Ease of use

Consistent user interface with standard entry, information format and analysis to reduce crime rates.

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BOOKS

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WEBSITES

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