Crime Record management system

# PROBLEM STATEMENT

A database management system , to maintain records of criminals and the crimes committed by them along with victim ,FIR , criminal details.
A petitioner can lodge many FIRs but they should not be of the same crime . He will have to provide details about his  name , contact , address , gender and age while filing an FIR.
Many FIRs can be filed against one accused or one victim , but for different crimes.
Multiple victims or accused can not have the same FIR. Accused and victim details may or may not be known at the time of lodging a complaint.
FIR should include lodging date , time and place and also the incident date , time and place.
Victim's details include name , age , gender, contact and address.
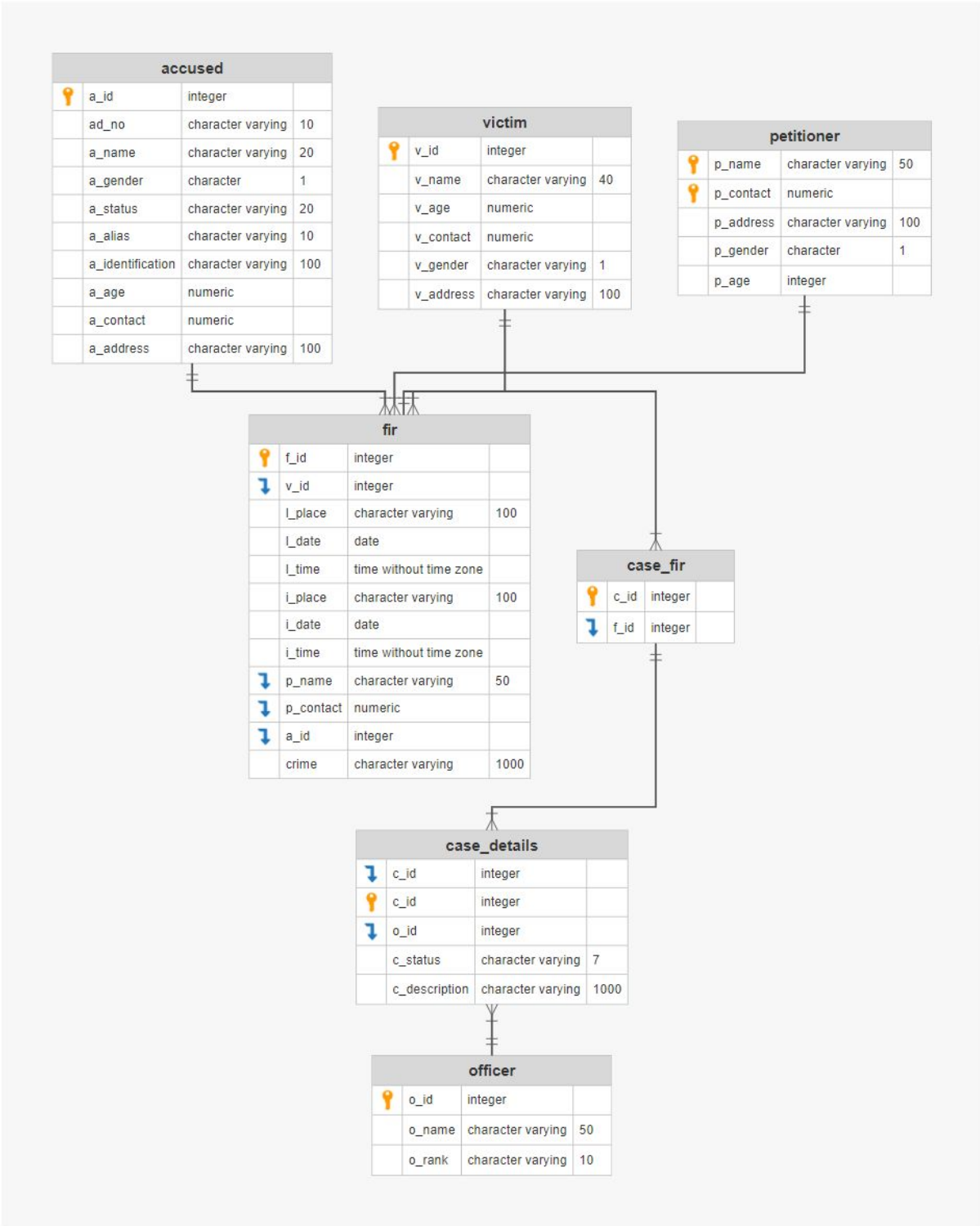Accused details include name , UIN , gender m age , contact , address , status , alias , Identification.
One officer is assigned a case.
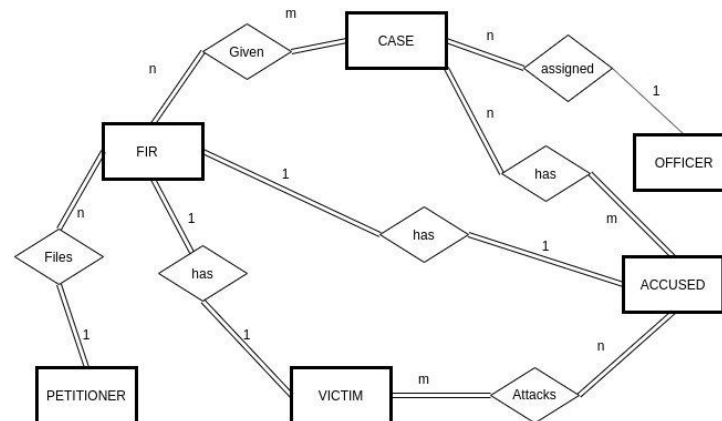One officer can handle many cases.

# IDENTIFYING ENTITIES AND ATTRIBUTES
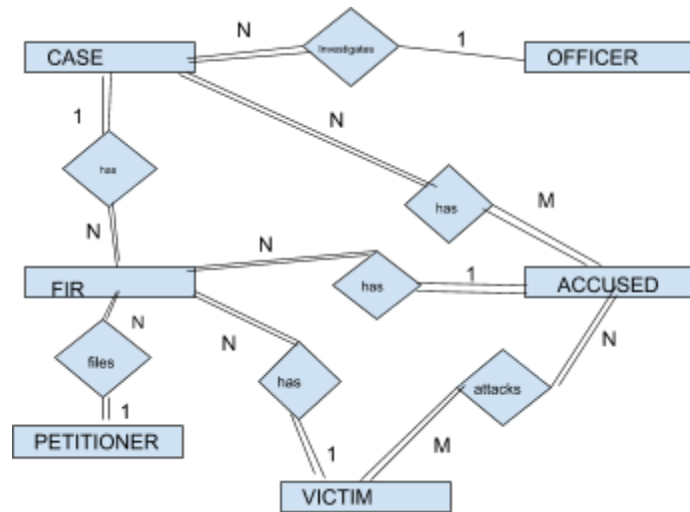
A. Petitioner { **Name** , Address , **Contact** , Age,Gender }
B. Officer {**O.Id** , OName , Rank }
C. Case {**C.Id** , Status , Description}
D. Accused { Name , **A_id,**Ad_no , Gender , Age , Contact , Address , Status , Alias , Identification}
E. FIR { **FIR.ID** , L_Date ,L_Time ,L_Place,i_Date,i_Time,i_Place }
F. Victim {**V_id** , Name , Age , Gender ,Contact , Address}

# CrimeRecord

## accused

| | | |
|---|---|---|
| 🔑 a_id | integer | |
| ad_no | character varying | 10 |
| a_name | character varying | 20 |
| a_gender | character | 1 |
| a_status | character varying | 20 |
| a_alias | character varying | 10 |
| a_identification | character varying | 100 |
| a_age | numeric | |
| a_contact | numeric | |
| a_address | character varying | 100 |

## victim

| | | |
|---|---|---|
| 🔑 v_id | integer | |
| v_name | character varying | 40 |
| v_age | numeric | |
| v_contact | numeric | |
| v_gender | character varying | 1 |
| v_address | character varying | 100 |

## petitioner

| | | |
|---|---|---|
| 🔑 p_name | character varying | 50 |
| 🔑 p_contact | numeric | |
| p_address | character varying | 100 |
| p_gender | character | 1 |
| p_age | integer | |

## fir

| | | |
|---|---|---|
| 🔑 f_id | integer | |
| 🔗 v_id | integer | |
| l_place | character varying | 100 |
| l_date | date | |
| l_time | time without time zone | |
| i_place | character varying | 100 |
| i_date | date | |
| i_time | time without time zone | |
| 🔗 p_name | character varying | 50 |
| 🔗 p_contact | numeric | |
| 🔗 a_id | integer | |
| crime | character varying | 1000 |

## case_fir

| | | |
|---|---|---|
| 🔑 c_id | integer | |
| 🔗 f_id | integer | |

## case_details

| | | |
|---|---|---|
| 🔗 c_id | integer | |
| 🔑 c_id | integer | |
| 🔗 o_id | integer | |
| c_status | character varying | 7 |
| c_description | character varying | 1000 |

## officer

| | | |
|---|---|---|
| 🔑 o_id | integer | |
| o_name | character varying | 50 |
| o_rank | character varying | 10 |

# ER DIAGRAM



# IDENTIFYING RELATIONSHIPS

A. Petitioner-FIR - 1:N
B. FIR-Case - N:1
C. Officer-Case-1:N

D. Victim-FIR -1:1
E. Accused-FIR -1:1
F. Accused-Case -M:N
G. Victim:accused -M:N

# FUNCTIONAL DEPENDENCIES

$X \rightarrow Y$

A. CASE : Case_id -> {O_id,Status,Description}
B. FIR : F_id -> { L_Date ,L_Time ,L_Place,i_Date,i_Time,i_Place}
C. ACCUSED : A_id -> {Name ,Ad_no , Gender , Age , Contact , Address , Status , Alias , Identification}
D. PETITIONER : {Name , Contact} -> {Address , Age,Gender }
E. OFFICER : O_id -> {O_name , Rank}
F. VICTIM : V_id ->{Name , Age , Gender ,Contact , Address}

# IDENTIFY KEYS BASED ON FD

A. Case_id
B. F_id
C. A_id
D. Name + Contact
E. O_id
F. V_id

# CONSTRUCTING THE RELATIONAL MODEL

NORMALIZED
TABLE CREATED
SEQUENCE CREATED

**CASE**
All the columns are completely dependent on the primary key

Case_id-> F_id
F_id -> o_id ,status , description
Case_id ->o_id,status,description

CASE_FID

| Case_id | F_id |
| --- | --- |

CASE_DETAILS

| Case_id | o_id | Status | Description |
| --- | --- | --- | --- |

## FIR

All the columns are completely dependent on the primary key

F_id->L_place,L_date,L_time ,L_place , i_date,i_time,P_name,P_contact,A_id,crime
Vid->L_place,L_date,L_time ,L_place , i_date,i_time,P_name,P_contact,A_id,crime
F_id->V_id

FIR

| F_id | V_id | L_place | L_date | L_time | i_place | i_date | i_time | P_name | P_contact | A_id | Crime |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Trigger for : If multiple FIRs are placed , for the same crime and person , with the same i_place , i_date and i_time , do not add a new row

## ACCUSED

All the columns are completely dependent on the primary key

| Ac_id | A_no | Name | Gender | Alias | Identification | Age | Contact | Address |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

## PETITIONER

1. Address <- Name , contact
2. Gender <- Name , contact
3. Age <- Name , contact

| Name | Contact | Address | Gender | Age |
| --- | --- | --- | --- | --- |

Add trigger to avoid duplicate rows
It is avoided by itself , since name and contact is the primary key ,

## OFFICER

All the columns are completely dependent on the primary key

| O_id | O_name | Rank |
| --- | --- | --- |

**VICTIM**   <mark>Add trigger to avoid duplicate rows</mark>

All the columns are completely dependent on the primary key

| V_id | Name | Age | Gender | Contact | Address |
|------|------|-----|--------|---------|---------|

# NORMALIZATION

A.  1NF : Should have atomic values :YES
B.  2NF :  Every non-prime attribute of the table should be fully dependent on the primary key.
    In case your primary key is single valued , you can ignore this NF
    In case it is multi val : Each non prime attribute has to depend on every value
    : YES
C.  3NF :
    F_id -> c_id
    c_id-> status , details
    f_id-> case,details
D. 3.5NF : Boyce-codd Normal Form : YES
E . 4NF :  YES
F. 5Nf :  YES if the table is in 3NF and each of its super key has a single attribute , then it is in 5nf

# LOSSLESS JOINS

The following conditions must be satisfied to obtain a lossless join:
a)  Att(R1) ∪ Att (R2) =Att(R)
b)   Att(R1) ∩ Att(R2) ≠ Φ

c) Att(R1) ∩ Att(R2) = Att(R1) or  Att(R1) ∩ Att(R2) = Att(R2) [Common attribute should be the key in at least one of the relations]

```
1  select * from case_details
2
3
```

Data Output    Explain    Messages    Notifications

| | c_id [PK] integer | o_id integer | c_status character var | c_description character varying (1000) |
|---|---|---|---|---|
| 1 | 10000 | 101 | CLOSED | A lady from Glarayal was shot d... |
| 2 | 10001 | 102 | CLOSED | A pharmacy Store in Mount Kin... |
| 3 | 10002 | 102 | OPEN | A Locker at the Central Library ... |
| 4 | 10003 | 103 | CLOSED | THe victim was brutally raped . ... |
| 5 | 10004 | 108 | CLOSED | The victim was walking to her e... |
| 6 | 10005 | 104 | CLOSED | A house property along with the... |
| 7 | 10006 | 102 | OPEN | The accused threw Hydrochlori... |
| 8 | 10007 | 105 | CLOSED | The famous Pontiac bandit und... |
| 9 | 10008 | 103 | CLOSED | Wife had gone missing after at... |
| 10 | 10009 | 106 | OPEN | A teenage girl was allegedly rap... |
| 11 | 10010 | 103 | CLOSED | Husband after assaulting wife f... |
| 12 | 10011 | 107 | OPEN | The victim was gang-raped by 4... |
| 13 | 10012 | 108 | OPEN | A lady from Mawat killed her br... |
| 14 | 10015 | [null] | [null] | [null] |
| 15 | 10016 | [null] | [null] | [null] |
| 16 | 10017 | [null] | [null] | [null] |
| 17 | 10018 | [null] | [null] | [null] |
| 18 | 10019 | [null] | [null] | [null] |
| 19 | 10021 | [null] | [null] | [null] |
| 20 | 10024 | [null] | [null] | [null] |

```
1  select * from case_fir
2
3
```

Data Output    Explain    Messages

| | c_id [PK] integer | f_id integer |
|---|---|---|
| 1 | 10000 | 1 |
| 2 | 10001 | 2 |
| 3 | 10002 | 3 |
| 4 | 10003 | 4 |
| 5 | 10004 | 5 |
| 6 | 10005 | 6 |
| 7 | 10006 | 7 |
| 8 | 10007 | 8 |
| 9 | 10008 | 9 |
| 10 | 10009 | 10 |
| 11 | 10010 | 11 |
| 12 | 10011 | 12 |
| 13 | 10012 | 13 |
| 14 | 10015 | 21 |
| 15 | 10016 | 22 |
| 16 | 10017 | 23 |
| 17 | 10018 | 24 |
| 18 | 10019 | 25 |
| 19 | 10021 | 28 |
| 20 | 10024 | 31 |

```
1  select * from case_fir NATURAL JOIN case_details
2
3
```

Data Output   Explain   Messages   Notifications

| | c_id integer | f_id integer | o_id integer | c_status character varying | c_description character varying (1000) |
|---|---|---|---|---|---|
| 1 | 10000 | 1 | 101 | CLOSED | A lady from Glarayal was shot de... |
| 2 | 10001 | 2 | 102 | CLOSED | A pharmacy Store in Mount Kinze ... |
| 3 | 10002 | 3 | 102 | OPEN | A Locker at the Central Library ha... |
| 4 | 10003 | 4 | 103 | CLOSED | THe victim was brutally raped . T... |
| 5 | 10004 | 5 | 108 | CLOSED | The victim was walking to her eve... |
| 6 | 10005 | 6 | 104 | CLOSED | A house property along with the p... |
| 7 | 10006 | 7 | 102 | OPEN | The accused threw Hydrochloric ... |
| 8 | 10007 | 8 | 105 | CLOSED | The famous Pontiac bandit under... |
| 9 | 10008 | 9 | 103 | CLOSED | Wife had gone  missing after atta... |
| 10 | 10009 | 10 | 106 | OPEN | A teenage girl was allegedly rape... |
| 11 | 10010 | 11 | 103 | CLOSED | Husband after assaulting wife for... |
| 12 | 10011 | 12 | 107 | OPEN | The victim was gang-raped by 4 ... |
| 13 | 10012 | 13 | 108 | OPEN | A lady from Mawat killed her brot... |
| 14 | 10015 | 21 | [null] | [null] | [null] |
| 15 | 10016 | 22 | [null] | [null] | [null] |
| 16 | 10017 | 23 | [null] | [null] | [null] |
| 17 | 10018 | 24 | [null] | [null] | [null] |
| 18 | 10019 | 25 | [null] | [null] | [null] |
| 19 | 10021 | 28 | [null] | [null] | [null] |
| 20 | 10024 | 31 | [null] | [null] | [null] |

# DATA

Accused  :

| Name | Gender | Ad_no |
|---|---|---|
| Andy Reyes | M | 7557576415 |
| Lester Higgins | M | 0945598818 |

| | | |
|---|---|---|
| Bradford Gomez | M | 6400149025 |
| Micheal Jennings | M | 5270320077 |
| Bert Mitchell | M | 9534401788 |
| Minato Ellis | M | 6273139826 |
| Roosevelt Morgan | M | 4054967129 |
| Donald Woods | M | 3995706435 |
| Bena Kim | F | 4064893837 |
| Italia Robin | F | 7625789093 |
| Shalom Cross | F | 1916729587 |
| Christie Fox | F | 2941229216 |
| Denice Ritchie | F | 0817674655 |
| Eber Fields | M | 8527292704 |
| Luther Bailey | M | 1841693034 |
| Crystal Elliott | F | 8134954762 |
| Shawna Welch | F | 1397127847 |

Places:

| |
|---|
| Grand Creek |
| Fort Gisattbra |
| Northern Sma |
| Glarayal |
| Santa Sher |
| Mawat |
| Mount Kinze |
| Royal Elk Port |

Officers:

| Officer ID | Name | Rank |
|---|---|---|
| 100 | Vixen Ray | |
| 101 | Evan Mant | |
| 102 | Ori Cruise | |
| 103 | Croy Felt | |
| 104 | Leon Grim | |
| 105 | Elnora Lopez | |
| 106 | Jameson S | |
| 107 | Akira Wader | |
| 108 | Akella | |

Victims :

| Name | Contact | Gender |
|---|---|---|
| Layla Rin | 5751028504 | F |
| Tianna Diam | 5733303487 | F |
| Alberta Cris | 6520589994 | F |
| Angela Fen | 4904031515 | F |
| Robin Sert | 5611403194 | M |
| Alexander Dunn | 1049040106 | M |
| Robin Horton | 1030850352 | M |
| Andrew Sutton | 4024852249 | M |
| Tracy Dawson | 1381308517 | M |
| Derrick Ramsey | 3701197982 | M |

| | | |
|---|---|---|
| Andre Henry | 3801197982 | M |
| Edna Cross | 5611887694 | F |
| April Robinson | 8704121515 | F |
| Amy Lopez | 4434674315 | F |
| Nora Park | 4911511532 | F |
| Shawn Mcgee | 5644140124 | M |

# SQL QUERIES

Sequence

## OFFICER

### DDL

```
CREATE TABLE public.officer
(
    o_id integer NOT NULL DEFAULT nextval('officer_id'::regclass),
    o_name character varying(50) COLLATE pg_catalog."default",
    o_rank character varying(10) COLLATE pg_catalog."default",
    CONSTRAINT officer_pkey PRIMARY KEY (o_id)
)
```

### DML

```
Insert into officer(o_name,o_rank) values
('Vixen Ray','DGP'),
('Evan Mant','DCP'),
('Ori Cruise','DGP'),
('Croy Felt','DCP'),
('Leon Grim','ASP'),
```

('Elnora Lopez','ASP'),
('Jameson S','ASP'),
('Akira Wader','DCP'),
('Akella','DCP');

```sql
CREATE SEQUENCE public.officer_id
    INCREMENT 1
    START 100
    MINVALUE 100
    MAXVALUE 300
    CACHE 1;
```

## ACCUSED

### DDL

```sql
CREATE TABLE public.accused
(
    a_id integer  NOT NULL DEFAULT nextval('accused_id'::regclass),
    ad_no character varying(10) COLLATE pg_catalog."default",
    a_name character varying(20) COLLATE pg_catalog."default",
    a_gender character(1) COLLATE pg_catalog."default",
    a_status varchar(20),
    a_alias character varying(10) COLLATE pg_catalog."default",
    a_identification character varying(100) COLLATE pg_catalog."default",
    a_age numeric(2,0),
    a_contact numeric(10,0),
    a_address character varying(100) COLLATE pg_catalog."default",
    CONSTRAINT accused_pkey PRIMARY KEY (a_id),
    CONSTRAINT accused_ad_no_check CHECK (ad_no::text ~ '^[0-9]*$'::text),
    CONSTRAINT accused_a_gender_check CHECK (a_gender = ANY
(ARRAY['M'::bpchar, 'F'::bpchar, 'm'::bpchar, 'f'::bpchar])),
    CONSTRAINT accused_a_status_check CHECK (a_status::text = ANY
(ARRAY['Bailed'::character varying, 'Released'::character varying, 'Arrested'::character
varying, 'Escaped'::character varying]::text[])))
```

### DML

```
INSERT INTO public.accused(ad_no, a_name, a_gender, a_alias, a_status,
a_identification, a_age,a_contact,a_address)VALUES
('7557576415', 'Andy Reyes', 'M', 'Andy', 'Arrested', 'Mole on the chin', '34',NULL,'12th
Street ,Popy Gram'),
('0945598818', 'Lester Higgins', 'M', 'Lester', 'Arrested', 'Scar on the face',
'31',1113456789,'87th Lane, Pacific'),
('6400149025', 'Bradford Gomez', 'M', 'Brad', 'Bailed', 'Mole on stomach',
'24',3567780983,'109th Lane,Mawat'),
('5270320077', 'Micheal Jennings', 'M', 'Jenning', 'Dead', 'Blue eyes',
'26',4443986771,NULL),
('9534401788', 'Bert Mitchell', 'M', 'Bert', 'Bailed', 'Bald', '45',NULL,NULL),
('6273139826', 'Minato Ellis', 'M', 'Ellis', 'Arrested', 'Ear missing',
'63',6661029102,'Christian Ro , 12th lane ,Grand Creek'),
('4054967129', 'Roosevelt Morgan', 'M', 'Morgan', 'Arrested', 'Lip ring',
'19',9912029901,'34th Street , Comer ,Glarayal'),
('3995706435', 'Donald Woods', 'M', 'Donald', 'Dead', 'Orange face', '28',NULL,NULL),
('4064893837', 'Bena Kim', 'F', 'Kim', 'Arrested', '6 fingers on left hand',
'39',9901234323,NULL),
('3995712935', 'Frost Bing', 'F', 'Frost', 'Dead', 'Eye patch', '32',7878909872,NULL),
('3078706435', 'Damon Bill', 'M', 'Billerin', 'Bailed', 'Curly hair', '25',NULL,'Mason Billen ,
38th street , Portiol');


CREATE SEQUENCE public.accused_id
    INCREMENT 1
    START 10000
    MINVALUE 10000
    MAXVALUE 30000
    CACHE 1;
```

## VICTIM

DDL

```
CREATE TABLE public.victim
(
    v_id integer NOT NULL DEFAULT nextval('victim_id'::regclass),
    v_name character varying(40) COLLATE pg_catalog."default",
    v_age numeric(2,0),
    v_contact numeric(10,0),
```

```
        v_gender character varying(1) COLLATE pg_catalog."default",
        v_address character varying(100) COLLATE pg_catalog."default",
        CONSTRAINT victim_pkey PRIMARY KEY (v_id),
        CONSTRAINT victim_v_gender_check CHECK (v_gender::text = ANY
(ARRAY['M'::character varying, 'F'::character varying, 'm'::character varying, 'f'::character
varying]::text[]))
)
```

DML

```
INSERT INTO public.victim(
        v_name, v_age, v_contact, v_gender, v_address)VALUES
        ('Layla Rin', '35','5751028504', 'F', '23rd street , RIN ,Grand Creek'),
        ('Tianna Diam', '23','5733303487', 'F', '12th street , MADY , Glarayal'),
        ('Alberta Cris', '25','6520589994', 'F', '8th street , Santa Sher'),
        ('Angela Fen', '41','4904031515', 'F', '9th street Mount Kinze'),
        ('Robin Sert', '23','5611403194', 'M', '234,Royal Elk Port'),
        ('Alexander Dunn', '26','1049040106', 'M', 'Northern Sma'),
        ('Robin Horton', '46','1030850352', 'M', '16,Mount Kinze'),
        ('Andrew Sutton', '48','4024852249', 'M', 'Fort Gisattbra'),
        ('Tracy Dawson', '51','1381308517', 'M', '216,Royal Elk Port'),
        ('Derrick Ramsey', '14','3701197982', 'M', '180,Mount Kinze'),
        ('Andre Henry', '17','3801197982', 'M', 'Fort Gisattbra'),
        ('Edna Cross', '39','5611887694', 'F', '38th street , Santa Sher'),
        ('April Robinson', '35','8704121515', 'F', 'Mawat');

CREATE SEQUENCE public.victim_id
    INCREMENT 1
    START 1000
    MINVALUE 1000
    MAXVALUE 3000
    CACHE 1;
```

# PETITIONER

DDL

```
CREATE TABLE public.petitioner
(
```

```
        p_name character varying(50) COLLATE pg_catalog."default",
        p_contact numeric(10,0),
        p_address character varying(100) COLLATE pg_catalog."default",
        p_gender character(1) COLLATE pg_catalog."default",
        p_age integer,
        CONSTRAINT petitioner_pkey PRIMARY KEY (p_name ,p_contact),
        CONSTRAINT petitioner_p_gender_check CHECK (p_gender = ANY
(ARRAY['M'::bpchar, 'F'::bpchar, 'm'::bpchar, 'f'::bpchar]))
)
```

DML

```
INSERT INTO public.petitioner(
        p_name, p_contact, p_address, p_gender, p_age)VALUES
        ('Lon Prince', 8903284489, '90th Lane , Lon , Fort Gisattbra', 'M', 45),
        ('Oswaldo Swann', 8896521456, '28th Lane ,House 6 Glarayal', 'M', 23),
        ('Theo Shackelford', 1145236789, 'Mayden street ,Santa Sher', 'M', 39),
        ('Benton Ratliff', 2563478965, 'Fort 23 , Royal Elk Port', 'M', 46),
        ('Rico Birch', 1204563104, 'Campsite 12 , Grand Creek', 'M', 29),
        ('Cassandra Miller', 4120365897, 'Wayden street , Mount Kinze', 'F', 75),
        ('Laura Black', 5639870125, 'Fort 62 ,Royal Elk Port', 'F', 36),
        ('Sheryl Ortega', 1470325896, 'Daymon street , House 23 ,Glarayal', 'F', 57),
        ('Genevieve Becker', 2340156398, 'Forben mount Moss street , Northern Sma',
'F', 36),
        ('Christy Gonzalez', 1048763025, 'Redrick Chase , Mawat', 'F', 41);
```

# FIR

DDL

```
CREATE TABLE fir
(
        f_id SERIAL PRIMARY KEY,
        v_id int , l_place varchar(100),
        l_date date DEFAULT current_date,
        l_time time default current_time ,
        i_place varchar(100),
        i_date date, i_time time,
        p_name varchar(50),
```

```sql
        p_contact numeric(10),
        a_id int , crime varchar(1000),
        constraint fir_fk1 FOREIGN KEY(a_id) references accused(a_id),
        constraint fir_fk2 FOREIGN KEY(p_name,p_contact) references
        petitioner(p_name,p_contact),
        constraint fir_fk3 FOREIGN KEY(v_id) references victim(v_id)
);
```

DML

```sql
INSERT INTO public.fir(v_id, l_place, l_date, l_time, i_place, i_date, i_time, p_name,
p_contact, a_id,crime) VALUES
        (1000, 'Glarayal','2014-09-13', '12:20', 'Glarayal','2014-09-12', '10:00', 'Lon Prince',
8903284489, 10000, 'Murder'),
        (1001, 'Mawat','2015-07-11', '10:10', 'Mount Kinze','2015-07-11', '7:00', 'Oswaldo
Swann', 8896521456, 10001, 'Theft:Shoplifting'),
        (1002, 'Northern Sma', '2015-06-10', '06:45','Glarayal', '2015-06-09', '10:45',
'Benton Ratliff', 2563478965, 10002, 'Theft:Stole from Locker'),
        (1003, 'Royal Elk Port', '2016-08-24', '09:45','Royal Elk Port', '2016-08-23', '6:30',
'Cassandra Miller', 4120365897, 10004, 'Rape'),
        (1004, 'Santa Sher', '2012-05-16', '6:28','Santa Sher', '2012-05-15', '11:30', 'Laura
Black', 5639870125, 10003, 'Kidnapping'),
        (1005, 'Northern Sma', '2014-02-22', '02:06','Mawat', '2014-02-21', '12:15', 'Sheryl
Ortega', 1470325896, 10005, 'Arson'),
        (1006, 'Mount Kinze', '2016-04-13', '16:50','Fort Gisattbra', '2016-04-12', '16:20',
'Genevieve Becker', 2340156398, 10006, 'Attack:Acid attack'),
        (1007, 'Grand Creek', '2017-12-09', '12:30','Grand Creek', '2017-12-08', '22:35',
'Christy Gonzalez', 1048763025, 10007, 'Vandalism:Keyed a car'),
        (1008, 'Santa Sher', '2019-01-06', '05:45','Fort Gisattbra', '2019-01-06', '03:45',
'Rico Birch', 1204563104, 10008, 'Assault on Husband'),
        (1009, 'Royal Elk Port', '2015-12-26', '10:20','Mawat', '2015-12-25', '09:50', 'Benton
Ratliff', 2563478965, 10007, 'Rape'),
        (1010, 'Grand Creek', '2013-11-14', '07:35','Grand Creek', '2013-11-13', '07:36',
'Theo Shackelford', 1145236789, 10010, 'Assault on Wife'),
        (1011, 'Mount Kinze', '2016-10-28', '05:15','Mount Kinze', '2016-10-27', '06:25',
'Oswaldo Swann', 8896521456, 10009, 'Rape'),
        (1012, 'Fort Gisattbra', '2013-06-25', '06:33','Mawat', '2013-06-24', '10:10',
'Cassandra Miller', 4120365897, 10008, 'Murder');
```

# CASE_FIR

## DDL

```sql
CREATE TABLE case_fir(
        c_id integer DEFAULT nextval('case_id'::regclass) PRIMARY KEY ,
        f_id integer,
        constraint case_fir_fk FOREIGN KEY(f_id) references fir(f_id)
);
```

## DML

```sql
INSERT INTO case_fir(f_id) VALUES
(1),
(2),
(3),
(4),
(5),
(6),
(7),
(8),
(9),
(10),
(11),
(12),
(13);


CREATE SEQUENCE public.case_id
    INCREMENT 1
    START 10000
    MINVALUE 10000
    MAXVALUE 30000
    CACHE 1;
```

# CASE_DETAILS

## DDL

```
create table case_details(
        c_id int PRIMARY KEY,
        o_id int ,
        c_status varchar(7) CHECK(c_status in ('OPEN','CLOSED')),
        c_description varchar(1000),
        CONSTRAINT cd_fk1 FOREIGN KEY(c_id) references case_fir(c_id),
        constraint cd_fk2 FOREIGN KEY(o_id) references officer(o_id)
);
```

## DML

```
insert into case_details VALUES
(10000,101,'CLOSED','A lady from Glarayal was shot dead "by accident" . Accused
claims he intender to shoot someone else , was charged of Murder and sentenced to jail
for 12 years'),
(10001,102,'CLOSED','A pharmacy Store in Mount Kinze was shoplifted.Medicines worth
at least 30000 dollars had been robbed.The accused was Sentenced to 5 years of
imprisonment'),
(10002,102,'OPEN','A Locker at the Central Library had been robbed by a group of 3
thieves. Only one of them was caught.'),
(10003,103,'CLOSED','THe victim was brutally raped . The accused was sentenced to
death.'),
(10004,108,'CLOSED','The victim was walking to her everyday Gym , and was abducted
and killed for money.The accused is sentenced to death.'),
(10005,104,'CLOSED','A house property along with the papers had been set on fire due
to some inter-family matters , by a close cousin.The accused is sentenced to life-time
imprisonment.'),
(10006,102,'OPEN','The accused threw Hydrochloric Acid on the victims face outside the
Stroi College . Reason of Crime under investigation. Accused under arrest and in in for
questioning'),
(10007,105,'CLOSED','The famous Pontiac bandit under arrest again for keying a BMW
outside Grand Villa.Accused under arrest and under lockdown for 8 days with an
additional payment of 4000 dollars.'),
```

(10008,103,'CLOSED','Wife had gone missing after attacking husband with a knife. Victim;s condition is stable. She was found 5 days later and sentenced to 7 years of jail.'),
(10009,106,'OPEN','A teenage girl was allegedly raped by her uncle when nobodu was home, accused sentenced to death.'),
(10010,103,'CLOSED','Husband after assaulting wife for not making him Chicken wings , is under arrest and will have to spend 10 days in jail along with a necessary payment of 10000 dollars for assaulting wife multiple times.'),
(10011,107,'OPEN','The victim was gang-raped by 4 men .Three escaped , case still under investigation.The accused found is under investigation.'),
(10012,108,'OPEN','A lady from Mawat killed her brother with an axe. Criminal under police custody. Reason for murder is not known yet. Court summoning to start from July .');

# TRIGGERS

1. Trigger to avoid duplicate Petitioner details , but update the FIR and case

2. Trigger to avoid duplicate Accused details

```
CREATE FUNCTION accused_func()
RETURNS TRIGGER
AS $$
DECLARE cnt integer;
BEGIN
IF EXISTS (
select table_name from information_schema.tables where table_name='acc_table')
THEN
DROP TABLE acc_table;
```

```
END IF;
CREATE TEMP TABLE acc_table AS
SELECT a_id,ad_no from  accused WHERE NEW.ad_no = accused.ad_no;
SELECT count(*) INTO cnt from acc_table;
if cnt>=1
THEN
  RAISE EXCEPTION 'Accused details already exists';
   RETURN NULL;
END IF;
IF cnt=0
THEN
RETURN NEW;
END IF;
RETURN NULL;
END;
$$
LANGUAGE plpgsql;


CREATE TRIGGER accused_trigger BEFORE INSERT OR UPDATE
ON accused
FOR EACH ROW EXECUTE PROCEDURE accused_func();
```

3. Trigger to avoid duplicate rows in Victim table

```
CREATE FUNCTION victim_func()
RETURNS TRIGGER
AS $$
DECLARE cnt_vic integer;
BEGIN
        IF EXISTS (
        select table_name from information_schema.tables where table_name='vic_table')
        THEN
        DROP TABLE vic_table;
        END IF;
        CREATE TEMP TABLE vic_table AS
```

```
        SELECT v_id from  victim WHERE (NEW.v_name = victim.v_name AND
        NEW.v_contact=victim.v_contact AND NEW.v_age=victim.v_age AND
        NEW.v_address=victim.v_address) ;
        SELECT count(*) INTO cnt_vic from vic_table;
        if cnt_vic>=1
        THEN
          RAISE EXCEPTION 'Victim details already exists';
          RETURN NULL;
        END IF;
        IF cnt_vic=0
        THEN
                RETURN NEW;
        END IF;
        RETURN NULL;
END;
$$
LANGUAGE plpgsql;



CREATE TRIGGER victim_trigger BEFORE INSERT OR UPDATE
ON victim
FOR EACH ROW EXECUTE PROCEDURE victim_func();
```

4. Trigger to avoid duplicate FIRs

```
CREATE FUNCTION FIR_func()
RETURNS TRIGGER
AS $$
DECLARE cnt_FIR integer;
BEGIN
        IF EXISTS (
        select table_name from information_schema.tables where table_name='fir_table')
        THEN
        DROP TABLE fir_table;
        END IF;
        CREATE TEMP TABLE FIR_table AS
        SELECT v_id from  fir WHERE (NEW.crime = fir.crime AND NEW.v_id=fir.v_id
        AND NEW.i_place=fir.i_place AND
```

```
            NEW.i_date=fir.i_date AND NEW.i_place=fir.i_place) ;
            SELECT count(*) INTO cnt_FIR from FIR_table;
            if cnt_FIR>=1
            THEN
               RAISE EXCEPTION 'FIR already filed on this crime';
               RETURN NULL;
            END IF;
            IF cnt_FIR=0
            THEN
                    RETURN NEW;
            END IF;
            RETURN NULL;
       END;
       $$
       LANGUAGE plpgsql;



       CREATE TRIGGER FIR_trigger BEFORE INSERT
       ON fir
       FOR EACH ROW EXECUTE PROCEDURE FIR_func();
```

# RETRIEVAL QUERIES

1. Display the names of those victims , the status of the case , and the officer who filed the case , where the incident took place in Mawat

```
select v_name,o_name,c_status from
(
        (
                (
                (fir join victim on fir.v_id = victim.v_id)
                JOIN case_fir on fir.f_id = case_fir.f_id
        )
        JOIN case_details on case_fir.c_id = case_details.c_id
) JOIN officer on officer.o_id = case_details.o_id
)
        where i_place = 'Mawat'
```

Output

| v_name<br>character varying (40) | 🔒 | o_name<br>character varying (50) | 🔒 | c_status<br>character varying (7) | 🔒 |
|---|---|---|---|---|---|
| 1  Alexander Dunn | | Leon Grim | | CLOSED | |
| 2  Derrick Ramsey | | Jameson S | | OPEN | |
| 3  April Robinson | | Akella | | OPEN | |

2. Display the victim names,address and the petitioner name of the crimes which took place in May of any year where the petitioner is a Female.

SELECT v_name, p_name
From
(
SELECT * FROM victim NATURAL JOIN fir
WHERE EXTRACT(MONTH FROM i_date)=5
)
AS FOO NATURAL JOIN petitioner
Where p_gender='F';

Output

| p_name<br>character varying (50) | 🔒 | v_name<br>character varying (40) | 🔒 |
|---|---|---|---|
| 1  Laura Black | | Robin Sert | |

3. Display the crime details with criminal status , case status and description of the crime of those crimes which took place after 15th of any month and year.

select a_status,c_status,c_description from
(
        (
        (
        fir JOIN accused AC on AC.a_id = fir.a_id
        )
        JOIN case_fir CF on CF.f_id = fir.f_id
        )
        JOIN case_details CD on CD.c_id = CF.c_id
)

where (EXTRACT(DAY FROM fir.i_date) >15)

Output

| | a_status<br>character varying (20) | c_status<br>character varying (7) | c_description<br>character varying (1000) |
|---|---|---|---|
| 1 | Bailed | CLOSED | THe victim was brutally raped . ... |
| 2 | Arrested | CLOSED | A house property along with the... |
| 3 | Dead | OPEN | A teenage girl was allegedly rap... |
| 4 | Dead | OPEN | The victim was gang-raped by 4... |
| 5 | Arrested | OPEN | A lady from Mawat killed her br... |
| 6 | Arrested | [null] | [null] |
| 7 | Arrested | [null] | [null] |

Data Output    Explain    Messages    Notifications

4. Display the criminal details and associated crimes , with the victim name for a
   criminal named Roosevelt Morgan.

   select a_name,a_contact,ad_no,c_description,v_name,crime from
   (
           ((
           (fir JOIN accused AC on AC.a_id =fir.a_id )
           JOIN case_fir CF on CF.f_id = fir.f_id
           )
           JOIN case_details CD on CD.c_id = CF.c_id
            )JOIN victim on fir.v_id = victim.v_id
   )
   where AC.a_name = 'Roosevelt Morgan'

Output

Data Output    Explain    Messages    Notifications

| | a_name<br>character varying (20) | a_contact<br>numeric (10) | ad_no<br>character varying (10) | c_description<br>character varying (1000) | v_name<br>character varying (40) | crime<br>character varying (1000) |
|---|---|---|---|---|---|---|
| 1 | Roosevelt Morgan | 9912029901 | 4054967129 | The accused threw Hydrochlori... | Robin Horton | Attack:Acid attack |
| 2 | Roosevelt Morgan | 9912029901 | 4054967129 | [null] | Laila Rin | Vandalism |

5. Count and details of criminals who are dead/bailed who were in an incident whose victim
   is dead
6. Count of status of criminals where the case closed/open

   SELECT a_status, Count(a_status)
   FROM(
   SELECT DISTINCT(a_id), a_status, a_name

FROM (SELECT * FROM (case_details NATURAL JOIN case_fir NATURAL JOIN fir)
WHERE c_status='OPEN') AS func NATURAL JOIN accused) AS foo
Group BY(a_status);

Output:

| | a_status<br>character varying (20) | count<br>bigint |
|---|---|---|
| 1 | Arrested | 2 |
| 2 | Bailed | 1 |
| 3 | Dead | 2 |