Relational Model:

- **Users** (User_ID, password,Email_ID, gender, Address, Current_location, Ethnicity)

  User_ID is PRIMARY KEY and Email ID is Unique.
- **Feedback** (Feedback_ID, Description, *User_ID*)

  Feedback_ID is PRIMARY KEY

  FOREIGN KEY User_ID refers to Users; NOT NULL
- **Belong_to**(User_ID, Area_ID)

  FOREIGN KEY User_ID refers to Users; NOT NULL

  FOREIGN KEY Area_ID refers to Areas; NOT NULL

  User_ID and Area_ID is PRIMARY KEY together
- **Areas** (Area_ID, Crime_Rate,Location, Nearest_Safezone_ID)

  Area_ID is PRIMARY KEY
- **Safezone** (Safezone_ID, Location)

  Safezone_ID is the PRIMARY KEY
- **PoliceStation** (Safezone_ID)

  FOREIGN KEY Safezone_ID refers to Safezone; NOT NULL
- **Hospitals** (Safezone_ID)

  FOREIGN KEY Safezone_ID refers to Safezone; NOT NULL
- **FireStation** (Safezone_ID)

  FOREIGN KEY Safezone_ID refers to Safezone; NOT NULL
- **Transportation** (Safezone_ID, Routes, Timings, Type)

  FOREIGN KEY Safezone_ID refers to Safezone; NOT NULL
- **Has** (Area_ID, Safezone_ID)

  FOREIGN KEY Area_ID refers to Areas; NOT NULL

  FOREIGN KEY Safezone_ID refers to Safezone; NOT NULL

  Safezone_ID and Area_ID is PRIMARY KEY together
- **Incidents** (Incident_ID, Description, Incident_type)

  Incident_ID is the PRIMARY KEY
- **Occurred** (Area_ID, Incident_ID)

FOREIGN KEY Incident_ID refers to Incidents; NOT NULL

FOREIGN KEY Area_ID refers to Areas; NOT NULL

Incident_ID and Area_ID is PRIMARY KEY together

- **Suspects** (Suspect_ID, Name, Address_Area, In_jail, Photo)

  Suspect_ID is PRIMARY KEY

- **Caused_by** (Incident_ID, Suspect_ID)

  FOREIGN KEY Incident_ID refers to Incidents; NOT NULL

  FOREIGN KEY Suspect_ID refers to Incidents; NOT NULL

  Incident_ID and Suspect_ID is PRIMARY KEY together

Implementation in MySQL:

Creation of Tables using Create Command:

-- Table: Users

```
CREATE TABLE Users (
    User_ID INT PRIMARY KEY,
    Password VARCHAR(255), -- assuming a reasonable length
    Email_ID VARCHAR(255) UNIQUE,
    Gender VARCHAR(10), -- assuming 'Male' or 'Female'
    Address VARCHAR(255),
    Current_location VARCHAR(255),
    Ethnicity VARCHAR(50)
);
```

```
-- Table: Feedback
CREATE TABLE Feedback (
    Feedback_ID INT PRIMARY KEY,
    Description TEXT,
    User_ID INT NOT NULL,
    FOREIGN KEY (User_ID) REFERENCES Users(User_ID),
    FOREIGN KEY (Area_ID) REFERENCES Areas(Area_ID)
);

-- Table: Belong_to
CREATE TABLE Belong_to (
    User_ID INT,
    Area_ID INT,
    PRIMARY KEY (User_ID, Area_ID),
    FOREIGN KEY (User_ID) REFERENCES Users(User_ID),
    FOREIGN KEY (Area_ID) REFERENCES Areas(Area_ID)
);

-- Table: Areas
CREATE TABLE Areas (
```

```
    Area_ID INT PRIMARY KEY,
    Crime_Rate FLOAT,
    Nearest_Safezone_ID INT,
    Location VARCHAR(255)
    FOREIGN KEY (Nearest_Safezone_ID) REFERENCES Safezone(Safezone_ID)
);
```

-- Table: Safezone

```
CREATE TABLE Safezone (
    Safezone_ID INT PRIMARY KEY,
    Location VARCHAR(255)
);
```

-- Table: PoliceStation

```
CREATE TABLE PoliceStation (
    Safezone_ID INT PRIMARY KEY,
    FOREIGN KEY (Safezone_ID) REFERENCES Safezone(Safezone_ID)
);
```

-- Table: Hospitals

```
CREATE TABLE Hospitals (
    Safezone_ID INT PRIMARY KEY,
    FOREIGN KEY (Safezone_ID) REFERENCES Safezone(Safezone_ID)
);
```

-- Table: FireStation

```
CREATE TABLE FireStation (
    Safezone_ID INT PRIMARY KEY,
    FOREIGN KEY (Safezone_ID) REFERENCES Safezone(Safezone_ID)
);
```

-- Table: Transportation

```
CREATE TABLE Transportation (
    Safezone_ID INT PRIMARY KEY,
    Routes VARCHAR(255),
    Timings VARCHAR(50),
    Type VARCHAR(50),
    FOREIGN KEY (Safezone_ID) REFERENCES Safezone(Safezone_ID)
);
```

```
-- Table: Has
CREATE TABLE Has (
    Area_ID INT,
    Safezone_ID INT,
    PRIMARY KEY (Area_ID, Safezone_ID),
    FOREIGN KEY (Area_ID) REFERENCES Areas(Area_ID),
    FOREIGN KEY (Safezone_ID) REFERENCES Safezone(Safezone_ID)
);

-- Table: Incidents
CREATE TABLE Incidents (
    Incident_ID INT PRIMARY KEY,
    Description TEXT,
    Incident_type VARCHAR(50)
);

-- Table: Occurred
CREATE TABLE Occurred (
    Area_ID INT,
    Incident_ID INT,
```

```
    PRIMARY KEY (Area_ID, Incident_ID),
    FOREIGN KEY (Area_ID) REFERENCES Areas(Area_ID),
    FOREIGN KEY (Incident_ID) REFERENCES Incidents(Incident_ID)
);
```

-- Table: Suspects

```
CREATE TABLE Suspects (
    Suspect_ID INT PRIMARY KEY,
    Name VARCHAR(255),
    Address_Area VARCHAR(255),
    In_jail BOOLEAN,
    Photo BLOB -- assuming binary large object for storing images
);
```

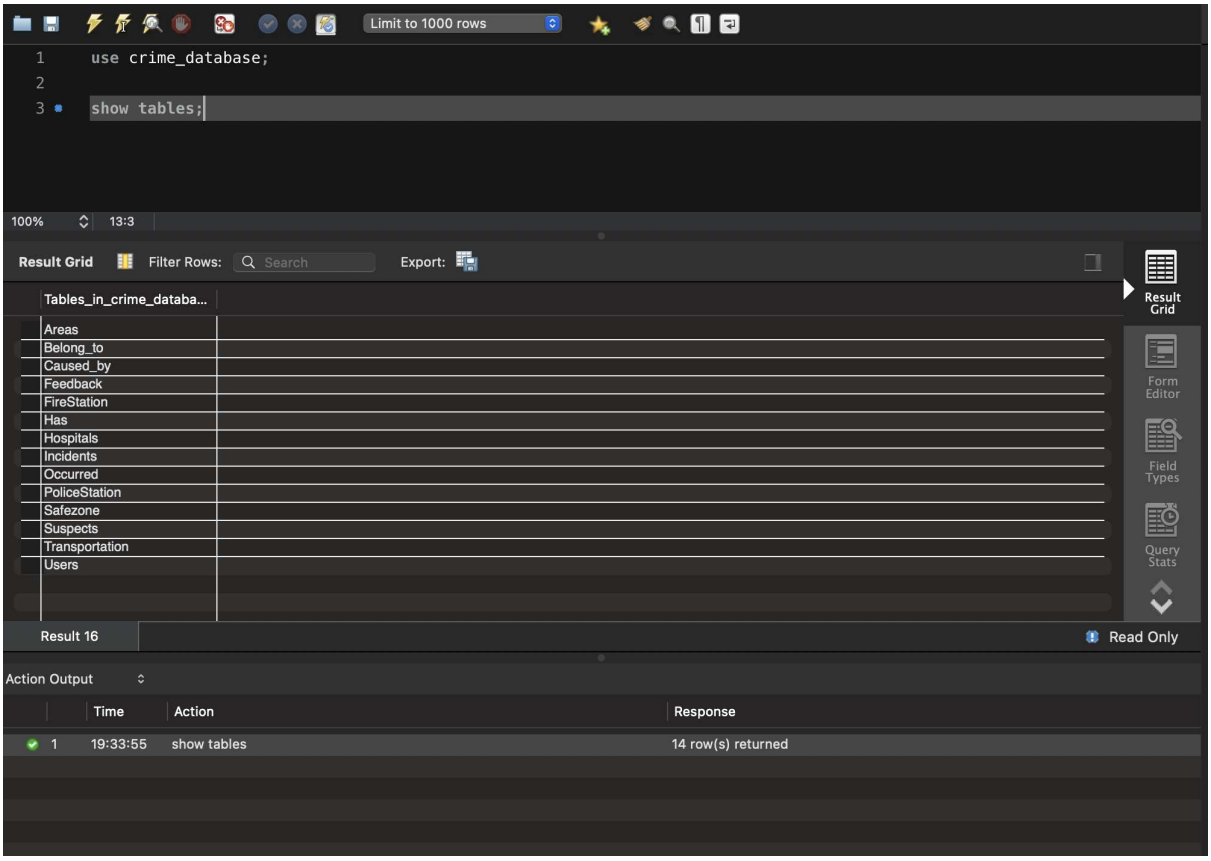
-- Table: Caused_by

```
CREATE TABLE Caused_by (
    Incident_ID INT,
    Suspect_ID INT,
    PRIMARY KEY (Incident_ID, Suspect_ID),
    FOREIGN KEY (Incident_ID) REFERENCES Incidents(Incident_ID),
```

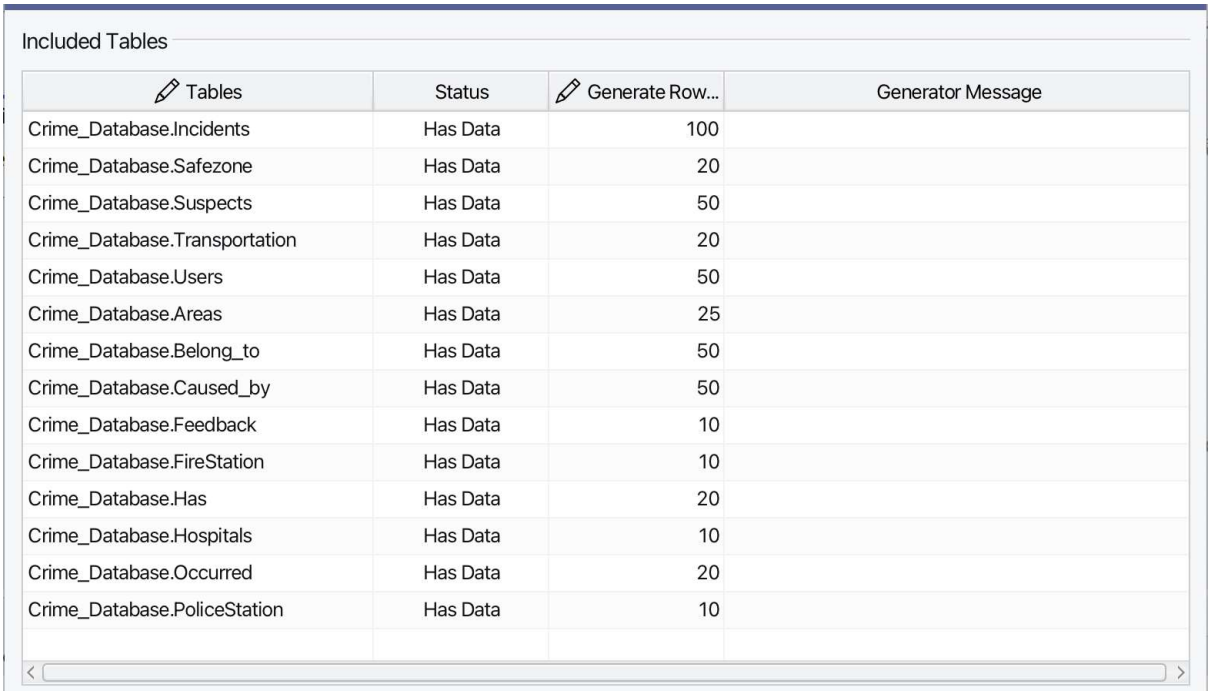
```
    FOREIGN KEY (Suspect_ID) REFERENCES Suspects(Suspect_ID)

);
```

Populating our database:

Showing all of tables:



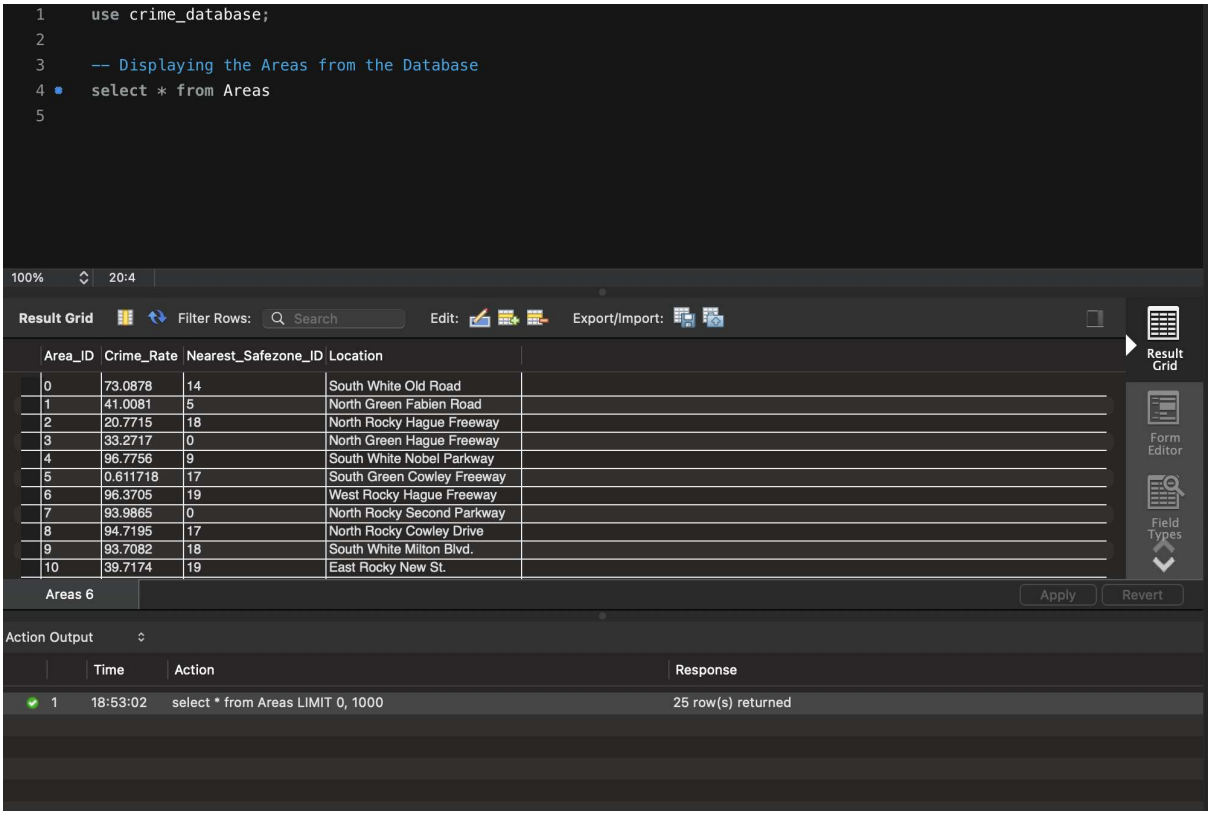
Included Tables and Specified Number of Rows for Populating Data



Included Tables

Tables	Status	Generate Row...	Generator Message
Crime_Database.Incidents	Has Data	100	
Crime_Database.Safezone	Has Data	20	
Crime_Database.Suspects	Has Data	50	
Crime_Database.Transportation	Has Data	20	
Crime_Database.Users	Has Data	50	
Crime_Database.Areas	Has Data	25	
Crime_Database.Belong_to	Has Data	50	
Crime_Database.Caused_by	Has Data	50	
Crime_Database.Feedback	Has Data	10	
Crime_Database.FireStation	Has Data	10	
Crime_Database.Has	Has Data	20	
Crime_Database.Hospitals	Has Data	10	
Crime_Database.Occurred	Has Data	20	
Crime_Database.PoliceStation	Has Data	10	

Populated Data and Displaying Areas in Our Database



```
use crime_database;

-- Displaying the Areas from the Database
select * from Areas
```

100% 20:4

Result Grid | Filter Rows: Search | Edit: | Export/Import:

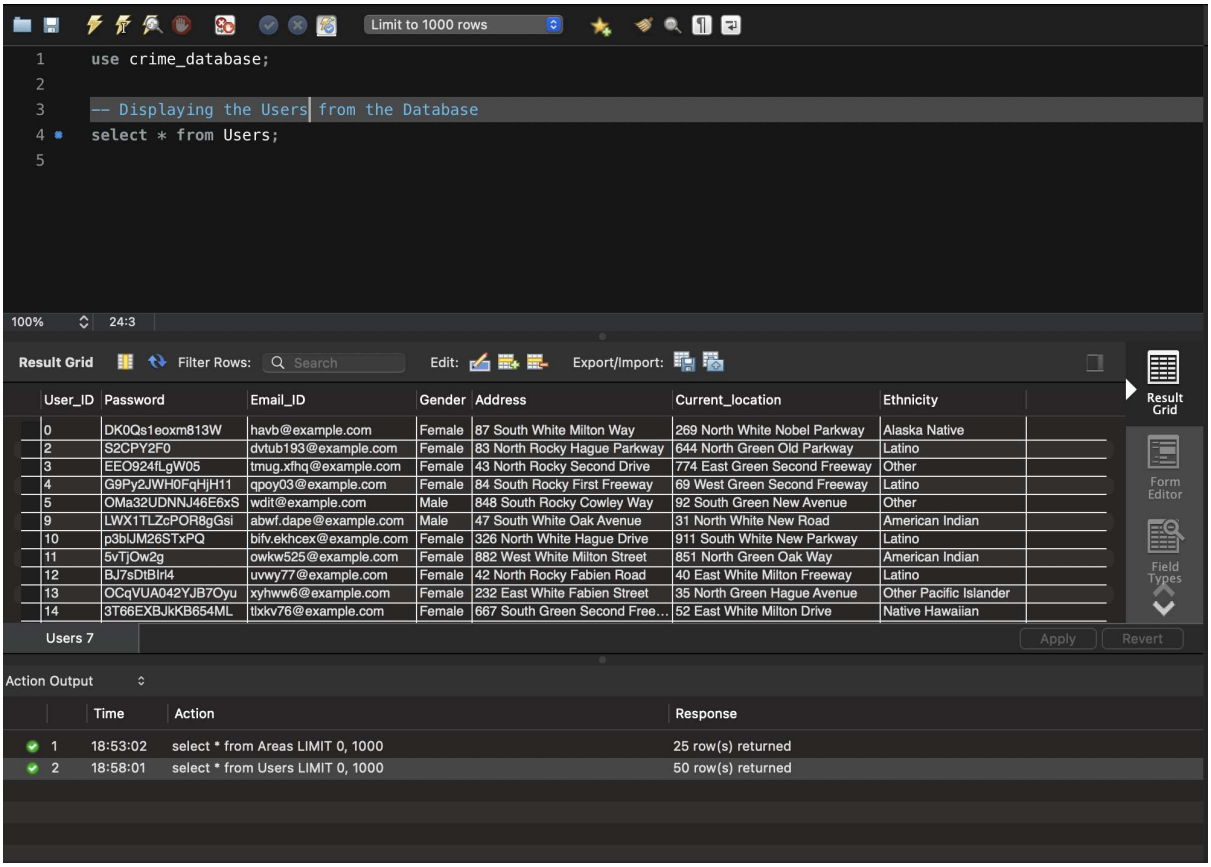
Area_ID	Crime_Rate	Nearest_Safezone_ID	Location
0	73.0878	14	South White Old Road
1	41.0081	5	North Green Fabien Road
2	20.7715	18	North Rocky Hague Freeway
3	33.2717	0	North Green Hague Freeway
4	96.7756	9	South White Nobel Parkway
5	0.611718	17	South Green Cowley Freeway
6	96.3705	19	West Rocky Hague Freeway
7	93.9865	0	North Rocky Second Parkway
8	94.7195	17	North Rocky Cowley Drive
9	93.7082	18	South White Milton Blvd.
10	39.7174	19	East Rocky New St.

Areas 6 | Apply | Revert

Action Output

	Time	Action	Response
1	18:53:02	select * from Areas LIMIT 0, 1000	25 row(s) returned

Populated Data and Displaying Users in Our Database



```
use crime_database;

-- Displaying the Users from the Database
select * from Users;
```

100% 24:3

Result Grid | Filter Rows: Search | Edit: | Export/Import:

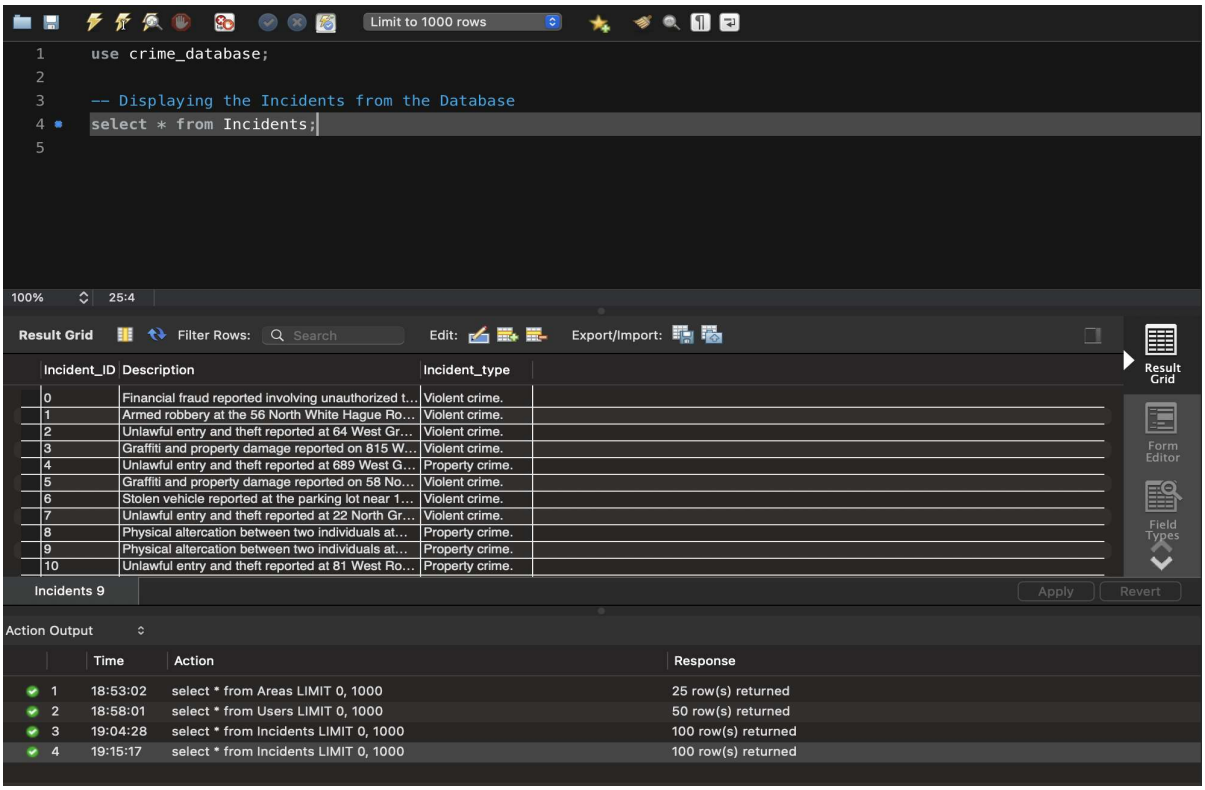
User_ID	Password	Email_ID	Gender	Address	Current_location	Ethnicity
0	DK0Qs1eoxm813W	havb@example.com	Female	87 South White Milton Way	269 North White Nobel Parkway	Alaska Native
2	S2CPY2F0	dvtub193@example.com	Female	83 North Rocky Hague Parkway	644 North Green Old Parkway	Latino
3	EEO924fLgW05	tmug.xfhq@example.com	Female	43 North Rocky Second Drive	774 East Green Second Freeway	Other
4	G9Py2JWH0FqHjH11	qpoy03@example.com	Female	84 South Rocky First Freeway	69 West Green Second Freeway	Latino
5	OMa32UDNNJ46E6xS	wdit@example.com	Male	848 South Rocky Cowley Way	92 South Green New Avenue	Other
9	LWX1TLZcPOR8gGsi	abwf.dape@example.com	Male	47 South White Oak Avenue	31 North White New Road	American Indian
10	p3blJM26STxPQ	bifv.ekhcex@example.com	Female	326 North White Hague Drive	911 South White New Parkway	Latino
11	5vTjOw2g	owkw525@example.com	Female	882 West White Milton Street	851 North Green Oak Way	American Indian
12	BJ7sDtBIrl4	uvwy77@example.com	Female	42 North Rocky Fabien Road	40 East White Milton Freeway	Latino
13	OCqVUA042YJB7Oyu	xyhww6@example.com	Female	232 East White Fabien Street	35 North Green Hague Avenue	Other Pacific Islander
14	3T66EXBJkKB654ML	tlxkv76@example.com	Female	667 South Green Second Free...	52 East White Milton Drive	Native Hawaiian

Users 7 | Apply | Revert

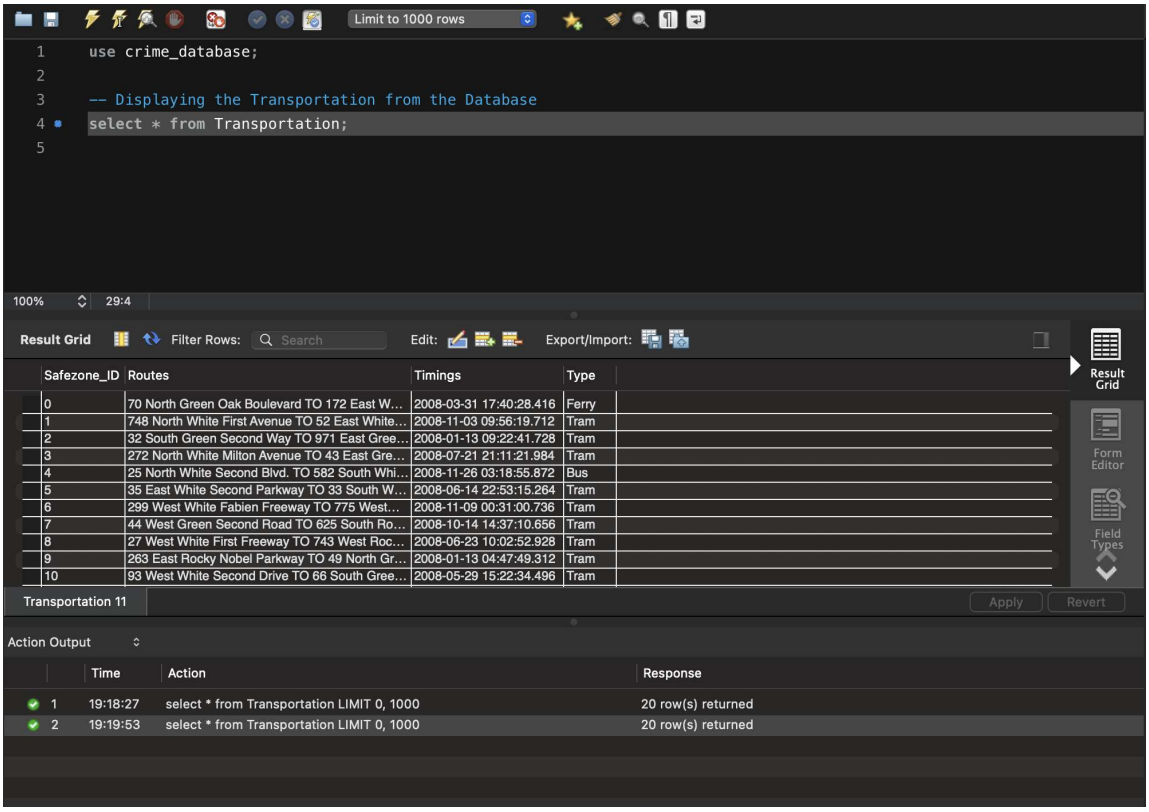
Action Output

	Time	Action	Response
1	18:53:02	select * from Areas LIMIT 0, 1000	25 row(s) returned
2	18:58:01	select * from Users LIMIT 0, 1000	50 row(s) returned

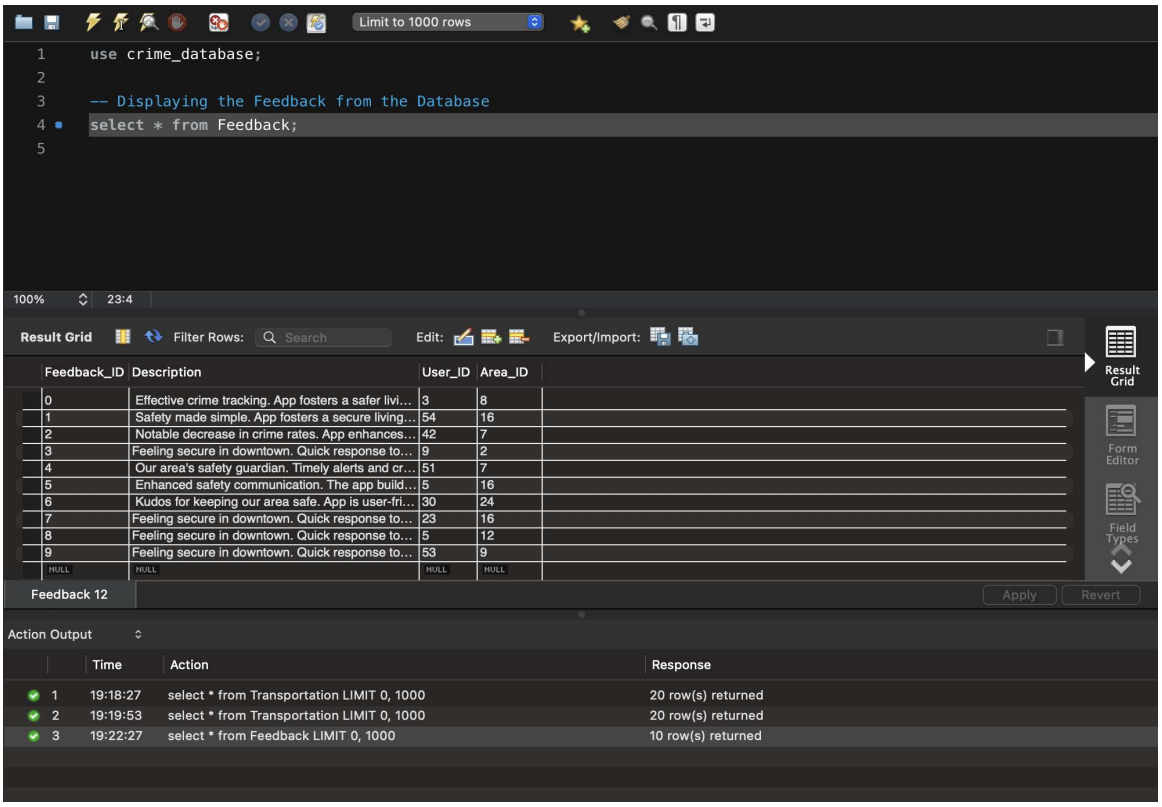
Populated Data and Displaying Incidents in Our Database



Populated Data and Displaying Transportation in Our Database



Populated Data and Displaying Feedback in Our Database

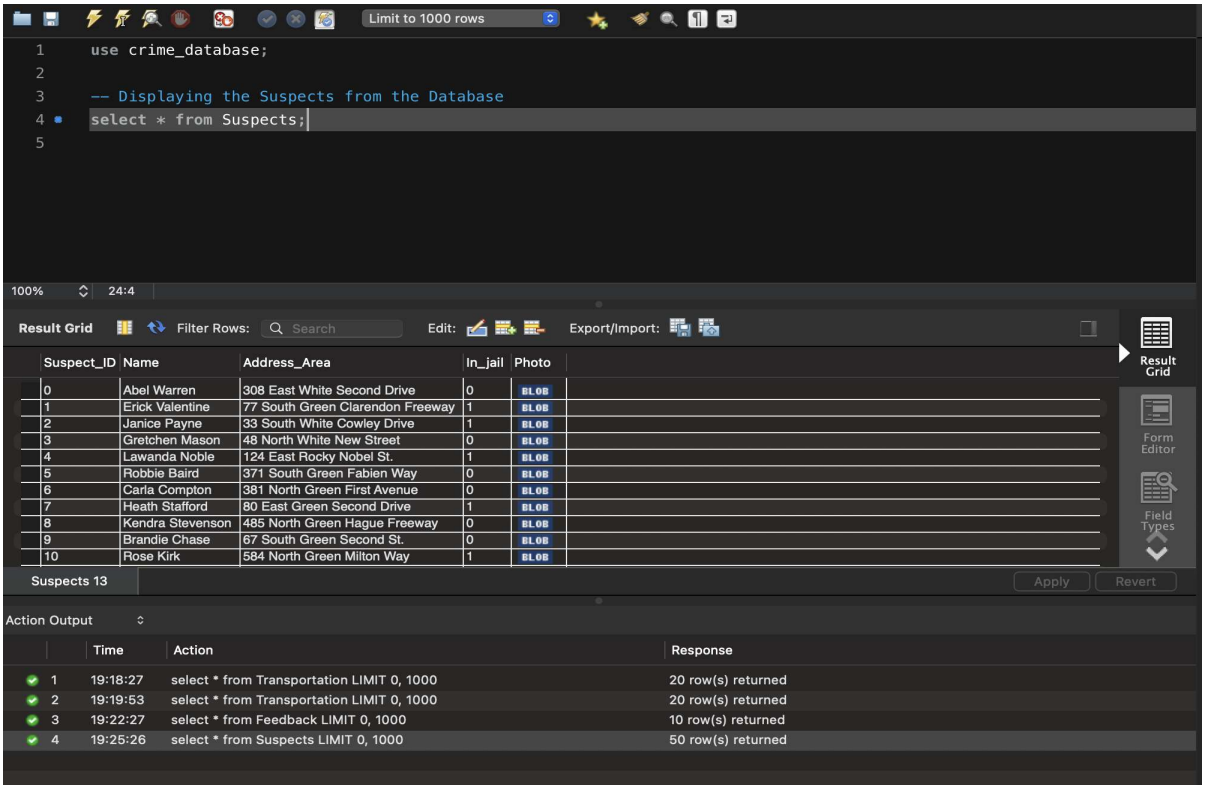


```
use crime_database;

-- Displaying the Feedback from the Database
select * from Feedback;
```

Feedback_ID	Description	User_ID	Area_ID
0	Effective crime tracking. App fosters a safer livi…	3	8
1	Safety made simple. App fosters a secure living…	54	16
2	Notable decrease in crime rates. App enhances…	42	7
3	Feeling secure in downtown. Quick response to…	9	2
4	Our area's safety guardian. Timely alerts and cr…	51	7
5	Enhanced safety communication. The app build…	5	16
6	Kudos for keeping our area safe. App is user-fri…	30	24
7	Feeling secure in downtown. Quick response to…	23	16
8	Feeling secure in downtown. Quick response to…	5	12
9	Feeling secure in downtown. Quick response to…	53	9

	Time	Action	Response
1	19:18:27	select * from Transportation LIMIT 0, 1000	20 row(s) returned
2	19:19:53	select * from Transportation LIMIT 0, 1000	20 row(s) returned
3	19:22:27	select * from Feedback LIMIT 0, 1000	10 row(s) returned

Populated Data and Displaying Suspects in Our Database



```
use crime_database;

-- Displaying the Suspects from the Database
select * from Suspects;
```

Suspect_ID	Name	Address_Area	In_jail	Photo
0	Abel Warren	308 East White Second Drive	0	BLOB
1	Erick Valentine	77 South Green Clarendon Freeway	1	BLOB
2	Janice Payne	33 South White Cowley Drive	1	BLOB
3	Gretchen Mason	48 North White New Street	0	BLOB
4	Lawanda Noble	124 East Rocky Nobel St.	1	BLOB
5	Robbie Baird	371 South Green Fabien Way	0	BLOB
6	Carla Compton	381 North Green First Avenue	0	BLOB
7	Heath Stafford	80 East Green Second Drive	1	BLOB
8	Kendra Stevenson	485 North Green Hague Freeway	0	BLOB
9	Brandie Chase	67 South Green Second St.	0	BLOB
10	Rose Kirk	584 North Green Milton Way	1	BLOB

	Time	Action	Response
1	19:18:27	select * from Transportation LIMIT 0, 1000	20 row(s) returned
2	19:19:53	select * from Transportation LIMIT 0, 1000	20 row(s) returned
3	19:22:27	select * from Feedback LIMIT 0, 1000	10 row(s) returned
4	19:25:26	select * from Suspects LIMIT 0, 1000	50 row(s) returned

Populated Data and Displaying Hospitals in Our Database