This document contains the questions I explored regarding the LAPD dataset and the corresponding SQL queries I used to answer those questions.

Questions

1. **What is the total number of incidents reported for each area?**
   - **Approach:** The incidents table includes the Area_ID for each police report and the Locations table includes the Area_Name for each ID. Our approach is to use the COUNT function and JOIN to count the number of incidents and join on the locations table to select the Area_Name field.
   - **Query:** SELECT i.Area_ID, l.Area_Name, COUNT(i.Incident_ID) AS Total_Incidents FROM Incidents i JOIN Locations l ON i.Area_ID = l.Area_ID GROUP BY i.Area_ID, l.Area_Name ORDER BY Total_Incidents DESC;
   - **Insights:** Central LA is where the most crime occurred in LA. 77th Street, Pacific, and Southwest LA are also hotbeds of crime. The LAPD should target crime reduction strategies to these locations.

```
+---------+--------------+------------------+
| Area_ID | Area_Name    | Total_Incidents  |
+---------+--------------+------------------+
|       1 | Central      |            16955 |
|      12 | 77th Street  |            13935 |
|      14 | Pacific      |            13779 |
|       3 | Southwest    |            13105 |
|      13 | Newton       |            11925 |
|      20 | Olympic      |            11738 |
|       7 | Wilshire     |            11705 |
|      15 | N Hollywood  |            11548 |
|       2 | Rampart      |            11527 |
|       6 | Hollywood    |            11439 |
|      18 | Southeast    |            11290 |
|       8 | West LA      |            10579 |
|       9 | Van Nuys     |             9935 |
|      10 | West Valley  |             9928 |
|      17 | Devonshire   |             9772 |
|      11 | Northeast    |             9708 |
|      21 | Topanga      |             9642 |
|       5 | Harbor       |             9126 |
|      19 | Mission      |             8974 |
|       4 | Hollenbeck   |             8403 |
|      16 | Foothill     |             7154 |
+---------+--------------+------------------+
```

2. **Let's explore crime heavy areas further. Which types of crimes are most common overall?**
   - **Approach:** The query can be simplified to focus on counting the number of incidents for each crime type and sorting them by the total number of incidents.
   - **Query:** SELECT cd.Crime_Desc, COUNT(i.Incident_ID) AS Total_Incidents FROM Incidents i JOIN Crime_Details cd ON i.Crime_ID = cd.Crime_ID GROUP BY cd.Crime_Desc ORDER BY Total_Incidents DESC LIMIT 5;
   - **Insights:** The top 5 crimes in 2023 in LA are vehicle theft, battery, burglary, identity theft, and burglary from vehicles.

```
+-----------------------------+-------------------+
| Crime_Desc                  | Total_Incidents   |
+-----------------------------+-------------------+
| VEHICLE - STOLEN            |             24457 |
| BATTERY - SIMPLE ASSAULT    |             18821 |
| BURGLARY                    |             14282 |
| THEFT OF IDENTITY           |             13593 |
| BURGLARY FROM VEHICLE       |             13553 |
+-----------------------------+-------------------+
```

3. What about our crime heavy areas? What crimes are most common in Central, 77tth Street, and Pacific?

   - **Approach:** The query can be broken up into 3 tasks, 1.find the top 3 areas with the most incidents (we did this in a previous question, so it can be included as a subquery), 2.Count the number of incidents per crime type in each area, 3.Sort so that the the most frequent crimes appear.
   - **Query:** SELECT l.Area_Name, cd.Crime_Desc, COUNT(i.Incident_ID) AS Total_Incidents FROM Locations l JOIN Incidents i ON l.Area_ID = i.Area_ID JOIN Crime_Details cd ON i.Crime_ID = cd.Crime_ID JOIN (SELECT i.Area_ID FROM Incidents i JOIN Locations l ON i.Area_ID = l.Area_ID GROUP BY i.Area_ID ORDER BY COUNT(i.Incident_ID) DESC LIMIT 3) AS Top_Areas ON l.Area_ID = Top_Areas.Area_ID GROUP BYl.Area_Name, cd.Crime_Desc ORDER BY Total_Incidents DESC LIMIT 10;
   - **Insights:** The results of this query confirm our overall crime types from #2. In Central LA, the top crime is Burglary from Vehicle, battery, and stolen vehicle. On 77th st, we see stolen vehicles, assault with deadly weapon, and battery. In Pacific, we see stolen vehicles, petty theft, and burglary.

```
         LIMIT 10;
+-------------+------------------------------------------------+------------------+
| Area_Name   | Crime_Desc                                     | Total_Incidents  |
+-------------+------------------------------------------------+------------------+
| Central     | BURGLARY FROM VEHICLE                          |             2448 |
| 77th Street | VEHICLE - STOLEN                               |             2053 |
| Central     | BATTERY - SIMPLE ASSAULT                       |             1827 |
| Pacific     | VEHICLE - STOLEN                               |             1439 |
| 77th Street | ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT |             1260 |
| Central     | VEHICLE - STOLEN                               |             1247 |
| 77th Street | BATTERY - SIMPLE ASSAULT                       |             1234 |
| Pacific     | THEFT PLAIN - PETTY ($950 & UNDER)             |             1200 |
| Pacific     | BURGLARY                                       |             1162 |
| Central     | ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT |             1066 |
+-------------+------------------------------------------------+------------------+
10 rows in set (1.69 sec)
```
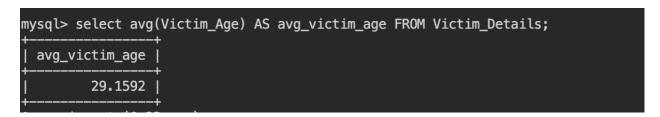
4. What are the top 5 crime types with the highest number of incidents in the area with the most reported incidents?

- ○ **Approach:** First, we need to figure out which area has the most incidents.This is achieved through a subquery. The subquery looks at all incidents, groups them by Area_ID, and counts how many incidents occurred in each area. It then sorts the areas by the total number of incidents in descending order.
- ○ **Query:** SELECT cd.Crime_Desc, COUNT(i.Incident_ID) AS Total_Incidents, l.Area_Name FROM Incidents i JOIN Crime_Details cd ON i.Crime_ID = cd.Crime_ID JOIN Locations l ON i.Area_ID = l.Area_ID WHERE i.Area_ID = (SELECT i.Area_ID FROM Incidents i JOIN Locations l ON i.Area_ID = l.Area_ID GROUP BY i.Area_ID ORDER BY COUNT(i.Incident_ID) DESC LIMIT 1) GROUP BY cd.Crime_Desc, l.Area_Name ORDER BY Total_Incidents DESC LIMIT 5;
- ○ **Insights:** The top 5 crimes in Central LA are burglary from Vehicle, Battery, Vehicle Theft. Assault with Deadly Weapon, and Vandalism.

```
+----------------------------------------------------+-----------------+-----------+
| Crime_Desc                                         | Total_Incidents | Area_Name |
+----------------------------------------------------+-----------------+-----------+
| BURGLARY FROM VEHICLE                              |            2448 | Central   |
| BATTERY - SIMPLE ASSAULT                           |            1827 | Central   |
| VEHICLE - STOLEN                                   |            1247 | Central   |
| ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT     |            1066 | Central   |
| VANDALISM - FELONY ($400 & OVER, ALL CHURCH VANDALISMS) | 1035       | Central   |
+----------------------------------------------------+-----------------+-----------+
```

5. What is the average age of Victims? Note: Not all Incidents have details regarding victims.

- ○ **Approach:** The query is simple here. We can use the Victim_Details table and the AVG aggregate function to get the overall average age.
- ○ **Query:** SELECT AVG(Victim_Age) AS avg_victim_age FROM Victim_Details;
- ○ **Insights:** The average victim age is 29 years old.

```
mysql> select avg(Victim_Age) AS avg_victim_age FROM Victim_Details;
+----------------+
| avg_victim_age |
+----------------+
|        29.1592 |
+----------------+
```
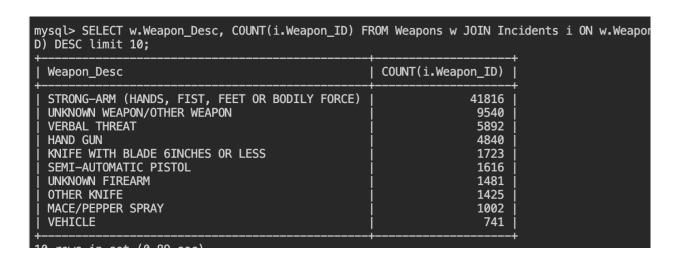
6. What is the average age of victims for each type of crime?

- ○ **Approach:** We need to access information from the Crime_Details table, Victim_Details table, and Incidents. This will require 2 joins, the aggregate function AVG and a Group By.
- ○ **Query:** SELECT cd.Crime_Desc, AVG(vd.Victim_Age) AS Average_Victim_Age FROM Incidents i JOIN Crime_Details cd ON i.Crime_ID = cd.Crime_ID JOIN Victim_Details vd ON i.Incident_ID = vd.Incident_ID GROUP BY cd.Crime_Desc ORDER BY Average_Victim_Age DESC;
- ○ **Insights:** Victim ages range for many crimes, but it is significantly higher for Grand Theft, attempted theft from vehicle, and threatening phone calls.

```
+----------------------------------------------------------+--------------------+
| Crime_Desc                                               | Average_Victim_Age |
+----------------------------------------------------------+--------------------+
| TILL TAP - GRAND THEFT ($950.01 & OVER)                  |            67.0000 |
| THREATENING PHONE CALLS/LETTERS                          |            65.0000 |
| THEFT FROM MOTOR VEHICLE - ATTEMPT                       |            52.5000 |
| RECKLESS DRIVING                                         |            52.0000 |
| DEFRAUDING INNKEEPER/THEFT OF SERVICES, $950 & UNDER     |            48.5000 |
| BOMB SCARE                                               |            43.3333 |
| CRM AGNST CHLD (13 OR UNDER) (14-15 & SUSP 10 YRS OLDER) |            43.2500 |
| DISTURBING THE PEACE                                     |            43.0000 |
| ASSAULT WITH DEADLY WEAPON ON POLICE OFFICER             |            42.0000 |
| ILLEGAL DUMPING                                          |            42.0000 |
| BATTERY POLICE (SIMPLE)                                  |            41.8182 |
| EMBEZZLEMENT, GRAND THEFT ($950.01 & OVER)               |            41.1053 |
| SHOPLIFTING - ATTEMPT                                    |            39.0000 |
| STALKING                                                 |            38.6667 |
| BURGLARY FROM VEHICLE, ATTEMPTED                         |            38.5000 |
| VIOLATION OF TEMPORARY RESTRAINING ORDER                 |            37.5000 |
| CHILD ANNOYING (17YRS & UNDER)                           |            35.3529 |
| SHOTS FIRED AT INHABITED DWELLING                        |            35.2667 |
| CRUELTY TO ANIMALS                                       |            35.0000 |
| PANDERING                                                |            34.6667 |
| THEFT, PERSON                                            |            34.1333 |
| SODOMY/SEXUAL CONTACT B/W PENIS OF ONE PERS TO ANUS OTH  |            34.0000 |
| KIDNAPPING                                               |            33.6250 |
| PROWLER                                                  |            33.5000 |
| ROBBERY                                                  |            33.1624 |
| PICKPOCKET                                               |            32.9500 |
| THROWING OBJECT AT MOVING VEHICLE                        |            32.6000 |
| DISCHARGE FIREARMS/SHOTS FIRED                           |            32.3333 |
| TRESPASSING                                              |            32.2593 |
| CRIMINAL HOMICIDE                                        |            31.7143 |
| ARSON                                                    |            31.4667 |
| SHOPLIFTING - PETTY THEFT ($950 & UNDER)                 |            31.0847 |
| BUNCO, PETTY THEFT                                       |            31.0000 |
| THEFT PLAIN - PETTY ($950 & UNDER)                       |            30.8930 |
| RAPE, FORCIBLE                                           |            30.7407 |
| SEXUAL PENETRATION W/FOREIGN OBJECT                      |            30.6250 |
| ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT           |            30.5719 |
```

7. Identify incidents involving weapons. Which weapon types are most frequently used?

- ○ **Approach:** In order to find the most frequently used weapons in incidents from this year, we need to perform one JOIN between Incidents and Weapons. This will allow us to count the number of each weapon used.
- ○ **Query:** SELECT w.Weapon_Desc, COUNT(i.Weapon_ID) FROM Weapons w JOIN Incidents i ON w.Weapon_ID=i.Weapon_ID GROUP BY w.Weapon_Desc ORDER BY COUNT(i.Weapon_ID) DESC limit 10;
- ○ **Insights:** Bodily force is the most frequently used in these incidents.

```
mysql> SELECT w.Weapon_Desc, COUNT(i.Weapon_ID) FROM Weapons w JOIN Incidents i ON w.Weapon
D) DESC limit 10;
+------------------------------------------+-------------------+
| Weapon_Desc                              | COUNT(i.Weapon_ID) |
+------------------------------------------+-------------------+
| STRONG-ARM (HANDS, FIST, FEET OR BODILY FORCE) |          41816 |
| UNKNOWN WEAPON/OTHER WEAPON              |           9540 |
| VERBAL THREAT                           |           5892 |
| HAND GUN                                |           4840 |
| KNIFE WITH BLADE 6INCHES OR LESS        |           1723 |
| SEMI-AUTOMATIC PISTOL                    |           1616 |
| UNKNOWN FIREARM                         |           1481 |
| OTHER KNIFE                             |           1425 |
| MACE/PEPPER SPRAY                       |           1002 |
| VEHICLE                                 |            741 |
+------------------------------------------+-------------------+
```

8. What crimes are associated with these frequently used weapons?

- ○ **Approach:** This query builds on the one from #6, except here we will need to perform 2 joins in order to link the Weapons table with Incidents and Crime_Details. We should also include another field within the select statement so that our end result provides all necessary information.
- ○ **Query:** SELECT w.Weapon_Desc, COUNT(i.Weapon_ID), cd.Crime_Desc FROM Weapons w JOIN Incidents i ON w.Weapon_ID=i.Weapon_ID JOIN Crime_Details cd ON i.crime_ID=cd.Crime_ID GROUP BY w.Weapon_Desc, cd.Crime_Desc ORDER BY COUNT(i.Weapon_ID) DESC limit 10;
- ○ **Insights:** It seems as most battery crimes are carried out without material weapons. Handguns are associated with robberies.

```
| Weapon_Desc                               | COUNT(i.Weapon_ID) | Crime_Desc                                    |
+-------------------------------------------+--------------------+-----------------------------------------------+
| STRONG-ARM (HANDS, FIST, FEET OR BODILY FORCE) |              17097 | BATTERY - SIMPLE ASSAULT                      |
| STRONG-ARM (HANDS, FIST, FEET OR BODILY FORCE) |              10255 | INTIMATE PARTNER - SIMPLE ASSAULT             |
| VERBAL THREAT                             |               4343 | CRIMINAL THREATS - NO WEAPON DISPLAYED        |
| STRONG-ARM (HANDS, FIST, FEET OR BODILY FORCE) |               3267 | ROBBERY                                       |
| UNKNOWN WEAPON/OTHER WEAPON               |               1981 | BURGLARY                                      |
| HAND GUN                                  |               1886 | ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT |
| STRONG-ARM (HANDS, FIST, FEET OR BODILY FORCE) |               1770 | ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT |
| STRONG-ARM (HANDS, FIST, FEET OR BODILY FORCE) |               1747 | INTIMATE PARTNER - AGGRAVATED ASSAULT         |
| UNKNOWN WEAPON/OTHER WEAPON               |               1429 | ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT |
| UNKNOWN WEAPON/OTHER WEAPON               |               1409 | BATTERY - SIMPLE ASSAULT                      |
+-------------------------------------------+--------------------+-----------------------------------------------+
10 rows in set (0.95 sec)
```

9. Which premises carry the most amount of incidents?

- **Approach:** This query requires one join between Incidents and Premises. We also need to count the incidents and order by this value so that we only see the premises belonging to the largest number of incidents.
- **Query:** SELECT p.Premis_Desc, COUNT(i.Incident_ID) AS Total_Incidents FROM Incidents i JOIN Premises p ON i.Premis_ID = p.Premis_ID GROUP BY p.Premis_Desc ORDER BY Total_Incidents DESC LIMIT 10;
- **Insights:** Most Incidents occur on the Street, in Single Family Dwellings, and Multi-Unit Dwellings. If we look into the types of crimes committed in these premises, we can inform the public to take extra caution in these settings.

```
mysql> SELECT p.Premis_Desc, COUNT(i.Incident_ID) AS Total_Incidents FROM Inciden
RDER BY Total_Incidents DESC LIMIT 10;
+-------------------------------------------+-----------------+
| Premis_Desc                               | Total_Incidents |
+-------------------------------------------+-----------------+
| STREET                                    |           59496 |
| SINGLE FAMILY DWELLING                    |           38843 |
| MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC) |           28708 |
| PARKING LOT                               |           14476 |
| OTHER BUSINESS                            |           12010 |
| SIDEWALK                                  |            9126 |
| VEHICLE, PASSENGER/TRUCK                  |            6045 |
| DEPARTMENT STORE                          |            5285 |
| GARAGE/CARPORT                            |            3604 |
| RESTAURANT/FAST FOOD                      |            2988 |
+-------------------------------------------+-----------------+
10 rows in set (1.79 sec)
```

10. What are the top 3 Premises where crimes are committed and what kinds of crimes should police and the public be aware of being committed here?

- ○ **Approach:** This question can be answered through a subquery that selects the top 3 premises where crimes are committed and a join between Incidents, Crime Details, and Premises to get the Premis_Desc, Crime_Desc in relation to a count of incidents.
- ○ **Query:** SELECT p.Premis_Desc, cd.Crime_Desc, COUNT(i.Incident_ID) AS Total_Incidents FROM Incidents i JOIN Crime_Details cd ON i.Crime_ID = cd.Crime_ID JOIN Premises p ON i.Premis_ID = p.Premis_ID JOIN (SELECT i.Premis_ID FROM Incidents i JOIN Premises p ON i.Premis_ID = p.Premis_ID GROUP BY i.Premis_ID ORDER BY COUNT(i.Incident_ID) DESC LIMIT 3) AS Top_Premises ON i.Premis_ID = Top_Premises.Premis_ID GROUP BY p.Premis_Desc, cd.Crime_Desc ORDER BY Total_Incidents DESC;
- ○ **Insights:** On the street, civilians should be cautious of their vehicle being stolen and belongings being stolen out of their vehicle, whereas they are susceptible to identity theft in their homes. The police can use this information for a public advocacy campaign that educates civilians on how to avoid becoming a victim of one of these crimes. Additionally, the LAPD can use this information to refine their tools and investigation tactics in regard to these crimes.

Premis_Desc	Crime_Desc	Total_Incidents
STREET	VEHICLE - STOLEN	19739
SINGLE FAMILY DWELLING	THEFT OF IDENTITY	6985
STREET	THEFT FROM MOTOR VEHICLE - PETTY ($950 & UNDER)	5611
STREET	BURGLARY FROM VEHICLE	5485
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	THEFT OF IDENTITY	5252
SINGLE FAMILY DWELLING	BURGLARY	5216
STREET	THEFT FROM MOTOR VEHICLE - GRAND ($950.01 AND OVER)	4593
STREET	ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT	4476
SINGLE FAMILY DWELLING	INTIMATE PARTNER - SIMPLE ASSAULT	3880
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	INTIMATE PARTNER - SIMPLE ASSAULT	3658
STREET	BATTERY - SIMPLE ASSAULT	3139
SINGLE FAMILY DWELLING	BATTERY - SIMPLE ASSAULT	3019
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	BATTERY - SIMPLE ASSAULT	2798
STREET	ROBBERY	2193
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	BURGLARY	1998
STREET	VANDALISM - FELONY ($400 & OVER, ALL CHURCH VANDALISMS)	1988
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	THEFT PLAIN - PETTY ($950 & UNDER)	1854
SINGLE FAMILY DWELLING	THEFT PLAIN - PETTY ($950 & UNDER)	1520
STREET	INTIMATE PARTNER - SIMPLE ASSAULT	1461
SINGLE FAMILY DWELLING	VIOLATION OF RESTRAINING ORDER	1447
SINGLE FAMILY DWELLING	ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT	1344
SINGLE FAMILY DWELLING	CRIMINAL THREATS - NO WEAPON DISPLAYED	1317
SINGLE FAMILY DWELLING	VANDALISM - FELONY ($400 & OVER, ALL CHURCH VANDALISMS)	1179
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	ASSAULT WITH DEADLY WEAPON, AGGRAVATED ASSAULT	1157
SINGLE FAMILY DWELLING	TRESPASSING	1117
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	VANDALISM - FELONY ($400 & OVER, ALL CHURCH VANDALISMS)	1071
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	INTIMATE PARTNER - AGGRAVATED ASSAULT	1045
SINGLE FAMILY DWELLING	THEFT-GRAND ($950.01 & OVER)EXCPT,GUNS,FOWL,LIVESTK,PROD	1029
STREET	VEHICLE - ATTEMPT STOLEN	1028
SINGLE FAMILY DWELLING	INTIMATE PARTNER - AGGRAVATED ASSAULT	1008
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	THEFT-GRAND ($950.01 & OVER)EXCPT,GUNS,FOWL,LIVESTK,PROD	965
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	CRIMINAL THREATS - NO WEAPON DISPLAYED	953
STREET	BRANDISH WEAPON	927
SINGLE FAMILY DWELLING	BUNCO, GRAND THEFT	789
SINGLE FAMILY DWELLING	VIOLATION OF COURT ORDER	741
SINGLE FAMILY DWELLING	LETTERS, LEWD - TELEPHONE CALLS, LEWD	736
STREET	THEFT-GRAND ($950.01 & OVER)EXCPT,GUNS,FOWL,LIVESTK,PROD	708
SINGLE FAMILY DWELLING	VANDALISM - MISDEAMEANOR ($399 OR UNDER)	706
SINGLE FAMILY DWELLING	THEFT FROM MOTOR VEHICLE - GRAND ($950.01 AND OVER)	690
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	VANDALISM - MISDEAMEANOR ($399 OR UNDER)	682
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	VIOLATION OF RESTRAINING ORDER	644
STREET	CRIMINAL THREATS - NO WEAPON DISPLAYED	625
MULTI-UNIT DWELLING (APARTMENT, DUPLEX, ETC)	BRANDISH WEAPON	574