Crime LA Project

Data Analytics using SQL

Problem Statement
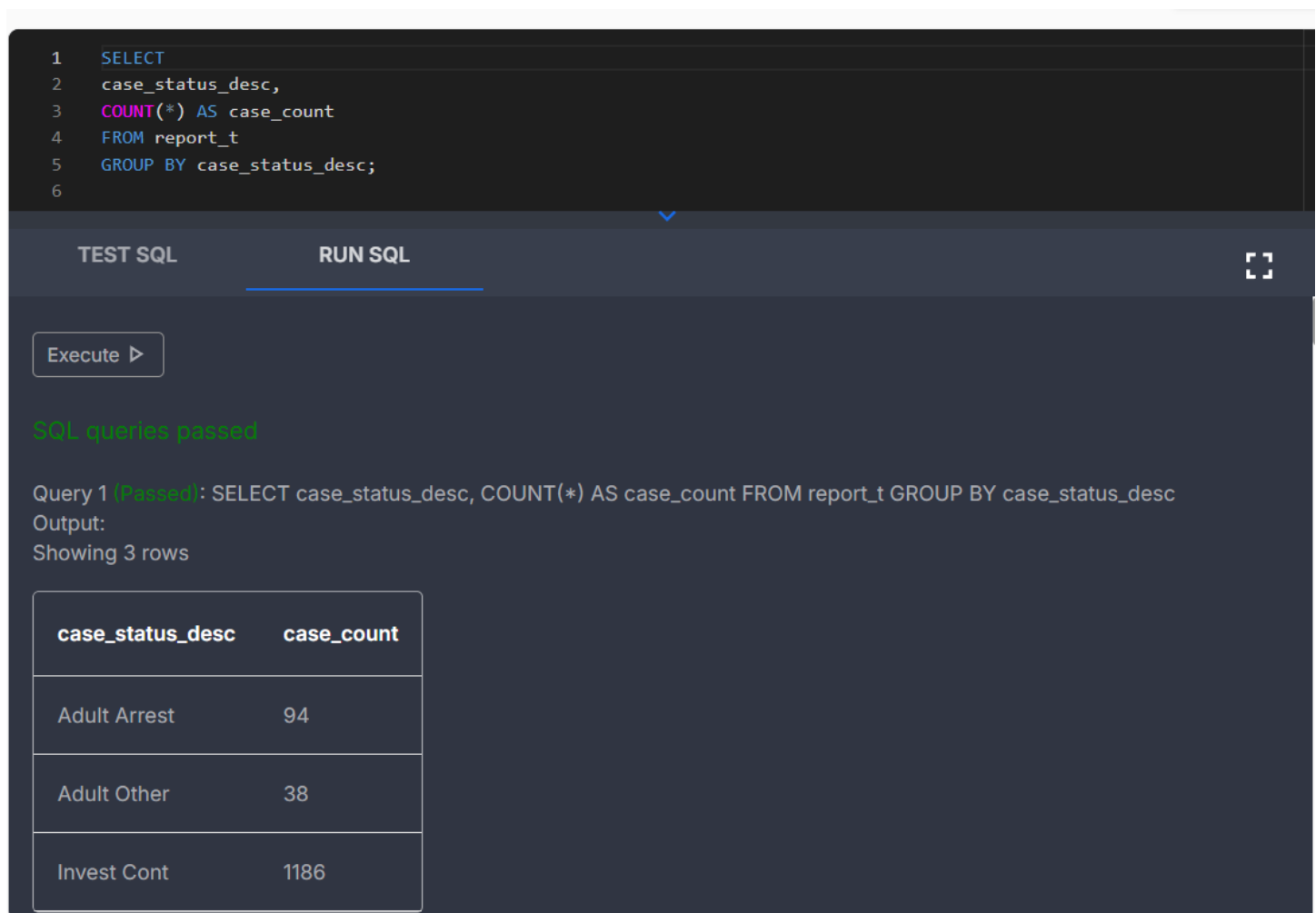
Business Context

People throughout Los Angeles are concerned about recent reports of crimes in numerous locations. The mayor of Los Angeles has established a new Criminal Investigation Division to study how and why crime is on the rise and the elements that contribute to it so that officials may take the necessary steps to keep the city's residents safe.

Objective

As a member of the Analytics Division, you are aware that numerous questions must be answered utilizing CID data. Import the dump file that contains various tables that are present in the database. Using the data, react to the questions and write a detailed report for the authorities to utilize in taking action against crimes in Los Angeles.

Question 1: **What is the total number of crimes for each crime status?**

Solution Query:

```
SELECT
    case_status_desc,
    COUNT(*) AS case_count
FROM report_t
GROUPBY case_status_desc;
```

Output: .

```
1   SELECT
2   case_status_desc,
3   COUNT(*) AS case_count
4   FROM report_t
5   GROUP BY case_status_desc;
6
```

TEST SQL	RUN SQL

Execute ▷

SQL queries passed

Query 1 (Passed): SELECT case_status_desc, COUNT(*) AS case_count FROM report_t GROUP BY case_status_desc
Output:
Showing 3 rows

case_status_desc	case_count
Adult Arrest	94
Adult Other	38
Invest Cont	1186

Observations and Insights:

OBSERVATIONS:

1. **High number of 'Invest Cont' (Investigation Continued) cases:**
- The majority of cases (1,186) are labelled as 'Invest Cont', indicating that these cases are still under active investigation and have not yet been resolved or closed.
2. **Moderate number of 'Adult Arrest' Cases:**
- A total number of 94 cases have resulted in an adult arrest. This suggests that a relatively small portion of cases have led to the apprehension of suspects.
3. **Low number of 'Adult Other' Cases:**
- Only 38 cases fall under the 'Adult Other' category which likely represent the cases involving adults but not resulting in arrest or further investigation. These could be minor offenses or incidents resolved without formal legal proceedings.

INSIGHTS:

1. **Ongoing investigations:**
- The overwhelming majority of cases (1,186) being under 'Investigation Continued' indicates that the law enforcement is actively working on a large number of cases. This suggests that either a significant number of recent cases are complex or that there may be delays in the investigative process due to limited resources or high case volumes.
2. **Need for more investigative resources:**
- Given the high number of ongoing investigations compared to the relatively low number of arrests, it may be inferred that additional investigative resources (Example more detectives, better forensic support) could help expedite the resolution of these cases. This insight points to a potential bottleneck in closing cases.
3. **Efficiency of case handling:**
- The disparity between 'Investigation Continued' (1,186 cases) and 'Adult Arrest' (94 cases) raises questions about the efficiency of the current investigative processes. There may be challenges in gathering sufficient evidence to lead arrests or these cases might involve complexities that prevent quick resolution.
4. **Potential for unsolved or cold cases:**
- If a large number of cases remain in 'Investigation Continued' without resolution over a long period, there is a risk that some may turn into cold cases. This could indicate a need for enhanced case management systems to ensure timely closure or escalation of cases that require additional support.
5. **Impact on public perception of safety:**
- The relatively small number of arrests compared to ongoing investigations could affect the public perception of law enforcement effectiveness. The community might feel less secure if they perceive that many cases are unresolved, particularly if these cases involve serious crimes.

6. **Focus on adult crimes:**
- The data shows that 94 cases led to adult arrests, suggesting a reasonable enforcement focuses on crimes committed by the adults. However, with only 38 cases under 'Adult Other' it seems there is less activity in cases involving adults where arrests are not made, potentially implying that non-arrest resolutions (such as fines or warnings) are infrequent.

7. **Potential for the community support:**
- The large number of cases still under investigation could signal an opportunity to engage the community in crime-solving efforts. Public co-operation and tips might help to move some of these cases from 'Investigation Continued' to the resolution, particularly if these cases are stalling due to lack of leads.

8. **Case prioritization:**
- Law enforcement may need to prioritize certain types of cases within the large 'Investigation Continued' category particularly those that have been ongoing for a significant amount of time. This would help prevent the accumulation of resolved cases and ensure that high-priority or time sensitive investigations receive the necessary attention.

9. **Opportunities for policy improvements:**
- The distribution of case statuses suggests the potential areas for policy improvements such as creating more efficient pathways for case resolution or implementing new investigative techniques. Additionally, policies that support rapid processing of certain case types (like minor offenses) could help reduce the 'Investigation Continued' backlog.

In summary, the data shows a significant number of ongoing investigations and comparatively fewer arrests. This presents opportunities for resource reallocation, process optimization and community engagement to resolve more cases and enhance public trust in law enforcement efforts.

Question 2: Which was the most frequent crime committed each week?

Solution Query:

```
SELECT

        week_number,

        crime_type,

        Crimes_reported

FROM (SELECT

            week_number,

            crime_type,

            COUNT(*) AS crimes_reported,

            RANK() OVER(PARTITION BY week_number ORDER BY COUNT(*) DESC)

        AS high_crime_reported

        FROM report_t

        GROUPBY week_number, crime_type

        ) AS wk_crime

    WHERE wk_crime.high_crime_reported =  1;
```

Output:

```
6
7    SELECT
8      week_number,
9      crime_type,
10     crimes_reported
11   FROM (SELECT
12     week_number,
13     crime_type,
14     COUNT(*) AS crimes_reported,
15     RANK() OVER(PARTITION BY week_number ORDER BY COUNT(*) DESC)
16     AS high_crime_reported
17     FROM report_t
18     GROUP BY week_number, crime_type) AS wk_crime
19   WHERE wk_crime.high_crime_reported = 1;
20
```

| TEST SQL | RUN SQL |

Query 2 (Passed): SELECT week_number, crime_type, crimes_reported FROM (SELECT week_number, crime_type, COUNT(*) AS crimes_reported, RANK() OVER(PARTITION BY week_number ORDER BY COUNT(*) DESC) AS high_crime_reported FROM report_t GROUP BY week_number, crime_type) AS wk_crime WHERE wk_crime.high_crime_reported = 1
Output:
Showing 4 rows

week_number	crime_type	crimes_reported
1	BURGLARY FROM VEHI...	24
2	BURGLARY FROM VEHI...	40
3	BATTERY - SIMPLE AS...	48
4	BURGLARY FROM VEHI...	59

Observations and Insights:

OBSERVATIONS:

1. **Frequent occurrences of 'Burglary from Vehicles':**
   - In 3 out of 4 weeks presented (weeks 1,2 and 4) 'Burglary from Vehicles' is reported as the most frequent crime. In week 1 there are 24 reported cases, in week 2: 40 cases and in week 4: 59 cases.
   - There is a clear upward trend in number of 'Burglary from Vehicles' incidents, rising from 24 in week 1 to 59 in week 4.

2. **High incidence of 'Battery-Simple Assault' in week 3:**
   - In week 3, 'Battery-Simple Assault' is reported as the most frequent crime with 48 reported cases. This is the only week in this data where assaults overtake 'Burglary from Vehicles' in terms of reported incidents.

3. **Crime fluctuations over the 4 weeks:**
   - The number of crimes fluctuate each week, with week 3 showing a shift in crime type (from burglary to assault). Week 1, 2 and 4 consistently show high number of vehicle burglaries indicating a persistent problem in this type of crime.

4. **Spike in burglary from vehicle in week 4:**

- Week 4 sees the highest number of 'Burglary from Vehicle' reports with 59 cases, which is more than double the amount seen in week 1 (24 cases). This suggests an intensifying pattern of this crime over the week 4 period.

Insights:

1. **Rising trend in Vehicle-Related crime:**

- The data indicates a significant rise in 'Burglary from Vehicle' incident over the week 4 period. This may suggest a developing pattern where criminals are increasingly targeting vehicles, either due to perceived opportunity (example poor vehicle security) or as part of an organized effort. Law enforcement may need to focus additional resources on vehicle crime prevention particularly in areas where these incidents are concentrated.

2. **Potential for targeted crime prevention initiatives:**

- Given the consistent and increasing occurrences of 'Burglary from Vehicle' over the weeks, authorities may need to launch targeted initiatives aimed at preventing vehicle-related crimes. This could involve public awareness campaigns about the security vehicles, increased police patrols in areas where vehicles theft is common or the installation of more surveillance systems (example CCTV) in the parking lots and streets with frequent burglaries.

3. **Shift in crime types during week 3:**

- The spike in 'Battery-Simple Assault' incidents in week 3 indicates a shift in criminal behavior for that period. This could reflect a short-term increase in violent or interpersonal crimes, which may have been driven by local events, social unrest, or other factors. Understanding the cause of this shift can help the law enforcement better prepare for similar surges in assault cases in the future.

4. **Need for adaptive law enforcement strategies:**

- The fluctuations in crime types from week to week highlight the importance of adaptive law enforcement strategies. For example, week 1, 2 and 4 resources may need to be focused on property crimes like burglary, whereas week 3 may require additional focus on preventing violent or interpersonal crimes like assault. A dynamic approach to resource allocation based on emerging crime trends would ensure law enforcement can respond effectively to the current needs of the community.

5. **Investigating the spike in burglary from vehicle:**

- The significant increase in 'Burglary from Vehicle' reports from 24 in week 1 to 59 in week 4 should be investigated further. There could be a range of factors contributing to this surge such as organized criminal groups, seasonal factors (example holiday shopping, leading to more valuable being left in cars) or even changes in law enforcement practices that may have

unintentionally provided opportunities for criminals. Identifying and addressing these factors will be the key to curbing the rising trend.

6. **Preventing future assault spikes:**
   - The spike in 'Battery-Simple Assault' in week 3 may suggest social or situational factors that contribute to temporary increases in interpersonal violence. Law enforcement agencies may consider focusing on community outreach programs, conflict resolution workshops or increasing police visibility in areas prone to such incidents to prevent future spikes in assault cases.

7. **Impact on public perception on safety:**
   - The high and increasing number of burglaries could lead to a deterioration in public perception of safety particularly regarding vehicle-related crime. As this is a crime that affects property rather than personal safety, it may lead to frustration and distrust in law enforcement ability to protect residents' belongings. Authorities should focus on clear communication with the public, outlining both the steps being taken to prevent further crimes and ways individuals can protect their vehicles.

8. **Focuses on high-risk areas:**
   - If these crime trends are concentrated in specific areas, law enforcement could use hotspot policing tactics to focus on regions where 'Burglary from Vehicle' incidents are on the rise. Data -driven policing strategies such as increasing patrols or using predictive policing models could be used to proactively prevent further burglaries in the high-risk neighborhoods.

9. **Cross-agency collaboration:**
   - Given the shift from property crime to interpersonal crime in week 3, this data suggests a need for cross-agency collaboration between departments focusing on the property crime (example, theft and burglary) and those handling violent crime. (Example assault) sharing intelligence and co ordinating strategies may help in both solving the ongoing cases and preventing future crimes.

10. **Developing crime response plans:**
    - Law enforcement should consider developing specific crime response plans that address both property crimes (like burglary from vehicle) and interpersonal crimes (like assault). These plans could include rapid deployment of resources in response to emerging trends, as seen in week 3 when 'Battery-Simple Assault' rose sharply.

In summary, the data reveals a concerning upward trend in vehicle-related burglaries and a temporary shift to interpersonal violence in week 3.

Question 3: Does the existence of CCTV cameras deter crimes from happening?

Solution Query:

```
SELECT
        area_name,
        cctv_count,
        COUNT(*) AS cases_reported
FROM report_t as r
JOIN location_t as l
        ON l.area_code = r.area_code
GROUPBY area_name
ORDERBY cctv_count DESC;
```

Output:

```
21    SELECT
22    area_name,
23    cctv_count,
24    COUNT(*) AS cases_reported
25    FROM report_t AS r
26    JOIN location_t AS l
27    ON l.area_code = r.area_code
28    GROUP BY area_name
29    ORDER BY cctv_count DESC;
30
```

TEST SQL   RUN SQL

Query 3 (Passed): SELECT area_name, cctv_count, COUNT(*) AS cases_reported FROM report_t AS r JOIN location_t AS l ON l.area_code = r.area_code GROUP BY area_name ORDER BY cctv_count DESC
Output:
Showing first 10 rows out of 11 rows

area_name	cctv_count	cases_reported
Hollywood	280	122
Newton	275	74
West Valley	268	156
Northeast	255	45
Van Nuys	250	158
West LA	244	156
Harbor	180	71

Observations and Insights:

OBSERVATIONS:

1. **Variation in CCTV coverage across areas:**
   - There is a significant variation in the number of CCTV cameras across different areas.

Hollywood has the highest number of CCTV cameras (280) while Rampart has the lowest among these areas (165).

2. **Crime distribution and CCTV presence:**
   - Despite Hollywood having the highest number of CCTV camera (280) it reports 122 cases, which is comparatively lower than some areas with fewer cameras. For instance, Rampart with only 165 CCTV cameras, reports the highest number of cases (233).
   - Hollenbeck with 170 CCTV reports 189 cases, which is higher number of cases relative to its CCTV coverage.

3. **High number of reported cases in certain areas:**
   - Rampart reports the highest number of cases (233) despite having a relative low number of CCTV cameras. Similarly, Hollenbeck reports a high number of cases (189) with only 170 CCTV cameras.
   - Van Nuys, West Valley and West LA all reports 156 or more cases despite moderate numbers of CCTV cameras (250, 268 and 244 respectively).

4. **Areas of lower-case numbers:**
   - Northeast and Southwest report lower case numbers (45 and 56 respectively) despite having a moderate number of CCTV cameras (255 and 168 respectively).
   - Newton with 275 CCTV cameras reports only 74 cases, which is relatively low as compared to its camera count.

INSIGHTS:

1. **Ineffectiveness of CCTV in high crime areas:**
   - The data suggests a high number of CCTV cameras does not necessarily correlate with fewer crime reports. For example, Rampart has 165 CCTV cameras but reports the highest number of cases (233). This might indicate that CCTV alone is not an effective deterrent in some high crime areas. Law enforcement should consider combining CCTV surveillance with other crime prevention methods such as increased police presence or community engagement.

2. **Potential underreporting or inefficient usage of CCTV:**
   - Areas like Hollywood and Newton have a large number of CCTV cameras but relatively low reported cases (122 and 74 respectively). This could imply that either crimes in these areas are underreported or the cameras are not effectively monitored or utilized to their full potential in deterring or detecting crime. Further investigation into camera maintenance, monitoring and public awareness of crime reporting might be necessary.

3. **High crime in areas with moderate CCTV coverage:**
   - Hollenbeck, Van Nuys, with moderate number of CCTV cameras (170 and 250 respectively) reports high crime numbers (189 and 158 respectively). This suggests that these areas may require additional law enforcement resources beyond CCTV. Community outreach, crime prevention initiatives or even better lighting in key areas could help reduce crime rates.

4. **Rampart requires immediate attention:**
   - Rampart, with the highest number of cases (233) and the lowest number of CCTV cameras (165) appears to be a high-risk area. This could be due to several factors, such as social issues, lack of

police presence or environmental factors that facilitate crime. Immediate intervention in this area is necessary, possibly with increased policing, improved urban planning or expansion of CCTV coverage.

5. **The role of other factors in the crime:**
- The disparity between CCTV coverage and crime rates across the areas suggests that other factors such as socio-economic conditions, population density or local law enforcement practices may be playing a role in crime rate. For instance, areas with higher poverty levels may experience higher crime regardless of the number of cameras. A more holistic approach to crime prevention, involving social programs and community support might be needed in such areas.

6. **Balanced approach to crime prevention:**
- In areas like West Valley, Van Nuys and West LA where there are moderate number of   CCTV cameras but a relatively high number of cases, a balanced approach that combines technology (CCTV) with active policing may be more effective. These areas might benefit from targeted crime prevention efforts during peak crime hours or in specific neighborhoods.

7. **Potential over-reliance on CCTV:**
- Some areas such as Newton shows a large number of CCTV cameras (275) but relatively few cases (74). This could suggest an over-reliance of CCTV camera as the primary method of crime prevention. Law enforcement agencies should evaluate whether the deployment of additional personnel or proactive policing strategies could help improve the safety rather than solely relying on the passive surveillance.

8. **Crime concentration in certain areas:**
- The high number of reported cases in areas like Rampart, Hollenbeck and Van Nuys indicate that certain neighborhoods are more prone to criminal activity. Focusing law enforcement efforts and crime prevention strategies in these high crime areas might help reduce the overall crime rate. Additionally, identifying specific crime types prevalent in these regions could lead to more focused interventions.

9. **Success in certain areas:**
- The relative low number of reported cases in areas like Northeast and Southwest, despite moderate CCTV coverage suggests that crime prevention efforts may be more effective in these areas. These regions could serve as models for other higher crime areas particularly if they have successful community policing or public engagement programs that help deter the criminal activity.

10. **Optimizing CCTV placement:**
- The data suggests that there is room to optimize the CCTV placement. For example, while some areas like Hollywood have high CCTV numbers with moderate crime, areas like Rampart have high crime with fewer cameras. Authorities may need to re-evaluate the strategic placement of cameras, ensuring they cover the high-risk areas more effectively.

In conclusion, while CCTV cameras are an important tool in crime prevention, the data suggests that they are not a standalone solution.

Question 4: How much footage has been recovered from the CCTV at the crime scene?

Solution Query:

```
SELECT

    SUM(l.CCTV_COUNT) AS total_cctv_installed,

    SUM() AS

    Total_cctv_footage_available

FROM report_t as r

JOIN location_t as l

    ON l.AREA_CODE = r.AREA_CODE
```

Output:

```
31  SELECT
32      SUM(l.CCTV_COUNT) AS total_cctv_installed
33  FROM
34      report_t AS r
35  JOIN
36      location_t AS l
37  ON
38      l.AREA_CODE = r.AREA_CODE;
39
```

TEST SQL   RUN SQL

Query 3 (Passed): SELECT area_name, cctv_count, COUNT(*) AS cases_reported FROM report_t AS r JOIN location_t AS l ON l.area_code = r.area_code GROUP BY area_name ORDER BY cctv_count DESC
Output:
Showing first 10 rows out of 11 rows

area_name	cctv_count	cases_reported
Hollywood	280	122
Newton	275	74
West Valley	268	156
Northeast	255	45

Observations and Insights:

1. **Large scale CCTV deployment:**
- The total number of CCTV cameras installed across the analyzed areas is 286,820 indicating a significant investment in surveillance infrastructure. This reflects a large-scale effort by the authorities to monitor and deter criminal activities in public spaces.

2. **Wide geographic coverage:**
- This substantial number suggests the CCTV coverage extends across multiple regions, potentially encompassing high crime areas, transportation hubs, commercial districts and residential neighborhoods. The high installation figure implies a broad geographic footprint for the surveillance network.

3. **Focus on crime prevention:**
- The presence of such large number of cameras indicates a strategic focus on crime prevention through visual deterrence. Authorities appear to be using CCTV to both discourage criminal behavior and collect evidence that could assist in solving crimes.

4. **Potential overlap or redundancy in the camera placement:**
- While the number of cameras is high there may be some areas where cameras overlap or are redundant especially in densely populated regions. This could imply inefficient use of resources if certain locations have more cameras than needed while others may be underserved.

INSIGHTS:

1. **Effective surveillance and crime deterrence:**
- The large number of CCTV cameras likely plays a significant role in deterring crimes. Studies have shown that visible surveillance system can reduce crime rates in certain areas, particularly in public spaces where criminals may be discouraged from acting due to the increased risk of detection. With 286,820 cameras, it is likely that many areas experience lower crime rates due to this preventive measures.

2. **Resource allocation and maintenance challenges:**
- Managing and maintaining such a vast number of CCTV cameras can present logistical challenges. Regular maintenance, monitoring and ensuring that cameras are operational are critical to the effectiveness of the surveillance system. Authorities will need to to invest in personnel and technology to monitor camera feeds and ensure timely maintenance to avoid blind spots caused by malfunctioning equipment.

3. **Potential gaps in crime coverage:**
- While the overall number of cameras is high, it is important to consider whether they are strategically placed in high-crime areas. If the cameras are disproportionally installed in low crime areas or are concentrated in certain zones, there could be gaps in the coverage where crimes are more likely to occur. Conducting a thorough analysis of crime hotspots and adjusting camera placement accordingly could help enhance the effectiveness of the system.

4. **Data and privacy concerns:**
- A large network of surveillance cameras raises potential concerns about privacy and data

management. Authorities must ensure that the data collected from these cameras is handled responsibly with clear guidelines on data retention, access and use. There may be public concerns about the extent of the surveillance, particularly in residential or sensitive areas. Establishing transparent policies on how camera footage is used can help address these concerns.

5. **Crime solving and evidence collection:**

- CCTV systems are invaluable for solving crimes as footage can provide key evidence in the criminal investigations. With 286,820 cameras law enforcement agencies have a significant advantage in gathering evidence that can lead to arrests and convictions. However, ensuring that the footage is accessible and of sufficient quality to be used in the court is critical to its effectiveness as a crime solving tool.

6. **Cost benefit analysis of surveillance:**

- While the installation of 286,820 cameras represents a significant investment in public safety, it is important to evaluate the cost-effectiveness of the system. Authorities should assess whether the presence of such a vast number of cameras has led to measurable reductions in the crime rates. If certain areas have not seen a corresponding drop in crime, alternative measures such as increased police patrols community engagement or environmental design changes may be more effective.

7. **Public perception of safety:**

- A large number of CCTV network can improve the publics sense of safety, particularly in areas prone to crime. Visible surveillance can reassure citizens that their security is priority for local authorities. However, if crime rates do not decrease in proportion to the number of cameras installed, public trust in the effectiveness of CCTV as a crime prevention tool may diminish.

8. **Technological upgrades and future expansion:**

- As technology advances, the existing CCTV infrastructure may require upgrades to keep pace with modern crime fighting tools, such as facial recognition real-time monitoring and A1 based crime detection. With 286,820 cameras, upgrading such a vast network will be a complex but a necessary process to ensure it remains effective in addressing future challenges.

9. **Reducing specific crimes:**

- Certain types of crimes such as theft, vandalism or violent offenses in public spaces are likely to be significantly reduced with widespread CCTV coverage. High traffic areas, commercial districts and transportation hubs can benefit from the deterrent effect of surveillance. However, CCTV may have limited impact on the types of crime that occur out of view, such as cyber crimes or crimes inside private residences which require different preventive measures.

10. **Strategic partnerships for better coverage:**

- With such a large number of cameras, law enforcement may consider partnerships with private businesses and organization to expand the reach of their surveillance network. Many commercial establishments already have their own CCTV systems and integrating these with public systems could create a more comprehensive crime prevention network without necessarily installing additional cameras.
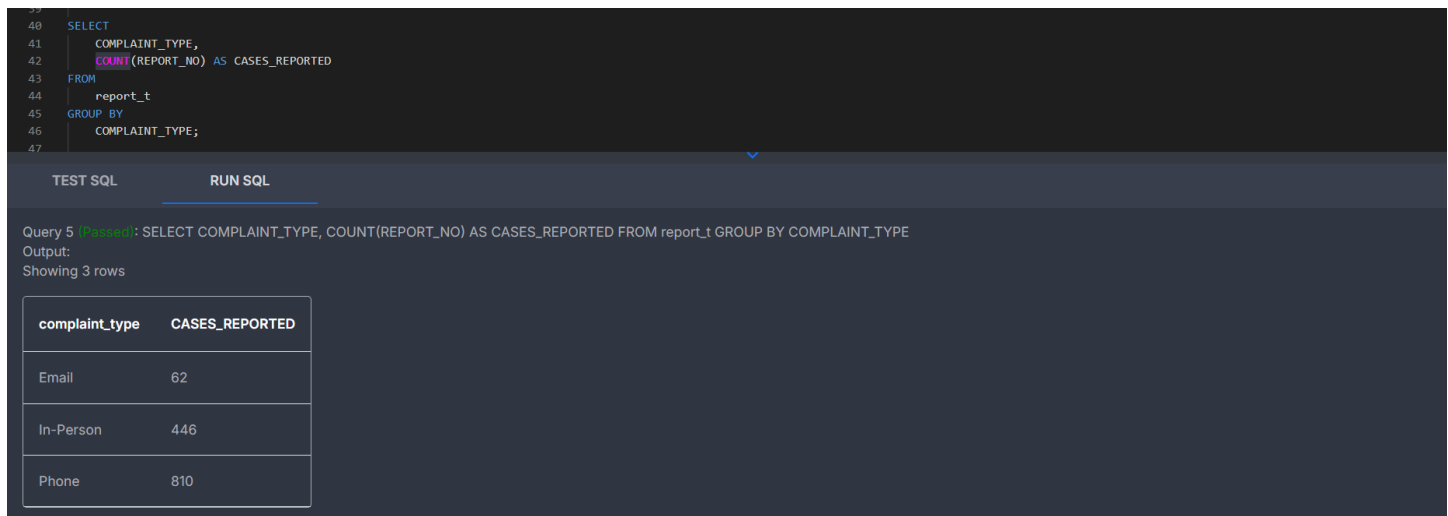
In conclusion, the deployment of 286,820 CCTV cameras reflects a significant investment in public safety and crime prevention.

Question 5: What is the frequency of various complaint types?

```
SELECT

    complaint_type,

    count(REPORT_NO) AS cases_reported

FROM report_t

GROUPBY complaint_type;
```

Output:

```
40   SELECT
41       COMPLAINT_TYPE,
42       COUNT(REPORT_NO) AS CASES_REPORTED
43   FROM
44       report_t
45   GROUP BY
46       COMPLAINT_TYPE;
47
```

| TEST SQL | RUN SQL |

Query 5 (Passed): SELECT COMPLAINT_TYPE, COUNT(REPORT_NO) AS CASES_REPORTED FROM report_t GROUP BY COMPLAINT_TYPE
Output:
Showing 3 rows

complaint_type	CASES_REPORTED
Email	62
In-Person	446
Phone	810

Observations and Insights:

OBSERVATIONS:

1. Most common method of reporting: Phone:
- The majority of the cases (810) were reported via phone, making it the most frequently used method of complaint submission. This suggests that phone-based reporting is the preferred choice for individuals reporting incidents possibly due to its convenience and accessibility.

2. Significant use of 'in person' reporting:
- A large portion of cases (446) were reported in person, indicating that a substantial number of individuals still prefer face to face interactions when reporting issues. This could be due to the need for more detailed explanations or for more serious matters where people feel more comfortable discussing the issue directly with law enforcement.

3. Low utilization of email for reporting:

- Only 62 cases were reported via email, making it the least used method of complaint submission. This suggests that individuals may not view email as a reliable or timely method for reporting incidents or they may be unaware of its availability as a reporting channel.

4. Overall reliance on phone and in person channels:

- The data shows a clear reliance on traditional reporting methods (phone and in person) which together account for a significant majority of the complaints (1256 cases combined). Digital or online methods like email are used much less frequently.

INSIGHTS:

1. Phone reporting dominance reflect accessibility:

- The dominance of phone reporting (810 cases) reflects its convenience and accessibility. Many people find it easier to quickly make a call to report the incidents especially in an urgent situation where immediate interaction with law enforcement or support staff is needed. This suggests that phone reporting is an effective and user-friendly option for most of the individuals. To maintain this high usage, law enforcement should ensure that their phone lines are sufficiently staffed and capable of handling the high volumes of calls.

2. Preference for personal interaction in serious matters:

- The significant number of in-person reports (446 cases) highlights that many people still prefer personal interactions when reporting incidents. This could be due to the need to explain complex situations, provide evidence or ensure their complaint is taken seriously. In person reporting may also affect the seriousness of certain incidents where complaints feel that discussing matters face to face will yield a more immediate or thorough response. Law enforcement agencies should continue to support this mode of complaint by ensuring easy access to reporting centers particularly for the sensitive or complex cases.

3. Low usage of email suggests awareness or trust issues:

- The relatively low number of cases reported via email (62 cases) suggests that this channel is underutilized. There could be several reasons for this:
  a) Awareness: Citizens may not be aware that email is a valid option for filing complaints.
  b) Trust: Some individuals may not trust email as a secure or timely method for reaching law enforcement.
  c) Preference for the immediate response: Email is often perceived as a slower method of communication compared to phone or in person interactions leading people to prefer channels that provide more immediate feedback.

- To increase the use of email, law enforcement agencies might consider launching campaigns to raise awareness of this option, emphasizing its convenience for non-urgent matters or individuals who prefer written communication. Additionally improving response times to email complaints could help build trust in this method.

4. **Potential for expanding digital reporting methods:**

- The low use of email as a complaint channel presents an opportunity for law enforcement to expand and modernize their digital reporting infrastructure. Offering a broader range of online or app-based reporting tools could make it easier for tech-savvy or younger populations to submit the complaints. This could also help reduce the burden on phone lines and in person reporting centers, allowing the law enforcement to manage resources more efficiently.

5. **Effectiveness of traditional reporting channels:**

- The high use of phone and in person channels suggests that these traditional methods are effective in serving the needs of the public. However, as populations become more accustomed to the digital communication, law enforcement should prepare to adapt to shifting preferences. Maintaining a balance between traditional and digital channel will be important to meet the needs of all community members.

6. **Increased resource allocation for phone-based reporting:**

- Since the phone is the most popular method for reporting complaints, law enforcement agencies may need to allocate additional resources to manage the volume of calls. This could include expanding call center capacity, investing in automated systems that handle lower priority complaints or hiring more staffs to ensure that each call is handles promptly. It will also be important to maintain high service levels, as slow response time or dropped calls could frustrate users and deter them from reporting crimes or incidents.

7. **In-person reporting might reflect the case complexity:**

- The substantial number of in-person reports (446 cases) likely reflects the complexity of certain cases. For example, incidents involving serious crimes, detailed evidence or sensitive personal matters may require in-person interactions. This suggests that while digital and phone-based reporting channels are valuable, in-person reporting remains a critical method for more complex or nuanced situations that require additional support. Law enforcement should ensure that reporting centers remain accessible and staffed by knowledgeable personnel who can handle these more complex cases.

8. **Challenges with email reporting:**

- Emails under utilization could be due to the perception that is less responsive or slower than other methods. People may prefer more immediate feedback and engagement when reporting incidents, which is typically not possible through email. Law enforcement agencies can address this by providing faster responses to email enquiries or by integrating email reporting with other

digital tools that offer real time engagement, such as chat bots or automated acknowledgement systems.

9. **Opportunities for hybrid reporting solutions:**

- Given the strong preference for phone and in-person channels, there is potential to introduce hybrid reporting solutions that combine the convenience of digital communication with the immediacy of phone or in-person interactions. For example, a mobile app that allows citizens to file a report digitally and then schedule a follow up phone call or in-person meeting could bridge the gap between traditional and digital reporting methods. This could also reduce the wait time for in-person appointments while providing a more seamless experience for the public.

10. **Cultural or demographic influences on reporting preferences:**

- The data could reflect the cultural or demographic preferences in how individuals report complaints. Older populations or those less familiar with digital tools may prefer phone or in-person reporting, while younger more tech-savvy individuals might be more likely to use email or digital platforms if they were available. Understanding these preferences can help law enforcement agencies tailor their outreach and reporting channels to serve different segments of the population more effectively.

11. **Impact on crime reporting efficiency:**

- The reliance on phone and in-person channels suggests that methods are effective, they may also create bottlenecks in the reporting systems, especially during the peak times. Expanding the digital reporting options like email, apps or websites could help reduce the load on these traditional channels, allowing for more efficient handling of complaints and quicker responses.
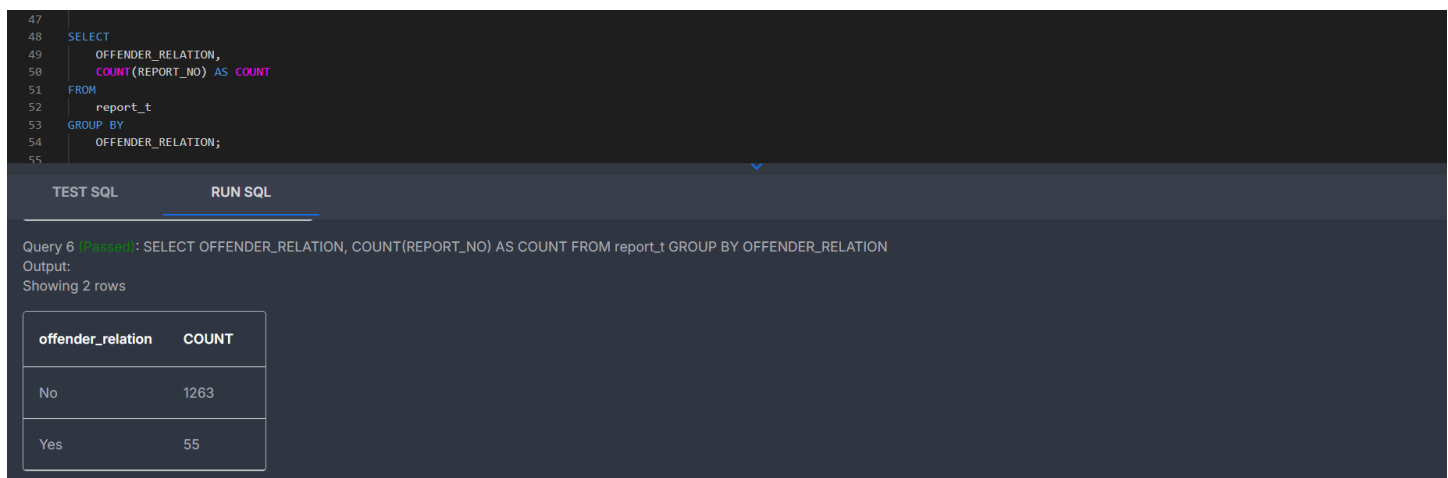
In conclusion, the data reflects a strong reliance on traditional complaint channels (phone and in-person) with relatively low use of digital methods like email. This presents opportunities for the law enforcement agencies to enhance their digital infrastructure, raise awareness of alternative reporting methods and ensure that their traditional reporting channels remain efficient and accessible to all community members. By balancing both the traditional and modern reporting options, law enforcement can better serve the public and manage crime reporting more effectively.

Question 6: Is crime more likely to be committed by the relation of victims or strangers?

```
SELECT

        OFFENDER_RELATION, COUNT(REPORT_NO) AS count

FROM report_t

GROUPBY offender_relation;
```

```
47
48   SELECT
49       OFFENDER_RELATION,
50       COUNT(REPORT_NO) AS COUNT
51   FROM
52       report_t
53   GROUP BY
54       OFFENDER_RELATION;
55
```

TEST SQL   RUN SQL

Query 6 (Passed): SELECT OFFENDER_RELATION, COUNT(REPORT_NO) AS COUNT FROM report_t GROUP BY OFFENDER_RELATION
Output:
Showing 2 rows

offender_relation	COUNT
No	1263
Yes	55

Observations and Insights:

1. **Majority of crimes committed by the strangers:**
- The data shows that in 1,263 cases, the offender has no known relationship to the victim indicating that the overwhelming majority of crimes (95.84%) were committed by the strangers.
2. **Small number of crimes involving known offenders:**
- Only 55 cases (4.16%) involved offenders who had a known relationship with the victim which is significantly smaller proportion compared to the number of crimes committed by the strangers.
3. **Clear disparity between strangers and known offender cases:**
- There is a significant disparity between the number of crimes committed by the strangers and those committed by the people known to the victims. Crimes involving strangers occur far more

frequently than those involving acquaintances, family members or others with prior relationship to the victim.

INSIGHTS:

1. Stranger perpetrated crimes dominate:
- The fact that 95.84% of the crimes are committed by the strangers suggests that most of the criminal activity in the area involves opportunistic or random act of violence, theft or other offences. Law enforcement strategies in this context should focus on the general crime prevention tactics such as increasing patrols in high-risk areas, improving lighting in the public spaces, installing more surveillance systems to deter stranger-initiated crimes.

2. Impact on community safety perception:
- The higher percentage of crimes committed by strangers may contribute to heightened fear and anxiety among the community members as it suggests that anyone could potentially become a victim regardless of personal connections. This could negatively affect the public's sense of security particularly in public spaces where stranger-perpetrated crimes are more likely to occur. Efforts to increase the public safety measures such as neighborhood watch programs could help mitigate these concerns.

3. Focus on random and opportunistic crimes:
- Since the majority of crimes are committed by individuals with no relationship to the victim, law enforcement should prioritize efforts to address opportunistic crimes such as robbery, assault and burglary. Crime prevention measures could include public awareness campaigns about protecting the personal property, improving neighborhood vigilance and enhancing security features in areas prone to random crimes. (Example, bus stops, parking lots)

4. Lower rate of domestic or relationship-based crimes:
- The relatively low number of cases (55) where the offender was known to the victim suggests that the domestic violence or crimes involving close personal relationships are not as prevalent in this dataset. However, it is important to note that such crimes may be underreported due to social stigma, fear of retaliation or other factors. Therefore, while the number is low, law enforcement and social service should still maintain focus on providing support for victims of domestic violence and encouraging reporting of such cases.

5. Crime prevention strategies for public spaces:
- Given the high number of stranger related crimes, enhancing the safety of public spaces should be a top priority. Law enforcement agencies could implement more pro-active crime prevention strategies such as deploying undercover officers, increasing patrols in high traffic areas and installing CCTV cameras in public places. In addition, authorities could collaborate with the local businesses and communities to ensure public spaces are designed to minimize the crime opportunities (Example, better lighting, eliminating isolated areas).

6. Community education and awareness:
- Public awareness campaigns can play a role in reducing stranger-initiated crimes. Educational programs focusing on the personal safety, crime prevention and how to report suspicious activity

can help the community members protect themselves. Furthermore, neighborhood watch programs can be an effective tool in deterring crimes by creating a community-wide effort to monitor for unusual or suspicious behavior.

7. **Victim assistance for stranger crimes:**
- Crimes committed by strangers can often be more traumatic as they may feel more vulnerable and fearful given that the crime sees random or unavoidable law enforcement agencies and victim support services should provide adequate resources for those affected by such crimes, including counselling services, legal support and assistance in navigating the justice system.

8. **Implications for law enforcement priorities:**
- The data indicates that law enforcement should focus a significant portion of their resources on preventing and solving crimes committed by strangers. Targeting hotspots where random crimes are frequent, investing in community policing and utilizing predictive policing methods can help reduce the occurrence of such crimes. Additionally, collaboration with local governments to improve the environmental design. (Example, installing better lighting) can help deter random criminal acts.

9. **Crimes by known offenders may reflect different motivations:**
- Although the number of crimes committed by the known offenders is small, these cases may reflect different underlying motivations compared to the crimes committed by strangers. Crimes between individuals who know each other are often more personal in nature, potentially involving disputes, revenge, domestic violence. Addressing these types of crimes may require a different approach such as meditation services, family counselling or conflict resolution programs to prevent escalation into criminal acts.

10. **Potential for underreporting of domestic or known offender crimes:**
- The low number of cases involving known offender (55 cases) could indicate under reporting of domestic violence or other interpersonal crimes. Many victims of crimes committed by the people they know may not report the incident due to fear of retaliation, shame or desire to protect the offender (especially in cases involving family members). Law enforcement and social services should continue efforts to encourage reporting of domestic crimes and ensure that victims have access to the necessary support system.

11. **Police training and community support for the vulnerable population:**
- Although stranger crimes are more prevalent special attention should be paid to the relatively smaller number of crimes committed by the known individuals. Police should be trained to recognize signs of domestic abuse or conflicts between individuals who know each other. Likewise, community service and legal support should be easily accessible to those experiencing such situations, especially in cases where the victims may be reluctant to come forward.

12. **Addressing the disparity in crime types:**
- The stark contrast between strangers and known offender crimes highlight the need for diversified policing strategies.

In conclusion, the data shows a significant prevalence of crimes committed by strangers which suggest a focus on preventing random, opportunistic crimes in public spaces. Despite the lower number of known offender crimes, law enforcement and social services should continue to address the interpersonal crimes, as these may be under reported and have different motivations. A multi-faceted approach combining crime prevention, community awareness and support systems for the victim is crucial to addressing both the stranger and known offender crimes effectively.

Question 7: Is crime more prevalent in areas with a higher population density, fewer police personnel, and a larger precinct area?

<mark>Solution Query:</mark>

```
SELECT

    precinct_code,

    SUM(l.POPULATION_DENSITY) pop_density,

    COUNT(l.AREA_CODE) total_areas,

    COUNT(o.OFFICER_CODE) total_officers,

    COUNT(r.REPORT_NO) cases_reported

FROM report_t as r

JOIN location_t as l

    ON l.AREA_CODE = r.AREA_CODE

JOIN officer_t as o

    ON r.OFFICER_CODE = o.OFFICER_CODE

GROUPBY o.PRECINCT_CODE;
```

<mark>Output:</mark>

```
55
56  SELECT
57      o.PRECINCT_CODE,
58      SUM(l.POPULATION_DENSITY) AS POP_DENSITY,
59      COUNT(l.AREA_CODE) AS TOTAL_AREAS,
60      COUNT(o.OFFICER_CODE) AS TOTAL_OFFICERS,
61      COUNT(r.REPORT_NO) AS CASES_REPORTED
62  FROM
63      report_t AS r
64  JOIN
65      location_t AS l
66  ON
67      l.AREA_CODE = r.AREA_CODE
68  JOIN
69      officer_t AS o
70  ON
71      r.OFFICER_CODE = o.OFFICER_CODE
72  GROUP BY
73      o.PRECINCT_CODE;
74
```

TEST SQL   RUN SQL

Query 7 (Passed): SELECT o.PRECINCT_CODE, SUM(l.POPULATION_DENSITY) AS POP_DENSITY, COUNT(l.AREA_CODE) AS TOTAL_AREAS, COUNT(o.OFFICER_CODE) AS TOTAL_OFFICERS, COUNT(r.REPORT_NO) AS CASES_REPORTED FROM report_t AS r JOIN location_t AS l ON l.AREA_CODE = r.AREA_CODE JOIN officer_t AS o ON r.OFFICER_CODE = o.OFFICER_CODE GROUP BY o.PRECINCT_CODE
Output:
Showing 7 rows

precinct_code	POP_DENSITY	TOTAL_AREAS	TOTAL_OFFICERS	CASES_REPORTED
1	616200	156	156	156
2	1136862	159	159	159
3	1513542	314	314	314
4	1980500	233	233	233
5	713766	145	145	145

Observations and Insights:

OBSERVATIONS:

1. **Significant variations in the population density:**
- There is a wide range of population densities across the precincts from a low of 390400 (precincts 7) to a high of 1980500 (precincts 4). This indicates that the areas vary greatly in terms of population concentration which could influence the crime rates, the need for law enforcement and resource allocation.

2. **Proportional allocation of officers and areas across precincts:**
- The number of total officers, total areas and cases reported appears to be equal within each precinct. For example, precinct 1 has 156 officers covering 156 areas and reporting 156 cases. This suggests that resources are allocated proportionally within each precinct in relation to the number of areas covered.

3. **High population density in precinct 4:**
- Precinct 4 has the highest population density (1980500) significantly higher than another precinct. Despite having more officers and areas than other precincts the high population density

suggests that this area may require even more resources to adequately manage crimes and maintain safety.

4. **Low population and resource in precinct 7:**
- Precinct 7 has the lowest population density (390400) and the fewest officers, areas reported cases (122 in each category). This indicates that the precinct serves a smaller population and likely experiences less crime, requiring fewer law enforcement resources.

5. **Consistency across officers, areas and cases:**
- In all the precincts the number of officers, areas and reported cases are consistent, suggesting a balanced approach to resource distribution within each precinct. However, this uniformity might not adequately reflect the differing needs for each area, especially considering the variations in population density.

INSIGHTS:

1. **Resource allocation based on the population density:**
- Population density appears to be a major factor influencing the allocation of resources (officers, areas and reported cases) in each precinct. Higher population densities such as in precincts 3,4 and 6 have led to more officers and areas being assigned. This makes sense from a resource management perspective as more densely populated areas are likely to experience higher crime rates, necessitating more law enforcement presence.

2. **Potential resource shortage in high density areas:**
- Precinct 4 with the highest population density (1980500) has 233 officers but given its large population, this may still be insufficient. The ratio of officers to population is lower than in smaller precincts suggesting that more officers may be needed to adequately patrol and respond to the incidents. Increasing law enforcement presence or deploying the advanced surveillance technology could help manage crime more effectively in densely populated areas.

3. **Need for a dynamic approach to crime management:**
- Although the allocation of officers, areas and resources sums proportional within each precinct the uniformity across these categories may not account for the specific challenges faced by each precinct with higher population density (like precincts 2,4 and 6) may require more officers per capita or specialized policing strategies to deal with urban crime while precinct with lower density (like precinct 7) may need fewer officers but more focus on the community policing or preventive strategies.

4. **Balanced distribution of law enforcement resources:**
- The even distribution of officers and areas suggests that law enforcement is attempting to provide balanced coverage across precincts. However, this balance may need to be reexamined

in areas with high population densities or higher crime rates. A more data-driven approach that allocates resources based on the real-time crime data or population growth trends could lead to more efficient crime prevention and faster response times.

5. **Lower crime or reporting in low-density precinct:**

- Precinct 7with the lowest population density and fewer reported cases (122) likely experiences lower crime rates or has less crime reporting activity compared to larger precinct. This precinct from targeted community outreach programs to ensure that residents are reporting incidents accurately and that they feel comfortable interacting with law enforcement. Alternatively, this lower number could simply reflect fewer opportunities for crime in a sparsely populated area.

6. **Potential understaffing in larger precincts:**

- In high-density precincts like precinct 3,4 and 6, the consistency between the number of officers, area and cases reported suggests that while the current staffing levels are proportional, they may still be inadequate for handling the larger population sizes. Crime rates in densely populated areas tend to be higher and a greater law enforcement presence or the introduction of the specializes task forces may be necessary to handle more complex or frequent criminal activities.

7. **Predictive policing and efficient resource utilization:**

- The data highlights an opportunity for implementing predictive policing technologies to allocate resources more dynamically. High density precinct with larger populations may require more proactive measures, such as crime forecasting tools and advanced data analytics to anticipate criminal activity and respond accordingly. This could help optimize the use of law enforcement personnel and ensure that resources are deployed where they are most needed.

8. **Challenges in managing large urban areas:**

- In precincts with larger populations such as precincts 3 and 4 managing crime can be challenging due to the complexity of urban environments. These areas may experience a wider variety of crimes, ranging from petty theft to more serious offences. Therefore, law enforcement agencies may need to introduce specialized units to address specific types of crime such as gang violence, drug related offenses or cyber crime which are more prevalent in densely populated areas.

9. **Precinct 7 as model for low density crime management:**

- Precinct 7, with its lower population density and fewer reported cases could serve as a model for effective policing in low density areas. Community policing strategies where officers are integrated into the local community and work closely with residents may be particularly effective in such areas. This approach fosters trust between law enforcement and the public, making it easier to prevent crime and encourage reporting.

10. **Need for reassessment of officer allocation:**

- While the data shows a consistent allocation of officers across areas, it may be necessary to reassess how officers are distributed within high-density precinct. For example, allocating officers based on the shifts, crime hotspots or during peak hours of criminal activity could help manage resources more efficiently. Additionally, increasing the use of technology (Example, surveillance cameras, drones) in high-density areas could supplement law enforcement and allow officers to focus on more complex tasks.

11. **Public safety and quality of life:**

- In precinct with high population density (like precinct 3 and 4) public safety may be a growing concern. Ensuring that the quality of life remains high in these areas may require a combination of law enforcement efforts urban planning (Example, improving the lighting, reducing overcrowding) and community engagement to deter crime. By focusing on preventative measures and involving the public in safety initiatives, authorities can maintain safety even as the population grows.

12. **Comparison between precincts:**

- Comparing precinct with vastly different population densities provide insights into the challenges faced by the law enforcement. Precinct with higher populations (like precinct 3,4 and 6) face more complex and frequent criminal activities while precinct like precinct 7 may focus more on community relations and preventing isolated incidents. By understanding the unique challenges in each precinct, law enforcement can tailor their strategies accordingly.

In conclusion, the data reveals significant variation in the population densities across precincts with proportional allocation of officers and areas within each precinct. However, high-density areas may require more focused attention, additional resources and a dynamic policing strategy to effectively manage crime. In contrast, low-density areas might benefit from community policing initiatives and a focus on crime prevention. A more data-driven approach to resource allocation and strategic deployment of law enforcement personnel could optimize public safety across all precincts.

: **At what parts of the day is the crime rate at its peak? Group this by the type of crime. Use the following mapping to divide the day into five parts.**

00:00 to 05:00 = Midnight,
05:01 to 12:00 = Morning,
12:01 to 18:00 = Afternoon,
18:01 to 21:00 = Evening,
21:00 to 24:00 = Night

Solution Query:

```
SELECT

        dayparts,

        crime_type,

        Crimes_reported

FROM (SELECT

            CASE

                    WHEN strftime('%H', INCIDENT_TIME) >= '00' AND
                    strftime('%H', INCIDENT_TIME) < '05' THEN 'Midnight'

                    WHEN strftime('%H', INCIDENT_TIME) >= '05' AND
                    strftime('%H', INCIDENT_TIME) < '12' THEN 'Morning'

                    WHEN strftime('%H', INCIDENT_TIME) >= '12' AND
                    strftime('%H', INCIDENT_TIME) < '18' THEN 'Afternoon'

                    WHEN strftime('%H', INCIDENT_TIME) >= '18' AND
                    strftime('%H', INCIDENT_TIME) <= '21' THEN 'Evening'

                    ELSE 'Night'

            END AS dayparts,

            crime_type,

            COUNT(REPORT_NO) AS crimes_reported,

            RANK() OVER(PARTITION BY CASE

            WHEN strftime(('%H', INCIDENT_TIME) >= '00' AND

                    strftime('%H', INCIDENT_TIME) < '05' THEN 'Midnight'

            WHEN strftime('%H', INCIDENT_TIME) >= '5' AND

                    strftime('%H', INCIDENT_TIME) < '12' THEN 'Morning'
```

```
            WHEN strftime('%H', INCIDENT_TIME) >= '12' AND

                  strftime('%H', INCIDENT_TIME) < '18' THEN
        'Afternoon'

            WHEN strftime('%H', INCIDENT_TIME) >= '18' AND

                  strftime('%H', INCIDENT_TIME) <= '21' THEN 'Evening'

            ELSE 'Night'

        END AS dayparts,

        l.AREA_NAME COUNT(r.REPORT_NO

                ) AS high_crime_reported

    FROM report_t AS r

    JOIN location_t AS l

        ON l.AREA_CODE = r.AREA_CODE

    JOIN officer_t AS o

        ON r.OFFICER_CODE = o.OFFICER_CODE

    GROUPBY dayparts, crime_type

    ) AS wk_crime

WHERE wk_crime.high_crime_reported = 1;
```

Output:

```
75  SELECT
76      dayparts,
77      crime_type,
78      crimes_reported
79  FROM (
80      SELECT
81          CASE
82              WHEN strftime('%H', INCIDENT_TIME) >= '00' AND strftime('%H', INCIDENT_TIME) < '05' THEN 'Midnight'
83              WHEN strftime('%H', INCIDENT_TIME) >= '05' AND strftime('%H', INCIDENT_TIME) < '12' THEN 'Morning'
84              WHEN strftime('%H', INCIDENT_TIME) >= '12' AND strftime('%H', INCIDENT_TIME) < '18' THEN 'Afternoon'
85              WHEN strftime('%H', INCIDENT_TIME) >= '18' AND strftime('%H', INCIDENT_TIME) <= '21' THEN 'Evening'
86              ELSE 'Night'
87          END AS dayparts,
88          crime_type,
89          COUNT(REPORT_NO) AS crimes_reported,
90          RANK() OVER (
```

TEST SQL   **RUN SQL**

Query 8 (Passed): SELECT dayparts, crime_type, crimes_reported FROM (SELECT CASE WHEN strftime('%H', INCIDENT_TIME) >= '00' AND strftime('%H', INCIDENT_TIME) < '05' THEN 'Midnight' WHEN strftime('%H', INCIDENT_TIME) >= '05' AND strftime('%H', INCIDENT_TIME) < '12' THEN 'Morning' WHEN strftime('%H', INCIDENT_TIME) >= '12' AND strftime('%H', INCIDENT_TIME) < '18' THEN 'Afternoon' WHEN strftime('%H', INCIDENT_TIME) >= '18' AND strftime('%H', INCIDENT_TIME) <= '21' THEN 'Evening' ELSE 'Night' END AS dayparts, crime_type, COUNT(REPORT_NO) AS crimes_reported, RANK() OVER (PARTITION BY CASE WHEN strftime('%H', INCIDENT_TIME) >= '00' AND strftime('%H', INCIDENT_TIME) < '05' THEN 'Midnight' WHEN strftime('%H', INCIDENT_TIME) >= '05' AND strftime('%H', INCIDENT_TIME) < '12' THEN 'Morning' WHEN strftime('%H', INCIDENT_TIME) >= '12' AND strftime('%H', INCIDENT_TIME) < '18' THEN 'Afternoon' WHEN strftime('%H', INCIDENT_TIME) >= '18' AND strftime('%H', INCIDENT_TIME) <= '21' THEN 'Evening' ELSE 'Night' END ORDER BY COUNT(REPORT_NO) DESC) AS high_crime_reported FROM report_t GROUP BY dayparts, crime_type) AS wk_crime WHERE high_crime_reported = 1
Output:
Showing 5 rows

dayparts	crime_type	crimes_reported
Afternoon	BATTERY - SIMPLE AS...	54
Evening	BURGLARY FROM VEHI...	71
Midnight	BATTERY - SIMPLE AS...	19
Morning	BATTERY - SIMPLE AS...	51
Night	BURGLARY FROM VEHI...	21

Observations and Insights:

OBSERVATIONS:

1. **Battery-Simple Assault dominates in most day parts:**
- 'Battery-Simple Assault' is the most frequently reported crime in three of the five-day parts: Afternoon (54 cases), midnight (19 cases) and morning (51 cases). This indicates that assault type incidents occur across various times of the day, particularly during the afternoon and morning hours.

2. **Burglary from vehicle is more frequent in evening and night:**
- 'Burglary from vehicle' is most commonly reported during the evening (71 cases) and night (21 cases). These time periods are typically associated with reduced visibility and less public presence, which may create more opportunities for vehicle related burglaries.

3. **Peak crime periods for Battery-Simple Assault:**
- The afternoon (54 cases) and morning (51 cases) are the peak times for Battery-Simple Assault incidents, suggesting that this type of crime is more likely to occur during the daytime hours.

However, incidents also occur during midnight (19 cases) although at a lower frequency compared to the daytime.

4. High incidence of burglary from vehicles in the evening:

- The evening period (71 cases) reports the highest number of 'Burglary from vehicle' incidents which suggests that this crime type is more likely to occur when people are at home or otherwise not attending to their vehicles.

5. Night time crime activity focuses on vehicle from burglary:

- During the night period, 'Burglary from vehicle' remains the most frequent crime (21 cases). This aligns with the idea that night time provides greater cover for offenders to target vehicles, particularly in poorly lit or secluded areas.

INSIGHTS:

1. Pattern of assault crimes in daytime:

- The fact that 'Battery-Simple Assault' is the most suggests that these crimes may occur in public spaces during times when there is more human activity. This could include workspace disputes, street altercations or conflicts in the public places such as parks or transportation hubs. Law enforcement agencies may need to increase their presence in high-traffic areas during these times to prevent or quickly respond to such incidents.

2. Crime prevention focus on burglary from vehicles in the evening and night:

- The high occurrences of 'Burglary from vehicle' during the evening (71 cases) and night (21 cases) points to a need for enhanced security measures during these periods. Strategies such as increased night time patrols, installation of better lighting in the parking lots, residential areas and public spaces and public awareness campaigns about securing vehicles could help reduce these incidents. Encouraging residents to park it well-lit, secure areas may also deter burglars.

3. Midnight assaults indicate ongoing vulnerability:

- While 'Battery-Simple Assault' is less frequent during the midnight period (19 cases) compared to other times of the day, its presence indicates a level of vulnerability for individuals who are out late at night. This suggests a need for targeted policing strategies during the late hours particularly around night life districts, transportation hubs, or other areas where people may be more likely to engage in or become victims of the physical altercations.

4. Vehicle security measures should be a priority in the evening:

- The peak in vehicle burglaries during the evening points to a time when many people are likely to be at home, perhaps leaving their vehicles unattended. Law enforcement and city planners could work together to promote enhanced vehicle security such as car alarms, steering wheel locks and

CCTV coverage in high-risk areas. Additionally, campaigns could educate people on best practices for preventing vehicle burglary such as removing valuables from the cars.

5. **Impact of public visibility on crime:**

- The patterns observed, particularly with 'Burglary from vehicle' suggests that crimes are more likely to occur in low visibility environments. The fact that vehicle burglaries spike in the evening and night indicates the perpetrators take advantage of lower public visibility and fewer people on the streets. Improving street lights, increasing night time surveillance and encouraging community-based vigilance programs may help reduce these crimes.

6. **Potential for work place related assaults:**

- The high frequency of 'Battery-Simple Assault' during morning and afternoon could be linked to workplace related conflicts or disputes that escalates into physical altercations. Organizations may benefit from implementing the conflict resolution training or awareness programs to address workplace disputes before they turn into violent incidents. Law enforcement agencies could also consider developing partnerships with businesses to help identify the common areas or times where the assaults tend to occur.

7. **Focus on peak times for crime prevention:**

- Given that both 'Battery-Simple Assault' and 'Burglary from vehicle' have distinct peak times (day time for assault, evening/ night for vehicle burglary), law enforcement should tailor their crime prevention efforts to these periods. This could involve deploying officers strategically during peak crime times or enhancing surveillance systems to cover areas where these crimes are most likely to occur.

8. **Community engagement for preventing assaults:**

- Since many assault incidents occur during the day, community engagement initiatives such as public safety campaigns or neighborhood watch programs could help prevent the disputes from escalating into physical altercations. Educational programs that promote non-violent conflict resolution, particularly in schools, workplaces and public places might also reduce the incidence of 'Battery-Simple Assault'.

9. **Reinforcing the personal safety in night time settings:**

- With 'Battery-Simple Assault' occurring even at midnight, there is a need for individuals to take precautions when out late at night. Law enforcement could work with local businesses particularly in entertainment districts to promote personal safety measures such as travelling in groups, staying in well-lit areas and knowing where to find emergency assistance if needed.

10. **Night time policing strategies:**

- The increased number of vehicle burglaries during the evening and night hours suggests that law enforcement should focus on these periods for heightened patrolling especially in areas where

vehicle theft is most prevalent. Using predictive policing techniques to anticipate where crimes are likely to occur could allow for more efficient allocation of police resources.

In conclusion, the data shows a clear division between the types of crimes committed at different times of the day. 'Battery-Simple Assault' is more common during the day indicating the need for increased law enforcement presence in public spaces during the morning and afternoon hours.

Question 9: At what point in the day do most crimes occur in different localities? Use the same mapping provided in Question 8 to divide the day into five parts.

```
SELECT

        area_name,

        dayparts,

        cases_reported

FROM (SELECT

            CASE

                    WHEN strftime('%H', r.INCIDENT_TIME) >= '00' AND

                    strftime('%H', r.INCIDENT_TIME) < '05' THEN 'Midnight'

                    WHEN strftime('%H', r.INCIDENT_TIME) >= '05' AND

                    strftime('%H', r.INCIDENT_TIME) < '12' THEN 'Morning'

                    WHEN strftime('%H', r.INCIDENT_TIME) >= '12' AND

                    strftime('%H', r.INCIDENT_TIME) < '18' THEN 'Afternoon'

                    WHEN strftime('%H', r.INCIDENT_TIME) >= '18' AND

                    strftime('%H', r.INCIDENT_TIME) <= '21' THEN 'Evening'

                    ELSE 'Night'

            END AS dayparts,

            RANK() OVER(PARTITION BY l.AREA_NAME ORDER BY

            COUNT(r.REPORT_NO)DESC)

            AS high_crime_reported,

            area_name,

            COUNT(r.REPORT_NO) AS cases_reported

        FROM report_t AS r

        JOIN location_t AS l

            ON l.AREA_CODE = r.AREA_CODE

        JOIN officer_t AS o
```

```
            ON r.OFFICER_CODE = o.OFFICER_CODE

        GROUP BY dayparts, l.AREA_CODE

        ORDER BY COUNT(r.REPORT_NO) DESC

        ) AS d_case

    WHERE d_case.high_crime_reported = 1;
```

Output:

==Output:==

```
113        cases_reported
114    FROM (
115        SELECT
116            CASE
117                WHEN strftime('%H', r.INCIDENT_TIME) >= '00' AND strftime('%H', r.INCIDENT_TIME) < '05' THEN 'Midnight'
118                WHEN strftime('%H', r.INCIDENT_TIME) >= '05' AND strftime('%H', r.INCIDENT_TIME) < '12' THEN 'Morning'
119                WHEN strftime('%H', r.INCIDENT_TIME) >= '12' AND strftime('%H', r.INCIDENT_TIME) < '18' THEN 'Afternoon'
120                WHEN strftime('%H', r.INCIDENT_TIME) >= '18' AND strftime('%H', r.INCIDENT_TIME) <= '21' THEN 'Evening'
121                ELSE 'Night'
122            END AS dayparts,
123            l.AREA_NAME,
124            COUNT(r.REPORT_NO) AS cases_reported,
125            RANK() OVER (
126                PARTITION BY
127                    l.AREA_NAME,
128                    CASE
```

TEST SQL	RUN SQL

Query 9 (Passed): SELECT area_name, dayparts, cases_reported FROM (SELECT CASE WHEN strftime('%H', r.INCIDENT_TIME) >= '00' AND strftime('%H', r.INCIDENT_TIME) < '05' THEN 'Midnight' WHEN strftime('%H', r.INCIDENT_TIME) >= '05' AND strftime('%H', r.INCIDENT_TIME) < '12' THEN 'Morning' WHEN strftime('%H', r.INCIDENT_TIME) >= '12' AND strftime('%H', r.INCIDENT_TIME) < '18' THEN 'Afternoon' WHEN strftime('%H', r.INCIDENT_TIME) >= '18' AND strftime('%H', r.INCIDENT_TIME) <= '21' THEN 'Evening' ELSE 'Night' END AS dayparts, l.AREA_NAME, COUNT(r.REPORT_NO) AS cases_reported, RANK() OVER (PARTITION BY l.AREA_NAME, CASE WHEN strftime('%H', r.INCIDENT_TIME) >= '00' AND strftime('%H', r.INCIDENT_TIME) < '05' THEN 'Midnight' WHEN strftime('%H', r.INCIDENT_TIME) >= '05' AND strftime('%H', r.INCIDENT_TIME) < '12' THEN 'Morning' WHEN strftime('%H', r.INCIDENT_TIME) >= '12' AND strftime('%H', r.INCIDENT_TIME) < '18' THEN 'Afternoon' WHEN strftime('%H', r.INCIDENT_TIME) >= '18' AND strftime('%H', r.INCIDENT_TIME) <= '21' THEN 'Evening' ELSE 'Night' END ORDER BY COUNT(r.REPORT_NO) DESC) AS high_crime_reported FROM report_t AS r JOIN location_t AS l ON r.AREA_CODE = l.AREA_CODE GROUP BY dayparts, l.AREA_NAME) AS d_case WHERE high_crime_reported = 1
Output:
Showing first 10 rows out of 55 rows

AREA_NAME	dayparts	cases_reported
77th Street	Afternoon	16
77th Street	Evening	18
77th Street	Midnight	9
77th Street	Morning	10
77th Street	Night	5

Observations and Insights:

==OBSERVATIONS:==

1. **Variation in crime across different dayparts:**
- Both 77th Street and Harbor areas show noticeable variation in the number of crimes reported across different times of the day. In both the areas, the afternoon and evening periods see the highest number of reported cases while the night and midnight periods see fewer cases.

2. 77th Street crime peaks in the evening:

- In the 77th Street area, the highest number of cases (18) occur during the evening. This is followed closely by the afternoon period, which has 16 reported cases. The night period reports the fewest cases (5) suggesting that crime is less frequent in this area during late night hours.

3. Harbor area also sees a peak in the afternoon:

- The harbor area sees the most reported cases in the afternoon (27 cases) making it the peak crime time of this area. The evening period follows with 19 cases, while the midnight (7 cases) and night (6 cases) periods see the fewest incidents.

4. Higher crime numbers in Harbor compared to 77th street in the afternoon:

- The Harbor area reports 27 cases in the afternoon, which is significantly higher than the 16 cases reported in the 77th Street area during the same period. This suggests that the Harbor area experiences more crime activity during daytime hours than 77th Street.

5. Lower crime activity at night and midnight in both the areas:

- Both the areas show a decline in criminal activity during the night and midnight periods with Harbor reporting 6 and 7 cases and 77th Street reporting 5 and 9 cases respectively. This pattern suggests that fewer incidents occur during late-night hours in both the neighborhoods.

6. Consistent morning crime activity in both the areas:

- The morning period shows a similar crime activity in both the areas, with 77th Street reporting 10 cases and Harbor reporting 12 cases. This consistency may indicate that morning crimes are less influenced by the geographic factors and more dependent on the routines of individuals across both the areas.

INSIGHTS:

1. Targeted crime prevention for evening and afternoon:

- Both 77th Street and Harbor areas experience the highest number of crimes in evening and afternoon indicating that the law enforcement should focus their resources on these periods. Increased police presence or patrols during the afternoon and evening could help deter criminal activity and provide quicker responses to incidents. Community engagement initiatives such as neighborhood watch programs could also be activated during these peak times.

2. Higher crimes in Harbor suggests focused interventions:

- The Harbor area shows a higher number of reported cases during the afternoon compared to 77th Street with 27 cases vs 16 cases. This suggests that the Harbor area may require more targeted interventions during the day, possibly due to higher foot traffic or more opportunities for crime.

Law enforcement could focus on high traffic areas, such as commercial districts or public transportation hubs during these peak times to reduce the crime rates.

3. **Reduced crime during night and mid-night calls for preventive measures:**

- While the number of cases reported during the night and midnight period is relatively low in both the areas, this may indicate that these times are still vulnerable to certain types of opportunistic crimes such as theft or vandalism. Law enforcement could focus on preventive measures during these hours, such as increasing the surveillance in poorly lit or secluded areas to ensure that crime does not escalate during the late-night hours.

4. **Understanding the crime patterns through the community dynamics:**

- The variation in the crime activity across day parts in both the areas may reflect different social dynamics. For example, high number of evening and afternoon cases in both areas could be linked to the factors such as increased outdoor activity, commuting times or social interactions. Understanding these patterns allow law enforcement to anticipate crime trends and take a pro active approach in preventing incidents.

5. **Morning crime consistency across both the areas:**

- The consistent crime levels reported in the morning in both 77th Street and Harbor (10 and 12 cases respectively) suggests that this period may be influenced by the routine activities such as commuting, school drop-offs or morning errands. Law enforcement agencies should maintain a visible presence during the morning hours particularly in areas like bus stops, schools or shopping centers where crimes may be more likely to occur.

6. **Afternoon and evening crimes might involve property or personal conflicts:**

- The concentration of crimes during the afternoon and evening could indicate an increased risk of property-related crimes (example, theft and burglary) or interpersonal conflicts (example assault). These times correspond to when people are returning home from work, socializing or engaging in the public activities. Educating the public on personal safety measures, such as locking vehicles and homes or avoiding confrontational situations may help reduce these types of incidents.

7. **Night crime decline may reflect the environmental factors:**

- The relatively low number of crimes during the night period could be due to the combination of factors such as reduced public activity, increased police patrolling or better lighting in certain areas. However, to maintain this trend law enforcement should continue focusing on improving the environmental design (example, street lighting, surveillance cameras) in both the neighborhoods particularly in areas that are prone to night time crimes like vandalism or vehicle theft.

8. **Crime hotspots during peak hours:**

- Both the 77th Street and Harbor areas appear to have specific crime hotspots during the peak hours (afternoon and evening). Identifying these hotspots – whether they are shopping districts, parks or residential zones could allow law enforcement to deploy more officers in these areas during high-crime periods. This can prevent criminal activities before they occur or provide faster responses to ongoing incidents.

9. **Community based approaches for high crime periods:**

- To address the high number of afternoon and evening crimes in both the areas, law enforcement agencies could consider implementing community-based programs that encourage residents to be more vigilant. For example, initiatives such as "citizen patrols" or partnership with local businesses could help monitor suspicious behavior and prevent crimes before it escalates.

10. **Exploring social factors in Harbor's higher crime rate:**

- The higher number of afternoon crimes in Harbor compared to 77th Street suggests that there may be specific social or economic factors contributing to the increased criminal activity. It may be useful for law enforcement to investigate whether certain socioeconomic factors such as unemployment, poverty, or social unrest are influencing crime rates in the harbor area. Targeting these underlying factors through social programs or economic development initiatives could help reduce crime in the long term.

In conclusion, the data reveals that both 77th Street and Harbor experience the most crimes in the afternoon and evening with lower activity during the night and midnight periods.

: **Which age group is more likely to fall victim to crimes at certain points in the day? Use the same mapping provided in Question 8 to divide the day into five parts. Additionally, use the following mapping to divide the age group.**

Age 0 to 12: kids
13 to 23: teenage
24 to 35: middle age
36 to 55: adults
56 to 120: old

==Solution Query:==

```sql
SELECT

    CASE

        WHEN strftime('%H', INCIDENT_TIME) >= '00' AND strftime('%H',
            INCIDENT_TIME) < '05' THEN 'Midnight'

        WHEN strftime('%H', INCIDENT_TIME) >= '05' AND strftime('%H',
            INCIDENT_TIME) < '12' THEN 'Morning'

        WHEN strftime('%H', INCIDENT_TIME) >= '12' AND strftime('%H',
            INCIDENT_TIME) < '18' THEN 'Afternoon'

        WHEN strftime('%H', INCIDENT_TIME) >= '18' AND strftime('%H',
            INCIDENT_TIME) <= '21' THEN 'Evening'

        ELSE 'Night'

    END AS dayparts,

    CASE

        WHEN VICTIM_AGE >= 0 AND VICTIM_AGE <= 12 THEN 'Kids'

        WHEN VICTIM_AGE > 12 AND VICTIM_AGE <= 23 THEN 'Teenage'

        WHEN VICTIM_AGE > 23 AND VICTIM_AGE <= 35 THEN 'Middle age'

        WHEN VICTIM_AGE > 35 AND VICTIM_AGE <= 55 THEN 'Adults'

        WHEN VICTIM_AGE > 55 THEN 'Old'

        ELSE 'Unknown'

    END AS age_cat,
```

```
          COUNT(REPORT_NO) AS cases_reported

    FROM report_t AS r

        JOIN victim_t AS v

            ON v.VICTIM_CODE = r.VICTIM_CODE

        GROUP BY dayparts, age_cat

        ORDER BY cases_reported DESC;
```

Output:

```
150  SELECT
151      CASE
152          WHEN STRFTIME('%H', INCIDENT_TIME) >= '00' AND STRFTIME('%H', INCIDENT_TIME) < '05' THEN 'Midnight'
153          WHEN STRFTIME('%H', INCIDENT_TIME) >= '05' AND STRFTIME('%H', INCIDENT_TIME) < '12' THEN 'Morning'
154          WHEN STRFTIME('%H', INCIDENT_TIME) >= '12' AND STRFTIME('%H', INCIDENT_TIME) < '18' THEN 'Afternoon'
155          WHEN STRFTIME('%H', INCIDENT_TIME) >= '18' AND STRFTIME('%H', INCIDENT_TIME) <= '21' THEN 'Evening'
156          ELSE 'Night'
157      END AS DAYPARTS,
158      CASE
159          WHEN VICTIM_AGE >= 0 AND VICTIM_AGE <= 12 THEN 'Kids'
160          WHEN VICTIM_AGE > 12 AND VICTIM_AGE <= 23 THEN 'Teenage'
161          WHEN VICTIM_AGE > 23 AND VICTIM_AGE <= 35 THEN 'Middle Age'
162          WHEN VICTIM_AGE > 35 AND VICTIM_AGE <= 55 THEN 'Adults'
163          WHEN VICTIM_AGE > 55 THEN 'Old'
164      END AS AGE_CAT,
165      COUNT(REPORT_NO) AS CASES_REPORTED
166  FROM
167      report_t |
168      JOIN
```

TEST SQL	RUN SQL

Query 10 (Passed): SELECT CASE WHEN STRFTIME('%H', INCIDENT_TIME) >= '00' AND STRFTIME('%H', INCIDENT_TIME) < '05' THEN 'Midnight' WHEN STRFTIME('%H', INCIDENT_TIME) >= '05' AND STRFTIME('%H', INCIDENT_TIME) < '12' THEN 'Morning' WHEN STRFTIME('%H', INCIDENT_TIME) >= '12' AND STRFTIME('%H', INCIDENT_TIME) < '18' THEN 'Afternoon' WHEN STRFTIME('%H', INCIDENT_TIME) >= '18' AND STRFTIME('%H', INCIDENT_TIME) <= '21' THEN 'Evening' ELSE 'Night' END AS DAYPARTS, CASE WHEN VICTIM_AGE >= 0 AND VICTIM_AGE <= 12 THEN 'Kids' WHEN VICTIM_AGE > 12 AND VICTIM_AGE <= 23 THEN 'Teenage' WHEN VICTIM_AGE > 23 AND VICTIM_AGE <= 35 THEN 'Middle Age' WHEN VICTIM_AGE > 35 AND VICTIM_AGE <= 55 THEN 'Adults' WHEN VICTIM_AGE > 55 THEN 'Old' END AS AGE_CAT, COUNT(REPORT_NO) AS CASES_REPORTED FROM report_t JOIN victim_t ON victim_t.VICTIM_CODE = report_t.VICTIM_CODE GROUP BY DAYPARTS, AGE_CAT
Output:
Showing first 10 rows out of 25 rows

DAYPARTS	AGE_CAT	CASES_REPORTED
Afternoon	Adults	229
Afternoon	Kids	41
Afternoon	Middle Age	74
Afternoon	Old	67
Afternoon	Teenage	1

Observations and Insights:

OBSERVATIONS:

1. **Adults report the highest number of cases in both afternoon and evening:**
*   Adults represent the largest group in terms of reported cases in both the afternoon (229 cases) and evening (183 cases). This indicates that adult-related incidents are most frequent during these periods compared to other age groups.

2. **Middle aged group reports a significant number of cases:**
- The middle age category (ages 35-55) has a substantial number of cases in both the afternoon (74 cases) and evening (60 cases) while not as high as adult category, this age group also experiences a notable number of criminal incidents during these times.

3. **Moderate crime reports among the elderly (Old age group):**
- The old age group category (ages 55 and above) reports 67 cases in the afternoon and 53 cases in the evening. While lower than the adult and middle age groups, this indicates that older individuals are still affected by the crimes during these time periods.

- **Relatively few incidents involving kids:**
- The kid's category (0-12) reports 41 cases in the afternoon and 25 cases in the evening. These are the lowest number compared to other age groups indicating children are less frequently involved in incidents during these periods.

4. **Minimal incidents involving teenagers:**
- Teenagers (ages 13-18) reports the fewest cases in both the afternoon (1 case) and evening (4 cases) suggesting that this age group is either less involved in criminal incidents or may be underrepresented in crime reporting during these periods.

5. **Higher crime activity in the afternoon compared to the evening:**
- Across all age groups, more cases are reported during the afternoon than the evening, particularly for adults (229 vs 183) and middle age individuals (74 vs 60). This indicates that the crime activity tends to peak in the afternoon with a slight decrease in the evening.

INSIGHTS:

1. **High incidence of crimes involving adults during the afternoon and evening:**
- The high number of cases reported by adults during both the afternoon and evening suggests that this age group is more exposed to the criminal activity during these periods. This could be due to the variety of factors such as adults being more active during the day, commuting to and from work engaging in social activities and conducting errands. Law enforcement needs to focus on high traffic areas frequented by adults such as business districts, public transportation hubs or shopping centers during these peak times.

2. **Targeted crime prevention for middle aged individuals:**
- The significant number of cases involving middle-aged individuals (74 in the afternoon and 60 in the evening) indicates that this group also faces a higher risk of criminal incidents during these times. Crime prevention strategies such as heightened security in workplaces, parking lots and recreational areas where middle aged individuals are likely to be present could help reduce the number of incidents. Additionally, educating this age group on personal safety measures and raising awareness about the potential risks during these periods could help mitigate these incidents.

3. **Concerns for the elderly safety during afternoon and evening:**

- The moderate number of cases involving the elderly (67 in the afternoon and 53 in the evening suggests that the older individuals are vulnerable to criminal activity during these times, possibly due to factors such as limited mobility, decreased awareness or being perceived as easy targets. Law enforcement agencies should consider implementing special safety measures for the elderly such as offering escort services in high-risk areas, enhancing surveillance near senior living facilities or running community outreach programs aimed at educating older individuals about staying safe during these times.

4. **Fewer crimes involving kids but need for continuous vigilance:**

- Although the number of cases involving kids is relatively low compared to the adults are middle aged individuals, the 41 afternoon cases and 25 evening cases indicate that the children are still at risk during these periods. Law enforcement should continue to prioritize the safety of children, particularly in school zones, playgrounds and areas where children are likely to gather. Enhancing security around the school during dismissal times ensuring that parents and guardians are aware of the potential risks and promoting child safety programs could further reduce these numbers.

5. **Low crime involvement of the teenagers- potential under reporting or under exposure:**

- The extremely low number of cases involving teenagers (1 case in the afternoon and 4 cases in the evening) raises questions about whether the group is under reporting incidents or simply faces fewer criminal risks during these periods. It may be useful of law enforcement to investigate whether certain types of crimes such as cyber bullying, peer conflicts or youth related violence are going under reported in this age group. Outreach program aimed at teenagers could encourage more open communication with law enforcement and provide education on how to report crimes or seek help.

6. **Afternoon as the peak crime period for most age groups:**

- The afternoon is the peak crime period for all the age groups, particularly for adults and middle-aged individuals. This could be due to increased activity in public spaces, workplaces and transportation during this time. Law enforcement agencies should consider increasing patrols and surveillance during the afternoon to prevent crime, especially in areas where adults and middle-aged individuals are concentrated. Implementing targeted crime prevention strategies such as visible police presence in high crime areas could help reduce incidents during this peak period.

7. **Impact of evening activity on crime rates:**

- Although crime rates decline slightly in the evening compared to the afternoon, a substantial number of incidents still occur during this time. This could be attributed to the social activities, shopping, dining and commuting after work hours. Law enforcement should continue to focus on high traffic areas in the evening, particularly where people gather after work or for leisure activities. Ensuring that public places are well lit and secure can help reduce the likelihood of criminal incidents during the evening hours.

8. **Focus on crime prevention for vulnerable age groups:**

- While the adults and middle-aged groups face the highest number of reported cases, the elderly and kids remain vulnerable during the afternoon and evening. Specialized crime prevention strategies such as safety escorts for the elderly individuals or increased vigilance in areas where

children play, could help protect these more vulnerable populations. Law enforcement agencies could also partner with local communities and organizations to develop targeted programs that address the specific needs of these age groups.

9. **Public awareness campaigns based on time specific crime trends:**

- Public awareness campaigns that educate different age groups about the risks they face during specific times of the day could reduce crime rates. For example, adults and middle-aged individuals could be encouraged to take extra precautions during the afternoon and evening, such as avoiding risky areas, securing valuables and being vigilant in the public spaces. Additionally, campaigns aimed at parents and guardians could highlight safety tips for protecting children during these time periods.

10. **Opportunities for technology driven crime prevention:**

- Given the clear trends in when and how crimes affect different age groups, law enforcement could leverage technology to enhance crime prevention efforts. Predictive policing models could help anticipate when and where crimes are likely to occur allowing officers to focus their resources more effectively. Additionally, mobile apps that allow individuals to report suspicious activities in real-time or receive alerts about the potential threats during peak periods could help reduce crime rates and improve public safety.

In conclusion, the data reveals that the crime patterns vary significantly by age group and dayparts with adults and middle-aged individuals being the most frequently affected in the afternoon and evening. Law enforcement should focus on increasing the patrols and implementing the targeted prevention strategies during these periods to protect these vulnerable groups.

Crime Metrics Overview

No. of Precinct	Total Crimes Reported	No. of Areas	No. of Offenders
7	1,318	11	1,318
No. of Officers	**Total Population**	**No. of CCTV's**	**No. of Cases where Status is IC**
54	62,683	2,405	1,186

Recommendations

1. **Increase patrols and resources in heavily impacted precincts:**
- Based on the data, a substantial number of precincts are responsible for handling a high volume of crime cases. It is crucial to allocate more police resources to precincts with a higher incidence of crimes. By improving the officer-to precinct ratio and providing more surveillance (CCTV cameras), authorities can reduce response times and improve the crime deterrence.

2. **Target areas with high population density for enhanced surveillance:**
- Areas with a high population density are likely to experience more crimes due to sheer volume of people and potential offenders. Since the total population is calculated based on the sum of POPULATION_DENSITY from the data, areas with high population density should be equipped with more CCTV cameras and increased police presence. Allocating more resources to these areas will not only aid in monitoring but also deter potential offenders.

3. **Expand CCTV coverage in high crime areas:**
- With the number of CCTV cameras recorded for each area, it is important to recognize the relationship between crime deterrence and surveillance. If an area with a large population or crime rate has fewer CCTV cameras, the city should prioritize installing more surveillance systems. This would aid in faster resolution of cases and provide critical evidence for the ongoing investigations.

4. **Focus on investigation efficiency for the unresolved cases:**
- A significant number of crime reports are still classified as "IC". This indicates that a considerable number of cases remain unresolved. The authorities should focus on improving the case-closing

process by introducing better technology, forensic support and perhaps even more specialized personnel. This will help reduce the investigation backlog and improve public confidence in the legal system.

5. Temporal crime patterns:

- Analyzing crime patterns over different times of the day can guide the law enforcement to increase patrols or surveillance during peak crime hours. (Example evening and night). Since crimes are concentrated in certain times of the day, the city should deploy more police resources during these periods to deter criminal activities.

6. Analyze and address repeated offenses:

- The data suggests that some offenders are repeat criminals meaning that crimes are committed by the individuals with prior offenses. This insight can help prioritize strategies for monitoring and rehabilitating these individuals. Programs aimed at reducing recidivism such as rehabilitation, education and employment assistance should be enhanced to address this issue.

7. Utilize data to identify crime trends and peak times:

- The breakdown of crimes by time of day and locality (dayparts like morning, afternoon, evening etc.) highlights the specific periods when crimes are more likely to occur. Authorities can use this insight to better schedule police patrols and allocate resources more effectively during the peak crime hours. By focusing resources on high-crime areas during these periods law enforcement can prevent crimes before the occur.

8. Reinforce crime prevention programs in areas with fewer officers:

- The analysis of the number of officers available per precinct suggests that some areas are under served. In addition to increasing the number of officers in these areas local governments can implement community policing initiatives, neighborhood watch programs and public safety education to enhance the presence of law enforcement indirectly. These efforts can create a sense of community vigilance and reduce the criminal activity in areas with fewer officers.

9. Track crime by complaint type for public reporting:

- By analyzing the frequency of various complaint types, authorities can better understand the kind of crimes that are being reported most frequently. This information should be shared with the public to raise awareness and promote safety measures that address specific types of crimes prevalent in different localities.

The crime data analysis highlights the several critical areas of improvement including enhancing police presence, surveillance and efficiency in resolving the open cases. Prioritizing high-crime, high population areas, introducing more preventive measures could significantly reduce the criminal activity in Los Angeles. Additionally, focusing on the repeated offenders and better utilizing available crime data for resource allocation will further contribute to a safer environment for the city's residents.