

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
GROUP BY case_status_desc;
```

Output:

Result: **Passed**

✓ Query 1

Query:

```
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:

Observation:


- The dataset contains **three distinct case statuses**:
 - Adult Arrest** → **94 cases**

- **Adult Other** → 38 cases
 - **Invest Cont (Investigation Continued)** → 1186 cases
2. **Majority of cases (1186) fall under "Invest Cont"** (Investigation Continued), which means most cases are still **under investigation** and haven't reached closure.
 3. **Lowest number of cases (38) fall under "Adult Other"**, which may include dismissed or miscellaneous cases.
- **Insights & Business Impact:**
 - ♦ A **high number of pending investigations** suggests **delays in solving cases**, possibly due to **resource constraints, lack of evidence, or legal hurdles**.
 - ♦ The authorities should **analyze investigation timelines** to understand why so many cases remain open.
 - ♦ Strategies like **allocating more investigators or leveraging technology (e.g., AI-based case tracking)** can help speed up **case resolutions**.
 - ♦ Further analysis is needed to **compare crime trends across different precincts** to identify areas with high arrest or unresolved case rates.

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

GROUP BY week_number, crime_type

) AS wk_crime

WHERE wk_crime.high_crime_reported = 1;
```

Output:

Test Cases
Run SQL

Result: Passed

✓ Query 1

✓ Query 2

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
  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:

- **Most Frequent Crime Each Week:**
 - The most frequently reported crime in **Week 1, 2, and 4** was **BURGLARY FROM VEHICLE**.
 - In **Week 3**, the most frequent crime was **BATTERY - SIMPLE ASSAULT**.
- **Burglary from Vehicles:**
 - It was the highest-reported crime in **3 out of 4 weeks**, showing a significant trend.

- The frequency increased from **24 cases in Week 1** to **40 in Week 2** and further to **59 in Week 4**.
- **Battery - Simple Assault:**
 - This was the highest-reported crime in **Week 3** with **48 cases**, surpassing other types of crimes for that week.
- **Implications:**
 - **Burglary from vehicles** is a persistent crime in Los Angeles and needs **focused law enforcement intervention**.
 - Authorities should **increase surveillance and preventive measures** to reduce vehicle-related crimes.
 - **Week 3 saw a shift in crime trends**, with more cases of simple assault, indicating **possible social unrest or interpersonal violence issues**.

These insights can help authorities **prioritize their crime prevention strategies** and allocate resources effectively.

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
GROUP BY area_name
GROUP BY cctv_count DESC;
```

Output:

Result: **Passed**

✓ Query 1

✓ Query 2

✓ Query 3

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
GROUP BY area_name, cctv_count
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
Hollenbeck	170	189
Southwest	168	56
Rampart	165	233

Observations and Insights:

1. Higher CCTV Count Doesn't Always Mean Fewer Crimes

- Hollywood has the highest number of CCTV cameras (280) but still has 122 reported cases.
- With only 170 cameras, Hollenbeck has 189 reported cases, indicating that CCTV presence alone does not necessarily deter crime.

2. Some Areas with Fewer CCTV Cameras Have Higher Crimes

- Rampart has only 165 cameras but has the highest reported cases (233).
- This suggests that factors other than CCTV presence, such as population density, socio-economic conditions, and law enforcement presence, may influence crime rates.

3. No Clear Negative Correlation Between CCTV and Crime

- Areas like Newton (275 cameras, 74 cases) and Northeast (255 cameras, 45 cases) have lower reported crimes despite having a significant number of CCTV cameras.
- However, other areas with high CCTV counts still experience high crime rates, showing an inconsistent trend.

4. Potential Need for Further Analysis

- More variables should be considered to establish a stronger relationship, such as crime types, time of day, and law enforcement response times.
- A deeper statistical correlation analysis would help determine the actual deterrent effect of CCTV cameras.

Conclusion:

The data does not provide strong evidence that higher CCTV camera presence alone is sufficient to deter crimes. Other socio-economic and law enforcement factors likely play a significant role in crime prevention.

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(CASE WHEN r.cctv_flag = 'TRUE' THEN 1 ELSE 0 END) AS
    Total_cctv_footage_available
FROM report_t as r
JOIN location_t as l
    ON l.area_code = r.area_code;
```

Output:

Result: Passed

✓ Query 1

✓ Query 2

✓ Query 3

✓ Query 4

Query:

```
SELECT
    SUM(l.cctv_count) AS total_cctv_installed,
    SUM(CASE WHEN r.cctv_flag = 'TRUE' THEN 1 ELSE 0 END) AS Total_cctv_footage_available
FROM report_t AS r
JOIN location_t AS l
    ON l.area_code = r.area_code
```

✓ Query 4

Query:

```
SELECT
  SUM(l.cctv_count) AS total_cctv_installed,
  SUM(CASE WHEN r.cctv_flag = 'TRUE' THEN 1 ELSE 0 END) AS Total_cctv_footage_available
FROM report_t AS r
JOIN location_t AS l
ON l.area_code = r.area_code
```

Output:

Showing 1 rows

total_cctv_installed	Total_cctv_footage_av...
286820	382

Observations and Insights:

Observations:

1. Total CCTV Installed: The dataset reports a total of 286,820 CCTV cameras installed across all locations.
2. Total CCTV Footage Available: Only 382 crime incidents have associated CCTV footage available.
3. Low Footage Recovery Rate: The availability of footage is extremely low compared to the number of installed cameras.

Insights:

- **Potential Issues with CCTV Functionality:**
 - The large gap between installed cameras (286,820) and footage available (382) suggests that either the CCTV cameras are not functioning properly or the footage is not being retrieved/stored effectively.
 - Possible reasons could include technical malfunctions, lack of proper maintenance, or missing storage backups.
- **Need for Improved Surveillance Utilization:**
 - Since CCTV cameras are a crucial tool in crime investigation, an availability rate of less than 0.15% (382 out of 286,820) is highly concerning.
 - Authorities should investigate why footage is not available in most cases.



- Implementing routine checks, better storage infrastructure, or automated footage retrieval mechanisms can improve utilization.
- **Importance of Location-Based Analysis:**
 - Further breakdown by area_code can help identify whether specific regions have better CCTV coverage or issues with footage retrieval.
 - This can help in targeted improvements in crime-prone areas.
- **Correlation with Crime Solving Rates:**
 - A deeper analysis could determine if cases with CCTV footage have higher resolution rates compared to cases without it.
 - If cases with footage are solved faster, investing in better CCTV management would be a strategic move.

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

Solution Query:

```
SELECT
    complaint_type,
    count(*) AS cases_reported
FROM report_t
GROUP BY complaint_type;
```

Output:

Test Cases
Run SQL

Result: Passed

✓ Query 1

✓ Query 2

✓ Query 3

✓ Query 4

✓ Query 5

Query:

```
SELECT
    complaint_type,
    COUNT(*) AS cases_reported
FROM report_t
GROUP BY complaint_type
```

✓ Query 5

Query:

```
SELECT
    complaint_type,
    COUNT(*) 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. The query retrieves the number of cases reported for each complaint type.
2. The dataset includes three complaint types:
 - **Phone:** 810 cases reported (Highest frequency)
 - **In-Person:** 446 cases reported
 - **Email:** 62 cases reported (Lowest frequency)
3. The grouping ensures that each complaint type is uniquely counted.
4. The `COUNT(*)` function correctly counts the occurrences of each complaint type.

Insights:

1. **Phone complaints are the most frequent** (810 cases), indicating that individuals prefer to report issues via phone calls. This might be due to accessibility, convenience, or quicker response times.
2. **In-person complaints rank second** (446 cases), which could indicate a preference for direct communication, possibly for urgent or serious concerns.
3. **Email complaints are the least common** (62 cases), suggesting that people may not find email an effective or preferred way to file complaints. This could be due to slower response times or lack of confirmation.
4. If resources are being allocated for handling complaints, the focus should be on optimizing phone and in-person complaint resolution processes, as they account for the majority of reports.
5. Encouraging email-based complaints could reduce pressure on phone and in-person channels, possibly through automated email responses or improved digital submission systems.

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

Solution Query:

```
SELECT
    offender_relation, COUNT(*) AS count
FROM report_t
GROUP BY offender_relation;
```

Output:

Test CasesRun SQL

Result: Passed

✓ Query 1

✓ Query 2

✓ Query 3

✓ Query 4

✓ Query 5

✓ Query 6

Query:

```
SELECT
    offender_relation,
    COUNT(*) AS count
FROM report_t
GROUP BY offender_relation
```

Test CasesRun SQL

✓ Query 6

Query:

```
SELECT
    offender_relation,
    COUNT(*) AS count
FROM report_t
GROUP BY offender_relation
```

Output:

Showing 2 rows

offender_relation	count
No	1263
Yes	55

Observations and Insights:

Query Analysis:

- The query retrieves the number of crimes where the offender was either **related to the victim (Yes)** or **not related to the victim (No)**.

Observations:

- Crimes committed by strangers are significantly higher:**
 - 1263 cases** involved an offender who was **not related** to the victim.
 - 55 cases** involved an offender who **was related** to the victim.
- Only ~4.2% of crimes were committed by someone known to the victim:**
 - $$\frac{55}{1263+55} \times 100 = 4.17\%$$

$$\frac{55 \times 100}{1263+55} = 4.17\%$$
 - This suggests that most crimes reported are **stranger-related incidents**.
- Possible Factors Contributing to This Trend:**
 - Crimes by strangers could include theft, robbery, and random acts of violence.
 - Crimes involving known offenders might include domestic violence, family disputes, or crimes of passion.
 - Victims may be more likely to report crimes committed by strangers than by family members due to social or emotional reasons.

Insights:

- Crime Prevention Strategies:** Since most crimes involve **strangers**, law enforcement should focus on **public safety measures**, such as increased patrolling in high-crime areas.
- Awareness Campaigns:** Community awareness programs can help individuals **stay vigilant in public spaces**.
- Domestic Violence Concerns:** While lower in number, crimes committed by known individuals may still be **underreported** due to fear or societal pressure.

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

Solution Query:

```
SELECT
    o.precinct_code,
    SUM(l.population_density) pop_density,
    COUNT(DISTINCT l.area_code) total_areas,
    COUNT(DISTINCT 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
GROUP BY precinct_code
GROUP BY precinct_code;
```

Output:

Test Cases	Run SQL
Result: Passed	
✓ Query 1	
✓ Query 2	
✓ Query 3	
✓ Query 4	
✓ Query 5	
✓ Query 6	
✓ Query 7	
Query:	

Query:

```
SELECT
  o.precinct_code,
  SUM(l.population_density) AS total_pop_density,
  COUNT(DISTINCT l.area_code) AS total_areas,
  COUNT(DISTINCT 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
ORDER BY
  o.precinct_code
```

Output:

Showing 7 rows

precinct_code	total_pop_density	total_areas	total_officers	cases_reported
1	616200	1	7	156
2	1136862	3	9	159
3	1513542	2	11	314
4	1980500	1	10	233
5	713766	2	6	145
6	1263654	1	6	189
7	390400	1	5	122

Observations and Insights:

- **Population Density and Cases Reported:**
 - Precinct 3 has the highest population density (1,513,542) and the highest number of cases reported (314), indicating a potential correlation between higher population density and increased cases.
 - Precinct 7, with the lowest population density (390,400), has the fewest cases reported (122), reinforcing the idea that lower population density may result in fewer cases.
- **Number of Officers:**
 - Precinct 3, with the most officers (11), also has the highest number of cases, suggesting that more officers might be necessary in densely populated areas with higher crime rates.

- Precinct 7, with only 5 officers, has the fewest cases, which could imply that fewer officers are sufficient in areas with lower population density.
- **Total Areas:**
 - Precinct 2 covers the most areas (3) but has a moderate number of cases (159), indicating that covering multiple areas might spread officer resources thin.
 - Precincts 1, 4, 6, and 7 each cover 1 area, but their case numbers vary significantly (156, 233, 189, and 122, respectively), suggesting that the number of areas alone does not determine case numbers.
- **Precinct 4:**
 - Despite having the highest population density (1,980,500), Precinct 4 has fewer cases (233) compared to Precinct 3. This could be due to more effective policing or other external factors.
- **Precinct 7:**
 - With the lowest population density and the fewest officers (5), Precinct 7 reports the fewest cases (122). This supports the notion that lower population density areas may require fewer officers and experience fewer cases.

Question 8: 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:%M', r.incident_time) >= '00:00' AND
                 strftime('%H:%M', r.incident_time) < '05:00' THEN 'Midnight'
            WHEN strftime('%H:%M', r.incident_time) >= '05:01' AND
                 strftime('%H:%M', r.incident_time) < '12:00' THEN 'Morning'
            WHEN strftime('%H:%M', r.incident_time) >= '12:01' AND
                 strftime('%H:%M', r.incident_time) < '18:00' THEN 'Afternoon'
            WHEN strftime('%H:%M', r.incident_time) >= '18:01' AND
                 strftime('%H:%M', r.incident_time) <= '21:00' THEN 'Evening'
            ELSE 'Night'
        END AS dayparts,
        r.crime_type,
        COUNT(r.report_no) AS crimes_reported,
        RANK() OVER (
            PARTITION BY
                CASE
```

```
        WHEN strftime('%H:%M', r.incident_time) >=
'00:00' AND strftime('%H:%M', r.incident_time) < '05:00' THEN
'Midnight'

        WHEN strftime('%H:%M', r.incident_time) >= '05:01' AND
strftime('%H:%M', r.incident_time) < '12:00' THEN 'Morning'

        WHEN strftime('%H:%M', r.incident_time) >= '12:01' AND
strftime('%H:%M', r.incident_time) < '18:00' THEN 'Afternoon'

        WHEN strftime('%H:%M', r.incident_time) >= '18:01' AND
strftime('%H:%M', r.incident_time) <= '21:00' THEN 'Evening'

        ELSE 'Night'

    END

    ORDER BY COUNT(r.report_no) DESC

) AS high_crime_rank

FROM report_t AS r

GROUP BY dayparts, r.crime_type

) AS wk_crime

WHERE wk_crime.high_crime_rank = 1;
```

Output:

Result: Passed

✓ Query 1

✓ Query 2

✓ Query 3

✓ Query 4

✓ Query 5

✓ Query 6

✓ Query 7

✓ Query 8

✓ Query 8

Query:

```
SELECT
  dayparts,
  crime_type,
  crimes_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,
    r.crime_type,
    COUNT(r.report_no) AS crimes_reported,
    RANK() OVER(
      PARTITION BY
        CASE
```

Test Cases

Run SQL

```
RANK() OVER(
  PARTITION BY
    CASE
      WHEN strptime('%H', r.incident_time) >= '00' AND strptime('%H', r.incident_time) < '05' THEN 'Midnight'
      WHEN strptime('%H', r.incident_time) >= '05' AND strptime('%H', r.incident_time) < '12' THEN 'Morning'
      WHEN strptime('%H', r.incident_time) >= '12' AND strptime('%H', r.incident_time) < '18' THEN 'Afternoon'
      WHEN strptime('%H', r.incident_time) >= '18' AND strptime('%H', r.incident_time) <= '21' THEN 'Evening'
      ELSE 'Night'
    END
  ORDER BY COUNT(r.report_no) DESC
) AS high_crime_rank
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, r.crime_type
) AS wk_crime
WHERE wk_crime.high_crime_rank = 1
```

Output:

Showing 5 rows

Test Cases

Run SQL

```
WHERE wk_crime.high_crime_rank = 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:

1. **Evening has the highest crime count (71 cases) with "Burglary from Vehicle."**
 - This suggests that car-related crimes (theft, burglary) peak during the evening hours.
 - Possible reasons: More vehicles parked outside, low visibility, and people being indoors.
2. **Battery - Simple Assault is the most frequent crime type during multiple time slots:**
 - **Morning (51 cases)**
 - **Afternoon (54 cases)**
 - **Midnight (19 cases)**
 - This indicates that physical altercations and assaults occur consistently throughout the day.
 - Midnight has the lowest count for this crime, possibly due to fewer people being outside.
3. **Night (21 cases) also sees "Burglary from Vehicle."**
 - While evening has the peak for vehicle-related crimes, night still shows a significant count.
 - This may indicate an extended risk for vehicle-related thefts after dark.

Insights:

1. Law enforcement should focus on patrols and surveillance during the evening to reduce burglary from vehicles.
2. Increased police presence in the morning and afternoon could help curb physical assaults.
3. Better street lighting and security measures in parking areas could help prevent vehicle break-ins during evening and night hours.
4. Public awareness campaigns on self-defense and conflict resolution could reduce assault-related cases.


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.

Solution Query:

```

SELECT
    area_name,
    dayparts,
    cases_reported
FROM (
    SELECT
        l.area_name,
        CASE
            WHEN strftime('%H:%M', r.incident_time) >= '00:00' AND
                 strftime('%H:%M', r.incident_time) < '05:00' THEN 'Midnight'
            WHEN strftime('%H:%M', r.incident_time) >= '05:01' AND
                 strftime('%H:%M', r.incident_time) < '12:00' THEN 'Morning'
            WHEN strftime('%H:%M', r.incident_time) >= '12:01' AND
                 strftime('%H:%M', r.incident_time) < '18:00' THEN 'Afternoon'
            WHEN strftime('%H:%M', r.incident_time) >= '18:01' AND
                 strftime('%H:%M', r.incident_time) <= '21:00' THEN 'Evening'
            ELSE 'Night'
        END AS dayparts,
        COUNT(r.report_no) AS cases_reported,
        RANK() OVER(
            PARTITION BY l.area_name
            ORDER BY COUNT(r.report_no) DESC
        ) AS high_crime_rank
    FROM report_t AS r
    JOIN location_t AS l
        ON l.area_code = r.area_code
    GROUP BY l.area_name, dayparts

```



```
) AS d_case  
WHERE d_case.high_crime_rank = 1;
```

Output:

Test Cases

Run SQL

✓ Query 9

Query:

```
SELECT
  area_name,
  dayparts,
  cases_reported
FROM (
  SELECT
    l.area_name,
    CASE
      WHEN strftime('%H:%M', r.incident_time) >= '00:00' AND strftime('%H:%M', r.incident_time) < '05:00' THEN 'Midnight'
      WHEN strftime('%H:%M', r.incident_time) >= '05:01' AND strftime('%H:%M', r.incident_time) < '12:00' THEN 'Morning'
      WHEN strftime('%H:%M', r.incident_time) >= '12:01' AND strftime('%H:%M', r.incident_time) < '18:00' THEN 'Afternoon'
      WHEN strftime('%H:%M', r.incident_time) >= '18:01' AND strftime('%H:%M', r.incident_time) <= '21:00' THEN 'Evening'
      ELSE 'Night'
    END AS dayparts,
    COUNT(r.report_no) AS cases_reported,
    RANK() OVER(
      PARTITION BY l.area_name
      ORDER BY COUNT(r.report_no) DESC
```

```
RANK() OVER(  
  PARTITION BY l.area_name  
  ORDER BY COUNT(r.report_no) DESC  
  ) AS high_crime_rank  
FROM report_t AS r  
JOIN location_t AS l  
  ON l.area_code = r.area_code  
GROUP BY l.area_name, dayparts  
) AS d_case  
WHERE d_case.high_crime_rank = 1
```

Output:

Showing first 10 rows out of 12 rows

area_name	dayparts	cases_reported
77th Street	Evening	15
77th Street	Afternoon	15

```
GROUP BY t.area_name, dayparts
) AS d_case
WHERE d_case.high_crime_rank = 1
```

Output:

Showing first 10 rows out of 12 rows

area_name	dayparts	cases_reported
77th Street	Evening	15
77th Street	Afternoon	15
Harbor	Afternoon	23
Hollenbeck	Afternoon	52
Hollywood	Afternoon	37

Newton	Afternoon	18
Northeast	Afternoon	15
Rampart	Afternoon	71
Southwest	Afternoon	18
Van Nuys	Afternoon	43

Observations and Insights:

1. Afternoon is the Most Crime-Prone Time Across Multiple Localities

- Out of **12 reported cases**, **11 peak in the Afternoon (12:01 PM - 6:00 PM)**, making it the **most vulnerable time for crime** across different localities.

- Only **one locality (77th Street)** has an **Evening crime peak** (6:01 PM - 9:00 PM), indicating some variation in crime patterns.

2. Rampart Has the Highest Crime Incidents (71 Cases in the Afternoon)

- **Rampart reports the most crimes (71 cases), making it the most high-risk locality.**
- Other localities with high crime counts in the Afternoon:
 - **Hollenbeck (52 cases)**
 - **Van Nuys (43 cases)**
 - **Hollywood (37 cases)**
 - **Harbor (23 cases)**

3. 77th Street is Unique, With Crime Peaks in Both Afternoon & Evening

- **77th Street records 15 cases in both the Afternoon and the Evening.**
- Unlike other localities, where crimes peak in a single time slot, **77th Street has crime levels sustained over an extended period.**
- This suggests that **criminal activities in this area continue into the evening hours, possibly due to nightlife, commercial activity, or other social factors.**

4. Crime Concentration is Heavily Skewed Towards Specific Localities

- **Rampart, Van Nuys, Hollenbeck, and Hollywood have significantly higher crime reports than other areas.**
- This suggests that crime is concentrated in **high-density urban areas, commercial hubs, or neighborhoods with recurring safety concerns.**

Refined Key Takeaways & Strategic Recommendations

1. **Law enforcement should increase patrols and surveillance during the Afternoon**, as it is the peak crime period in almost all localities.
2. **77th Street requires extended police presence into the Evening**, as it is the only area showing a second crime peak at night.
3. **Rampart is the most high-risk locality** and needs **urgent intervention, increased monitoring, and community crime prevention efforts.**
4. **Further analysis is needed to understand the types of crimes happening in these peak hours** to implement more targeted crime reduction strategies.



Question 10: 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:

```
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) < '17' THEN 'Afternoon'

        WHEN strftime('%H', r.incident_time) >= '17' AND strftime('%H',
r.incident_time) <= '20' THEN 'Evening'

        ELSE 'Night'

    END AS dayparts,

    CASE

        WHEN v.victim_age >= 0 AND v.victim_age <= 12 THEN 'Kids'

        WHEN v.victim_age > 12 AND v.victim_age <= 23 THEN 'Teenage'

        WHEN v.victim_age > 23 AND v.victim_age <= 35 THEN 'Middle age'

        WHEN v.victim_age > 35 AND v.victim_age <= 55 THEN 'Adults'

        WHEN v.victim_age > 55 THEN 'Old'

        ELSE 'Unknown'

    END AS age_cat,

    COUNT(*) 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:

Test Cases

Run SQL

✓ Query 10

Query:

```
SELECT
  CASE
    WHEN strptime('%H', r.incident_time) >= '00' AND strptime('%H', r.incident_time) < '05' THEN 'Midnight'
    WHEN strptime('%H', r.incident_time) >= '05' AND strptime('%H', r.incident_time) < '12' THEN 'Morning'
    WHEN strptime('%H', r.incident_time) >= '12' AND strptime('%H', r.incident_time) < '17' THEN 'Afternoon'
    WHEN strptime('%H', r.incident_time) >= '17' AND strptime('%H', r.incident_time) <= '20' THEN 'Evening'
    ELSE 'Night'
  END AS dayparts,
  CASE
    WHEN v.victim_age >= 0 AND v.victim_age <= 12 THEN 'Kids'
    WHEN v.victim_age > 12 AND v.victim_age <= 23 THEN 'Teenage'
    WHEN v.victim_age > 23 AND v.victim_age <= 35 THEN 'Middle age'
    WHEN v.victim_age > 35 AND v.victim_age <= 55 THEN 'Adults'
    WHEN v.victim_age > 55 THEN 'Old'
    ELSE 'Unknown'
  END AS age_cat,
  COUNT(*) AS cases_reported
FROM report_t AS r
```

```
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:

Showing first 10 rows out of 25 rows

dayparts	age_cat	cases_reported
Afternoon	Adults	190
Evening	Adults	177
Morning	Adults	163
Midnight	Adults	110

Output:

Showing first 10 rows out of 25 rows

dayparts	age_cat	cases_reported
Afternoon	Adults	190
Evening	Adults	177
Morning	Adults	163
Midnight	Adults	110
Night	Adults	102
Evening	Middle age	65
Morning	Middle age	64

Evening	Middle age	65
Morning	Middle age	64
Afternoon	Middle age	57
Evening	Old	57
Afternoon	Old	54

Observations and Insights:

Observations:

- Adults are the most affected age group**
 - They have the highest number of cases reported across all time periods.
 - The top five rows are dominated by "Adults" with the highest case count in the **Afternoon (190 cases)** followed by **Evening (177 cases)** and **Morning (163 cases)**.
- Middle-aged individuals experience moderate crime rates**
 - The highest number of cases in this group is **65 (Evening)**, followed closely by **64 (Morning)** and **57 (Afternoon)**.
 - This suggests they are at risk but to a lesser extent than adults.
- Old individuals face crime mostly in the Evening and Afternoon**
 - Both time slots have similar crime counts (**57 and 54 cases, respectively**).
 - Their vulnerability in these periods may be linked to lower mobility and increased exposure to public spaces.
- Night and Midnight have fewer reported crimes**
 - Fewer crimes occur late at night, which could indicate reduced activity levels or better protection during these hours.

Insights:

1. **Crime prevention measures should target Adults, especially in the Afternoon and Evening.**
 - Increased law enforcement patrols and surveillance could be beneficial during these peak times.
2. **Middle-aged and older individuals should be cautious in the Evening.**
 - Awareness campaigns and safety initiatives can help mitigate risks for these age groups.
3. **Daylight hours (Morning & Afternoon) are not entirely safe.**
 - Crimes are still occurring during these times, especially against adults.
 - Working professionals and commuters should take precautions.

Crime Metrics Overview

No. of Precinct	Total Crimes Reported	No. of Areas	No. of Offenders
7	1318	11	1318
No. of Officers	Total Population	No. of CCTV's	No. of Cases where Status is IC
54	62683	2405	1186

Recommendations

Observations from the Metrics

- High Crime Count:** A total of **1,318** crimes have been reported, which suggests a significant crime rate.
- Limited Police Resources:** There are only **54 officers** managing **1,318 cases**, meaning each officer may be handling multiple cases.
- High Surveillance Coverage:** With **2,405 CCTVs**, surveillance is strong, but it may not be evenly distributed across all **11 areas**.
- Ongoing Investigations:** **1,186 cases are still under investigation (IC status)**, which is a high percentage of total crimes.
- Population Density:** **62,683 people** across **11 areas** means crime prevention strategies must be efficiently targeted.

Recommendations

1. Increase Police Presence

- With only **54 officers**, hiring additional law enforcement personnel can help improve crime response time and investigation efficiency.
- Deploy more officers to high-crime areas identified from past trends.

2. Enhance Surveillance Utilization

- Analyze **CCTV data** to identify patterns and optimize patrol routes.
- Ensure CCTVs are functioning and placed in high-risk locations.

3. Speed Up Case Resolution

- Since **1,186 cases are still under investigation**, improved investigative processes (e.g., data analytics, AI-based crime detection) should be implemented.

- Assign more officers to critical cases with prolonged investigation times.

4. Focus on Peak Crime Hours & Vulnerable Age Groups

- Based on **Query 10**, **adults** face the highest crime risk, particularly in the **afternoon and evening**.
- Implement community safety programs and increase patrolling during these hours.

5. Community Engagement & Awareness

- Conduct public awareness campaigns on crime prevention.
- Strengthen neighborhood watch programs to encourage community participation in reporting suspicious activities.