**Problem Statement**  
  
You are a data analyst for the **Austin Police Department (APD)**, responsible for examining over 1.76 million 911 calls to improve response times, identify critical incidents, assess mental health impacts, and report on the effectiveness of resource allocation. Your task is to use SQL queries to analyze trends, performance metrics, and safety issues, helping to enhance both officer and community safety.

**1. Improving Response Times**

**Problem:** The department wants to understand the factors that affect response times. You are tasked with identifying patterns where response times are high and suggesting changes to reduce these times.

**2. Identifying Mental Health-Related Incidents**

**Problem:** The city council is concerned about mental health-related incidents and wants a report detailing how often these incidents occur, their outcomes, and any patterns.

**3. Assessing Resource Allocation and Unit Efficiency**

**Problem:** The APD needs to optimize the number of units dispatched to incidents, ensuring enough officers are present without over-allocating resources.

**4. Analyzing Incidents by Day of Week and Hour**

**Problem:** The department wants to understand peak times for different types of incidents to adjust patrol schedules accordingly.

**5. Monitoring High-Priority Incidents**

**Problem:** High-priority incidents (priority level 0 or 1) need special attention to ensure that they are being handled efficiently. The APD wants a report showing these incidents, their outcomes, and any injuries sustained by officers or civilians.

**6. Geospatial Analysis of Incident Locations**

**Problem:** The APD wants to understand how incidents are distributed across different council districts and census block groups to better allocate resources.

**Additional Case Studies:**

* **Incident outcome analysis**, exploring how different types of incidents (initial vs. final problem descriptions) are resolved.
* **Officer workload analysis**, examining which officers or sectors handle the most incidents or experience the longest time on scene.

**Key Questions**

* What is the total number of incidents that occurred in each sector?
* What are the top 5 busiest geographic areas in terms of 911 calls, and what is the average response time for each of these areas?
* Identify sectors where mental health-related incidents make up more than 30% of the total incidents.
* What are the busiest days of the week, and how do the types of incidents differ across those days?
* What is the average response time for all incidents involving mental health issues?
* Find the geographic areas where the average number of units dispatched is greater than the average number of units dispatched across all areas.
* Which sectors have the highest percentage of reclassified calls (where the final problem description differs from the initial one)?
* What is the cumulative number of calls throughout each day, and how does this cumulative total change by sector?
* For each sector, rank the geographic areas by total number of 911 calls and show the response time for each area.
* What are the most common types of incidents that occur between 10 PM and 6 AM?
* What percentage of incidents required more than 3 units to be dispatched?
* How do response times compare across different priorities for each type of incident?
* Which geographic areas have the highest number of incidents involving officer injuries or fatalities?
* Which council districts have the highest average response times?
* How many incidents involve serious injury or death (either officers or subjects) related to mental health?
* Find the average response time for each incident type and compare it with the overall average response time.
* Which incidents have closure times that are longer than the average closure time for all incidents?
* For each day of the week, calculate the difference between the average response time for that day and the average response time for all days combined.
* What are the top 3 most frequent final problem descriptions?
* What are the busiest times of the day, and how do incident types vary by time?
* What is the total number of mental health-related incidents, and how has this changed over time?
* Which sectors have above-average mental health-related incidents compared to the overall average for all sectors?
* What is the average time spent on scene by units across different types of incidents?
* What is the distribution of response times across the sectors, and which sectors have the fastest and slowest response times?
* Which incidents have the longest on-scene time, and how does this correlate with the incident type or priority level?
* Which types of incidents typically require reports to be written, and how frequently do these occur?
* How many incidents were initiated by officers in the field compared to those dispatched via 911 calls?
* What is the average number of units dispatched to incidents based on the incident type?
* How do incidents involving officer injuries correlate with mental health-related flags, and which sectors have the highest occurrence of these incidents?

**Deliverables:**

* **Design and develop an interactive, real-time dashboard to help the police gain insights and monitor key metrics from the 911 calls. The dashboard should allow police chiefs and department heads to access the latest data and analyze trends for efficient decision-making.**
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**Tools:**

**Any tool aside Excel that can handle large amounts of Data**

**Deadline:**

* **10 days from the start date.**

**Success Criteria:**

1. **Effective Real-Time Monitoring**
2. **Improved Operational Efficiency**
3. **Data-Driven Decision Making**
4. **Comprehensive and Actionable Presentation**
5. **User-Friendly and Scalable Dashboard**
6. **Stakeholder Satisfaction**