Calgary Fire Department

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Introduction

The Calgary Fire Department has made major strides to enhance public safety in an era using data analytics, where efficacy and efficiency are paramount. With this all-inclusive strategy, event data is analysed to improve emergency responses, lower the number of casualties and reduce property damage. The database presentation of the Calgary Fire Department is thoroughly reviewed in this article, along with information on the goals, objectives, key performance indicators (KPIs) and the conclusions drawn from the data analysis.

Mission Statement

The Calgary Fire Department wants to improve public safety through data-driven research and strategic resource allocation. Their mission is to reduce number casualties, decrease property damage and respond quickly to emergencies. They can use data to make well-informed decisions that improve operational efficiency and effectiveness. This focus to data use demonstrates their commitment to saving lives and defending property, emphasizing the need of contemporary technology and analytics in emergency services. The Calgary fire department's purpose illustrates how informed tactics can improve public safety and resource management.

Purpose

The main purpose of this effort is to improve public safety and the Calgary Fire Department's overall operations by making data-driven decisions. The department's goal is to uncover patterns and trends in their event data so that they may optimize response strategies and resource deployment. This strategic approach enables faster and more efficient responses to emergencies, ensuring that the appropriate resources are given where they are most required. The program demonstrates the department's dedication to utilizing current technologies and analytics to inform its strategies. By harnessing these insights, the Calgary Fire Department may better anticipate and respond to crises, eventually saving lives, decreasing property damage and improving operational efficiency. This forward-thinking strategy highlights how data can be an effective tool for improving public safety and emergency services.

Objectives

The Calgary Fire Department has set out a number of important goals in order to fulfil its mission.

- **Achieve Faster Response Times**: The department seeks to identify and reduce response time-affecting issues through data analysis.

- **Reduce the Number of Casualties**: By increasing response effectiveness and efficiency, the department aims to reduce the impact of incidents on human life.

- **Minimize Property Damage**: The department can more effectively allocate resources to avoid and mitigate property damage by having a better understanding of the causes and locations of incidents.

- **Increase Efficiency in Resource Allocation and Deployment**: Data analysis aids in maximizing the use of troops, fire engines and other resources by ensuring that they are deployed where they are most required.

- **Improve Data Accuracy and Reporting**: Determining the efficacy of various efforts and making well-informed judgments both depend on accurate data gathering and reporting.

Dataset Overview

The Calgary Fire Department's incident records provide the information used in their analysis, which includes:

- **Incident ID**: A unique identifier for each incident.
- **Incident Type**: The category of the incident (e.g., fire, medical emergency, rescue operation).
- **Area and Area ID**: The geographical location where the incident occurred.
- **Rescue**: Details about number of people rescued during operation.
- **Casualties**: Information regarding number of deaths and injuries resulting from the incidents.
- **Amount Property Damage**: Estimates amount of the property damage caused by the incident.

Questions

The analysis aims to answer several critical questions:

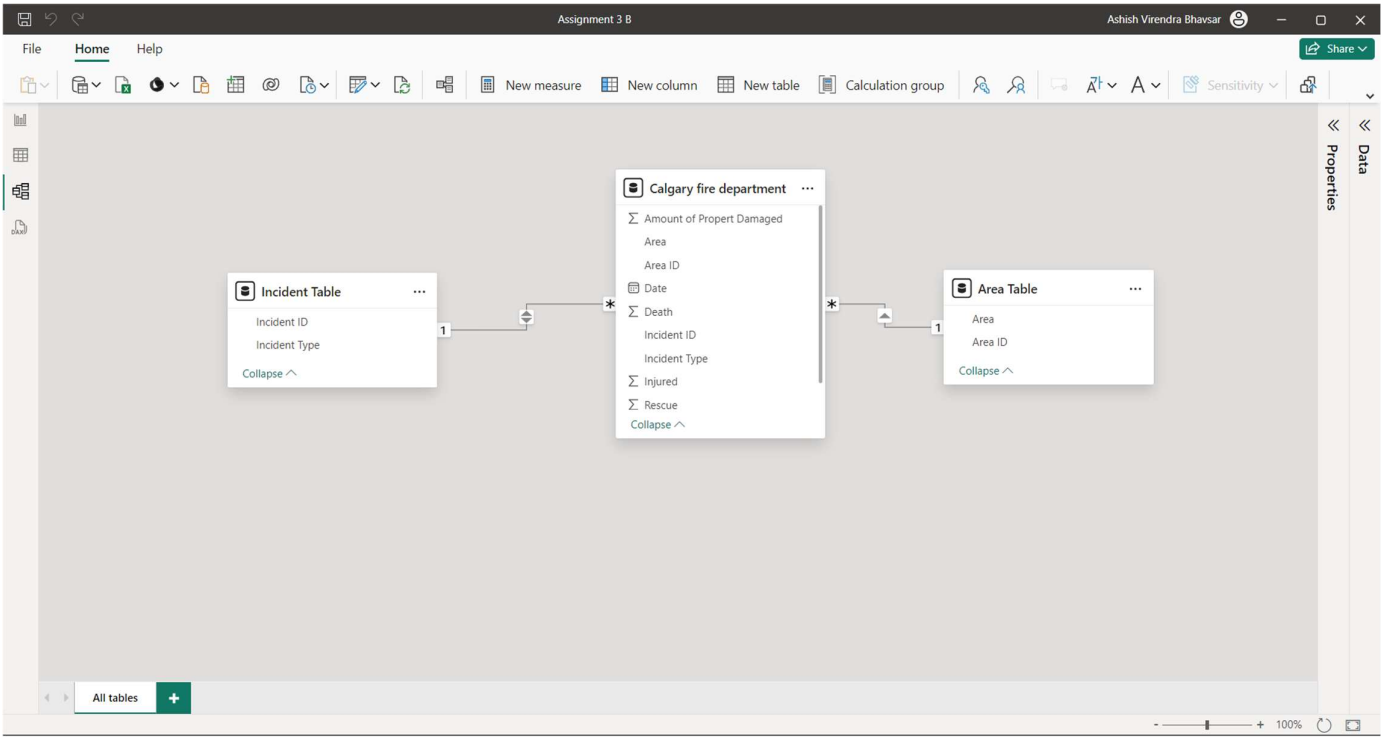
- What is the average response time for each type of incident?
- Which areas have the highest total amount of property damage?
- How many rescues are performed for each type of incident?
- Which incident types require the most rescues?
- What are the total numbers of rescue, deaths and injuries?
- What is the percentage distribution of different types of incidents?

Key Performance Indicators (KPIs)

The Calgary Fire Department monitors a number of KPIs in order to measure its success toward its goals.

- **Total Number of Rescues**: Counts the number of people rescued.
- **Total Number of Injuries:** Provide information on the number of people injured.
- **Total Number of Deaths**: Sum of the numbers of people died in those incidents.

Data Model


Assignment 3 B
Ashish Virendra Bhavsar
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Home
Help
Share
New measure
New column
New table
Calculation group
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Incident Table
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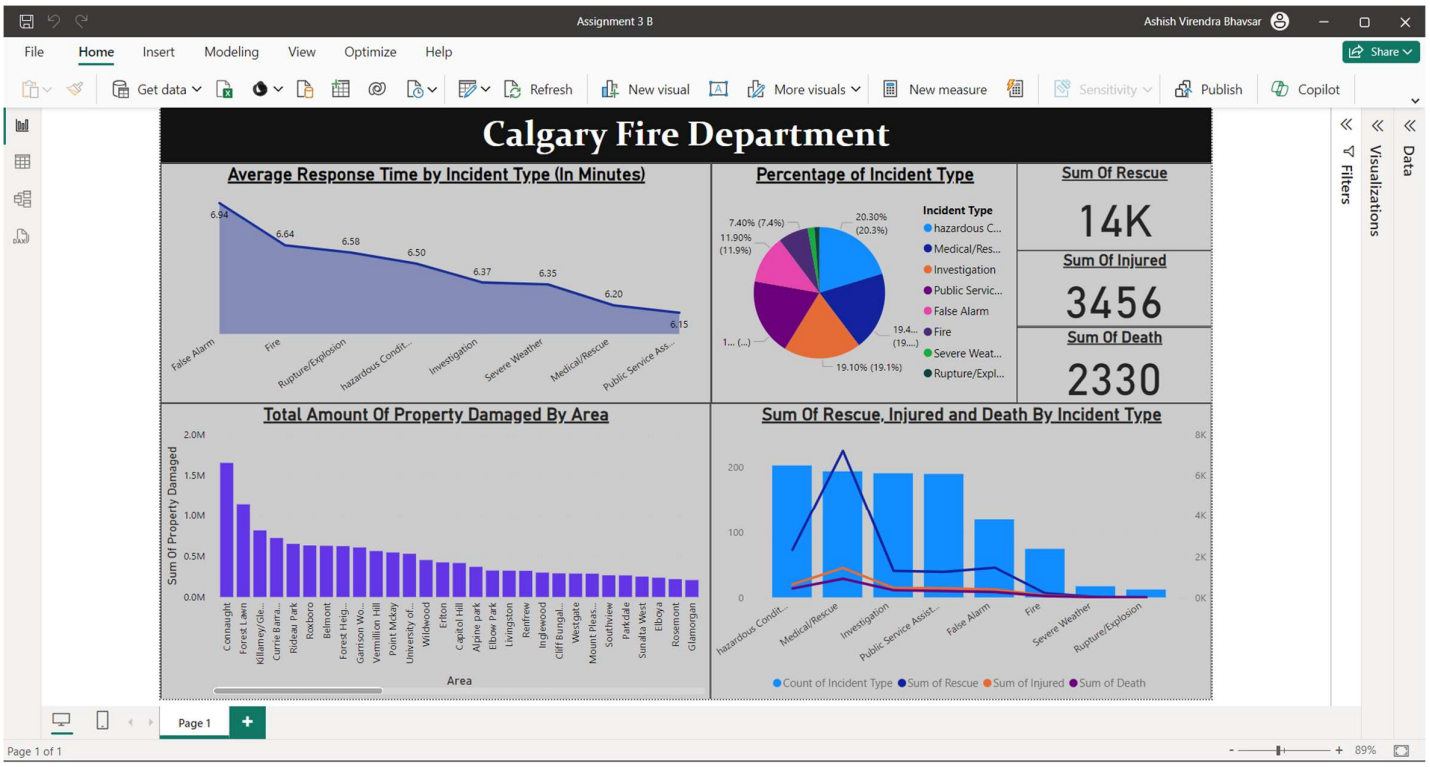
Dashboard Insights

The Calgary Fire Department has developed a thorough dashboard that visualizes these KPIs and provides answers to the important questions using PowerBI. With the use of this dashboard's actionable information, the department is better equipped to pinpoint areas for development and distribute resources.



Results

Chart Description:

1.Sum of Rescue, Injured and Death: This cards summarizes the total counts for key metrics.

- Sum of Rescues: 14,000
- Sum of Injured: 3,456
- Sum of Death: 2,330

2.Average Response Time by Incident Type (In Minutes): This chart displays the average response time for various types of incidents.

- The response times for various types of emergencies are relatively consistent, ranging from 6.15 to 6.94 minutes. False alarms have the longest response time at 6.94 minutes. This data suggests a well-balanced emergency response system with prompt attention across different types of incidents.

3. Percentage of Incident Type: A pie chart showing the distribution of different incident types as a percentage of the total incidents.

- The chart shows the frequency of several emergency types, with Hazardous condition being the most prevalent at 20.30%, followed by Medical/Rescue and Investigation at 19.40% and 19.10%, respectively.

4. Total Amount of Property Damaged by Area: A bar chart shows the total amount of property damaged in different areas of Calgary. Top three areas with the most property damage is:

1. Connaught: 2.0M
2. Forest Lawn: 1.6M
3. Killarney: 1.3M

5.Sum of Rescue, Injured and Death by Incident Type: A combined bar and line chart detailing the counts of rescues, injuries and deaths for each incident type.

- Medical/Rescue incidents are characterized by the highest occurrences involving rescues, injuries and deaths.

Conclusion

The Calgary Fire Department's data analysis indicates key trends and opportunities for improvement. Using this data, the agency may improve response times and distribute resources more effectively. This strategic use of information enables speedier, more effective emergency responses, resulting in fewer casualties and property damage. The data-driven approach emphasizes the importance of contemporary technology and analytics for improving public safety operations. Understanding patterns in event data allows Calgary fire department to make informed decisions that ultimately save lives and protect communities, demonstrating data's revolutionary impact in emergency services.