

Airplane Crash Analysis with Power BI



Mentorless Internship Project
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Contents

.Problem Statement

.Objective

.Data Cleaning

.Analysis

 Fatality Analysis

 Temporal Analysis

 Geospatial Analysis

.Analysis Conclusions



Problem Statement

This internship project aims to analyze airplane crashes and fatalities spanning from 1980 to 2023, using Power BI for interactive visualizations and insights. By examining crucial data such as crash dates, locations, operators, flight details, aircraft types, and fatality statistics, the goal is to uncover patterns, contributing factors, and trends in aviation incidents. Ultimately, this analysis seeks to provide stakeholders with actionable insights to enhance aviation safety and mitigate risks.



OBJECTIVE

.Temporal Analysis:

- Explore temporal trends in airplane crashes over the years.
- Identify patterns in the frequency and severity of incidents.

Geospatial Analysis:

- Visualize crash locations on a map to identify hotspots.
- Analyze the distribution of incidents across different regions.

Fatality Trends:

- Explore trends in passenger and crew fatalities.
- Investigate factors contributing to fatalities.

Route Analysis:

Aircraft Analysis:

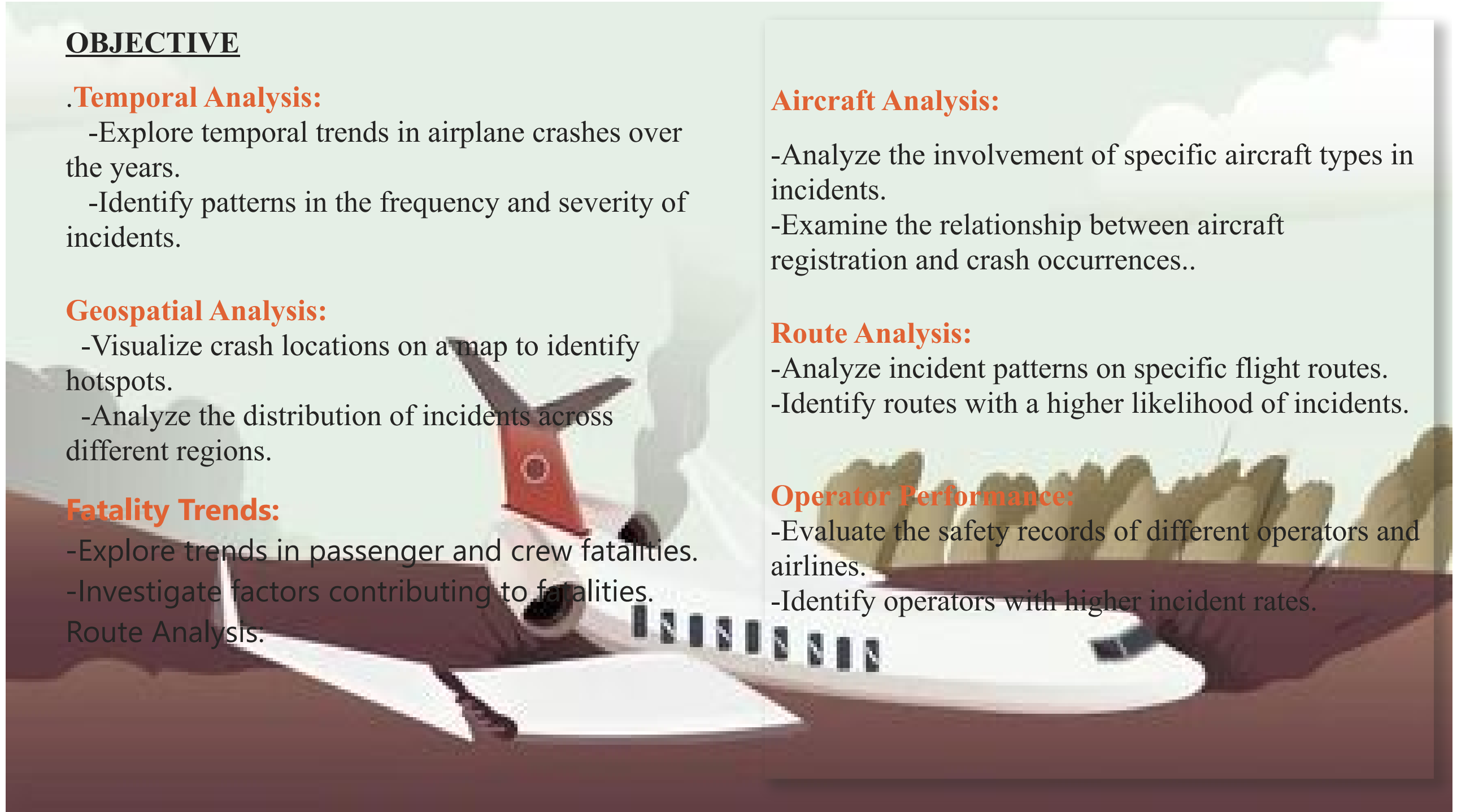
- Analyze the involvement of specific aircraft types in incidents.
- Examine the relationship between aircraft registration and crash occurrences..

Route Analysis:

- Analyze incident patterns on specific flight routes.
- Identify routes with a higher likelihood of incidents.

Operator Performance:

- Evaluate the safety records of different operators and airlines.
- Identify operators with higher incident rates.



Data Cleaning Process

The data cleaning process entails several steps to ensure the dataset's quality and reliability. These steps involve handling missing values, standardizing formats, and verifying data accuracy and consistency.

Furthermore, to enhance the dataset's analytical depth, new columns have been added. The "Country" column provides contextual information by specifying the country where each incident occurred.

In summary, the meticulous data cleaning and enrichment procedures contribute to a well-prepared dataset, facilitating accurate analysis and informed decision-making in aviation safety.



Fatality Analysis

Route



Comox-Port Hardy

14099

Abbotsford-Telmon

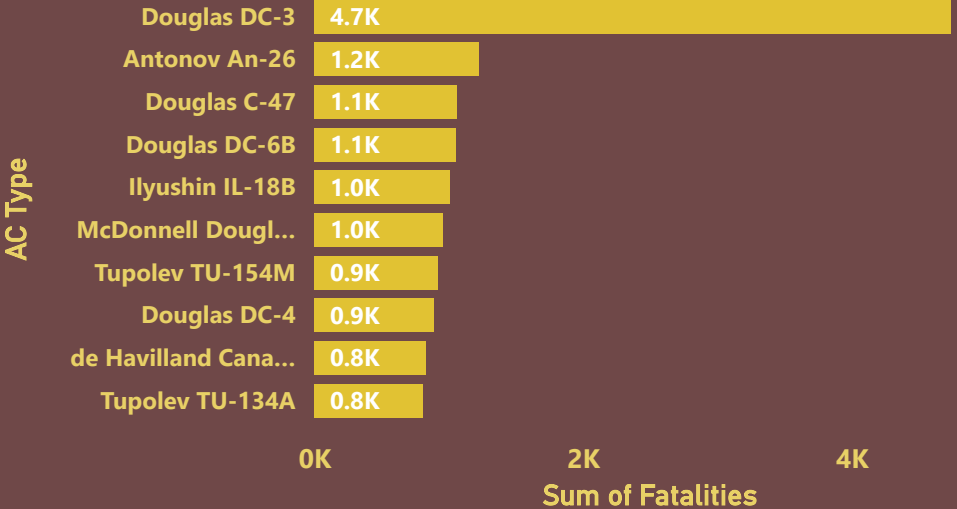
129K

Sum of Aboard Passangers

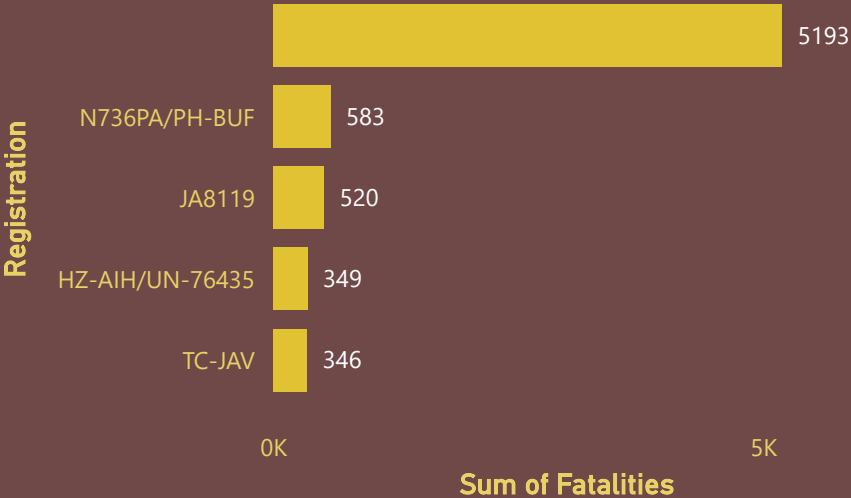
21K

Sum of Aboard Crew

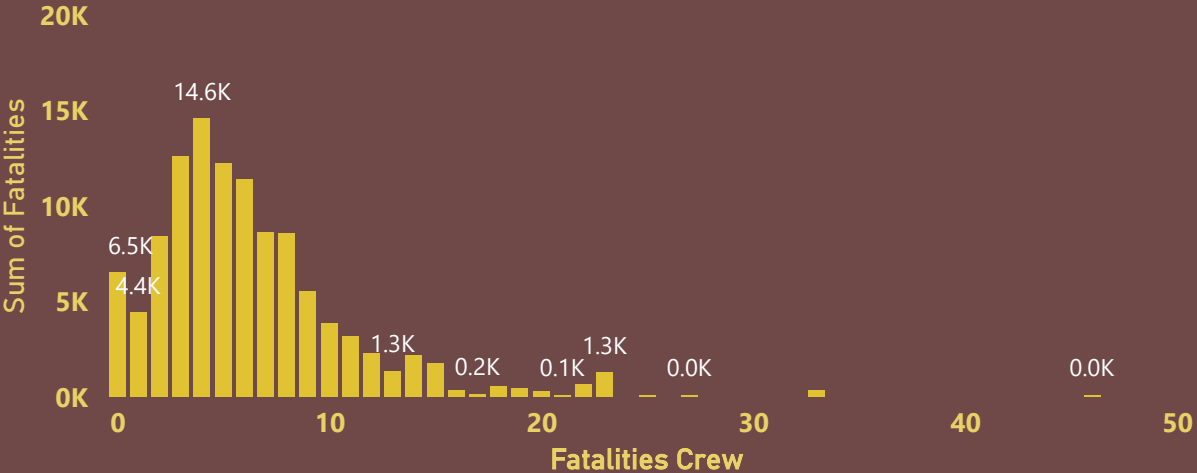
Fatalities by AC Type



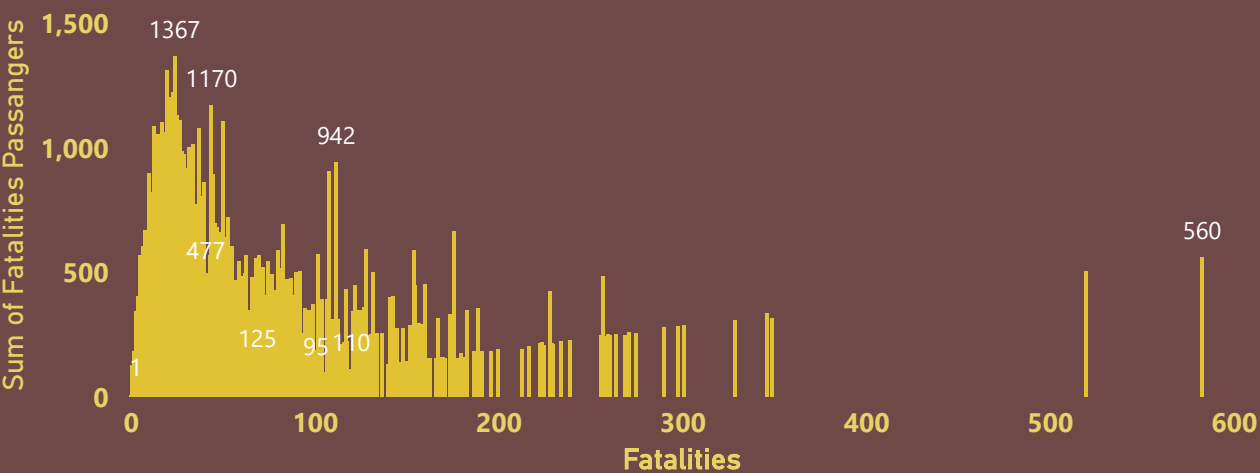
Fatalities by Registration



Fatalities by Fatalities Crew

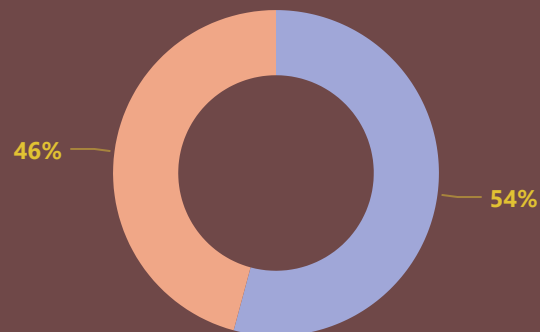


Fatalities Passangers by Fatalities



Temporal Analysis

Sum of Fatalities Passangers by Fatalities Crew



112K

Sum of Fatalities

17K

Sum of Fatalities Crew

155K

Sum of Aboard

91K

Sum of Fatalities Passa...

AC Type

All

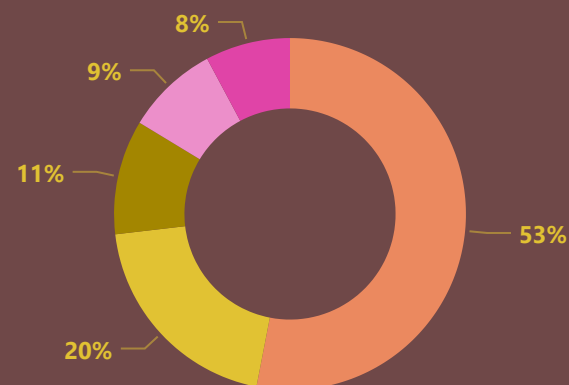
Location

All

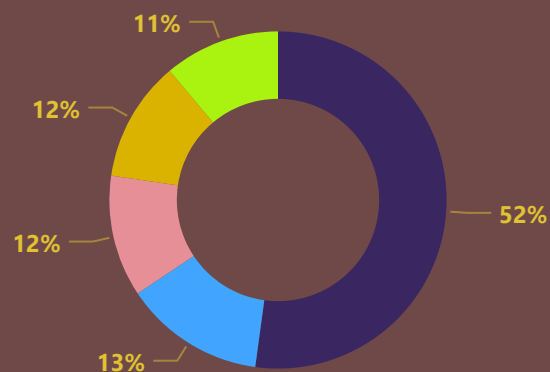
Year

All

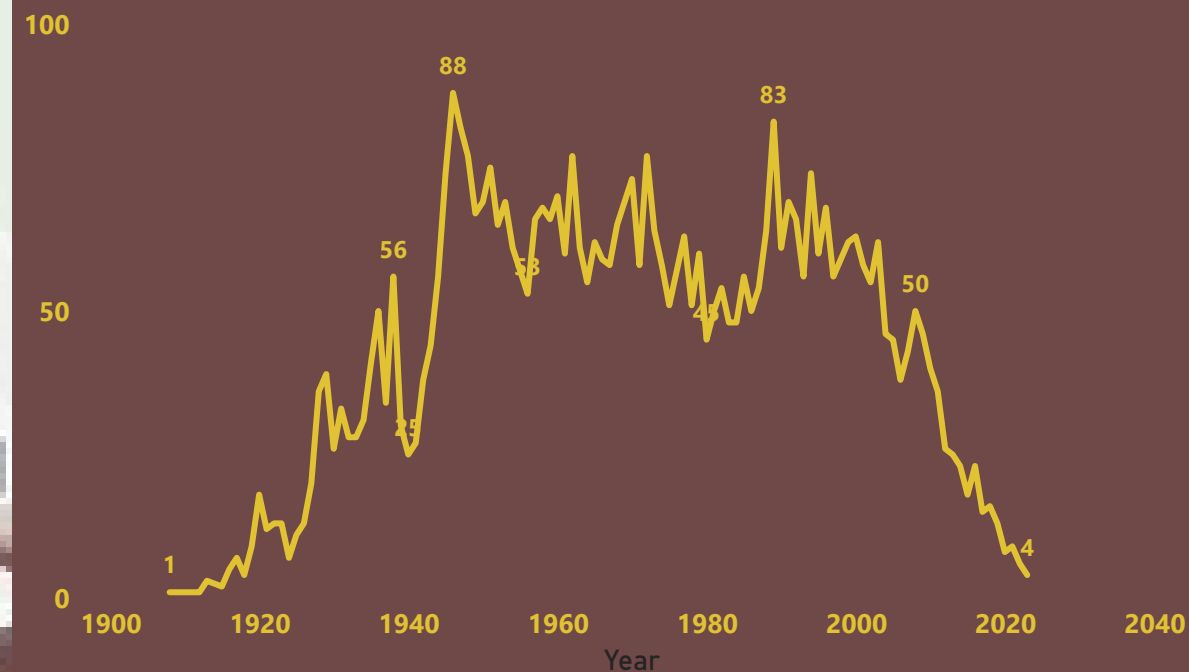
Sum of Fatalities by Operator



Sum of Fatalities by AC Type



Count of Location by Year



Geospatial Analysis

Location

- ☐ Atlantic Ocean
- ☐ Australia
- ☐ Bolivia
- ☐ Brazil

2254

Count of Operator

2404

Count of AC Type

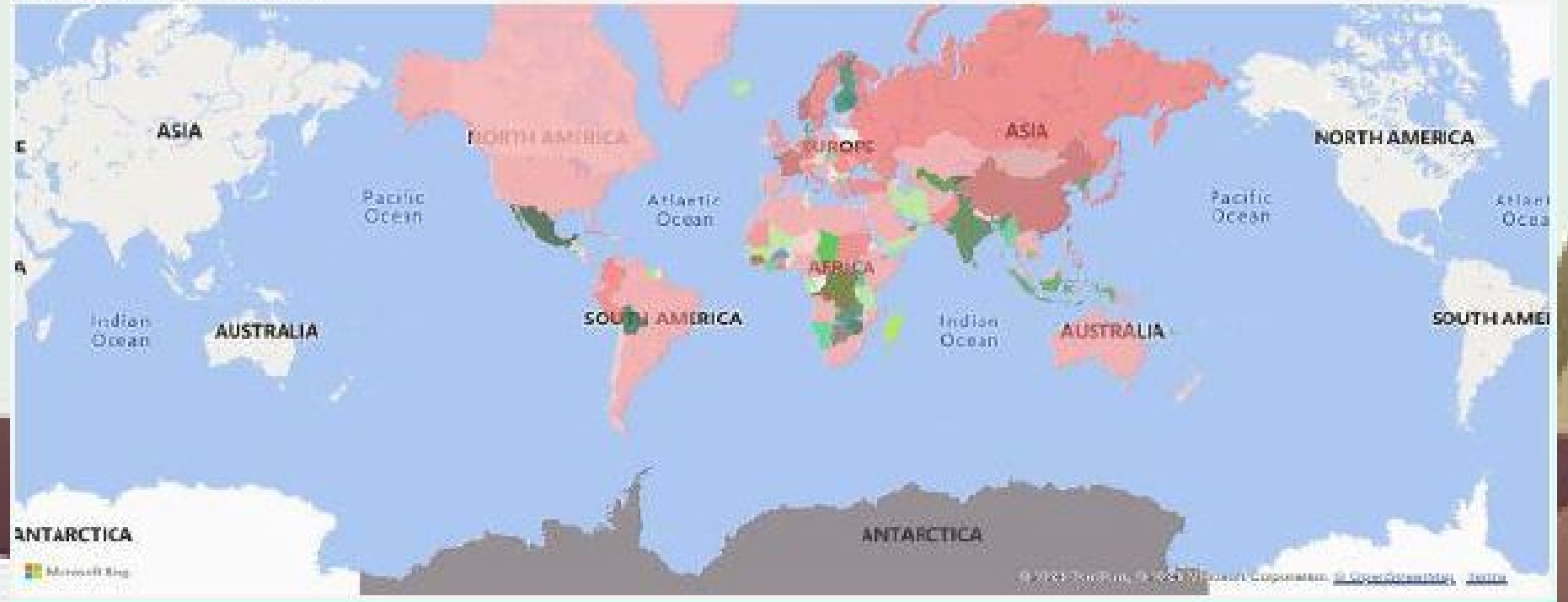
445

Count of Location

Operator

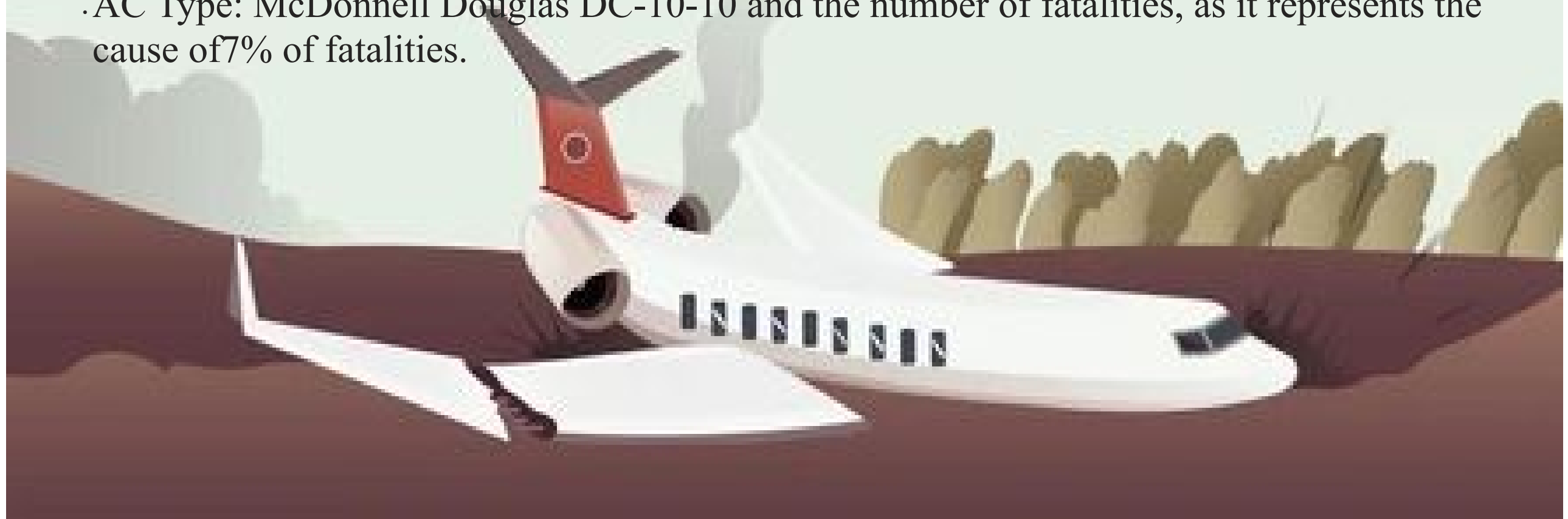
- ☐
- ☐ 46826/109
- ☐ A B Aerotransport
- ☐ Ākoda (India) Ltd

Country and Fatalities



Analysis Conclusions

- .The analysis included the percentage of crew (16%) and passenger (84%) fatalities, providing a deeper understanding of the distribution of fatalities within the aircraft.
- .Chicago O'Hare, Illinois was the highest airplane fatalities rate in the world with 271 individuals
- .The year 2001 was the highest airplane fatalities rate in the world.
- .AC Type: McDonnell Douglas DC-10-10 and the number of fatalities, as it represents the cause of 7% of fatalities.



Thank You

