Phase 1 Project on Aircraft Accident Analysis sept-2024

Aviation Accident Database Analysis for Risk Assessment

Oliver Seki
Meloseki

01 - Introduction

Data Source

Data Overview

Data Cleaning and Preparation

01 - Introduction

Project Objective: To analyze aviation accident data to determine the lowest-risk aircraft for a new aviation business venture

Data analysis helps uncover valuable insights from complex datasets

Tips

Analyzing data enables informed decision-making

Data Source

dataset contains records of aviation accidents and incidents
cluding details like event date, aircraft make, injury severity,
and more.

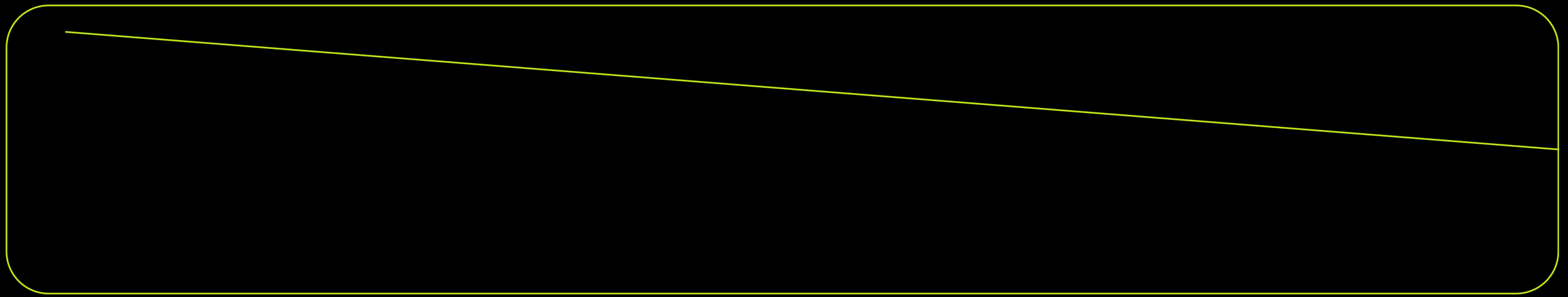
Dataset: Aviation Accident Database Synopses (Kaggle)

Link: Aviation Accident Database on Kaggle

Data Overview

Number of Records
:75,330 accidents

Event Date, Location, Country
Aircraft Make, Model, Injury Severity
Total Injuries (Fatal, Serious, Minor, Uninjured)
Weather Condition, Purpose of Flight



Data Cleaning and Preparation

Tools Used

Python (Pandas), Jupyter Notebook

Removed missing and irrelevant data

Imputed missing values where necessary (e.g., weather condition)

Converted date and numerical columns to correct data types

Data Analysis Approach

Key Analyses Performed:

Accident count by aircraft make and model
Severity analysis by injury type (fatal, serious, minor)
Correlation between weather conditions and accident outcomes
Trend analysis by year and purpose of flight

Visualizations

Bar charts, line graphs, and pivot tables for key insights

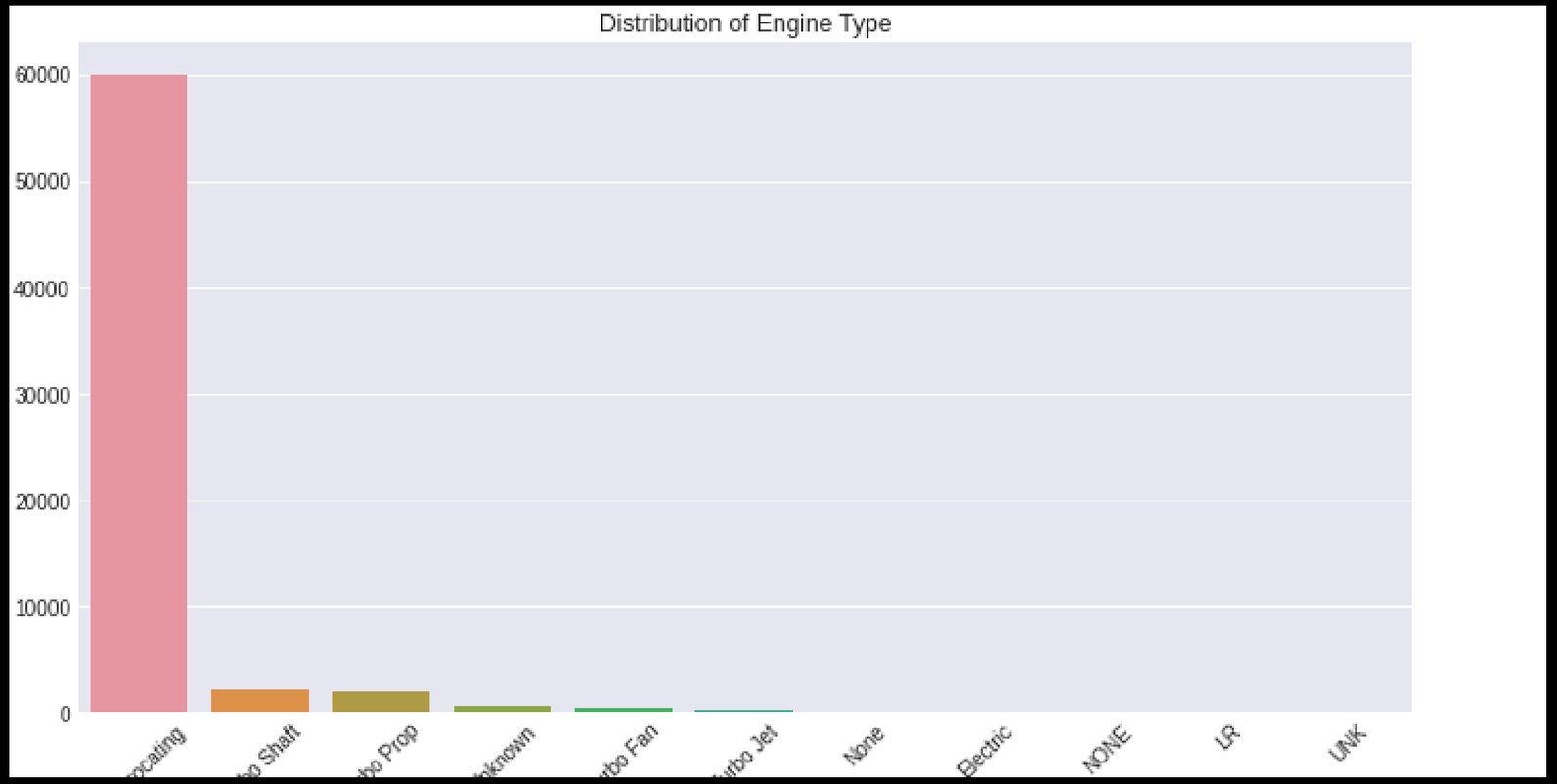
Key Findings

Aircraft Makes with Lowest Accident Risks:
[List of aircraft makes/models with fewer accidents]
Aircraft Makes with Highest Accident Risks:
[List of aircraft makes/models with most accidents]

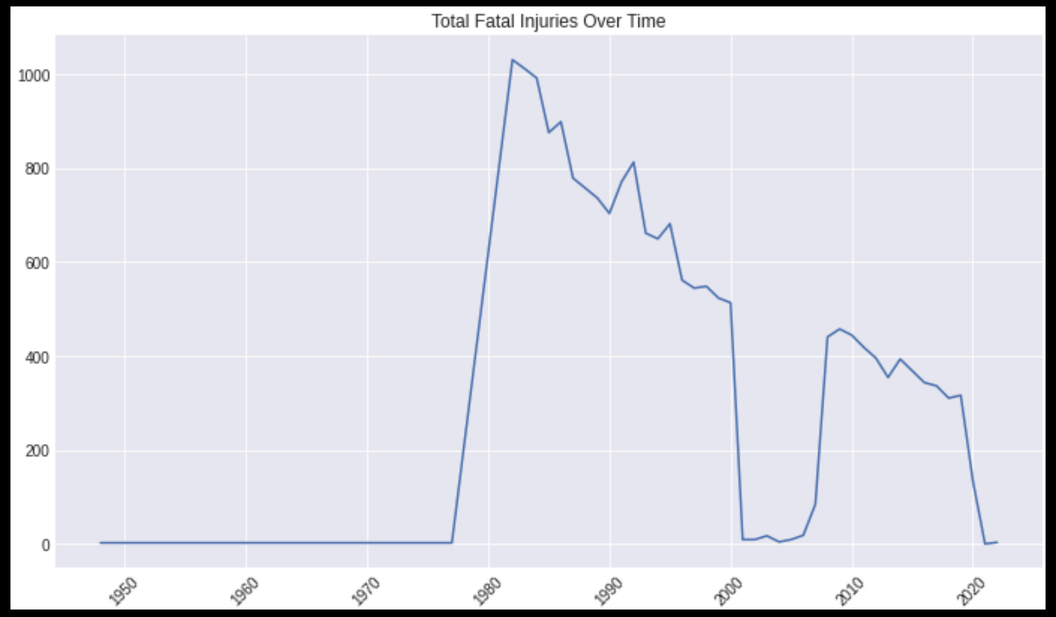
Key Factors Contributing to Accidents:
Weather (e.g., adverse conditions

Purpose of flight-(e.g., personal flights had higher risk)

Visualizations



Visualizations



Accident Count by Aircraft Make:
Include a bar graph showing the number of accidents for top aircraft makes.

Injury Severity by Aircraft Make:
Include a bar graph showing the breakdown of fatal, serious, and minor injuries by aircraft make.

04 - Conclusions

Summary of Insights:
Aircraft make and model are significant indicators of accident risk.
Weather conditions and flight purpose play critical roles in accident outcomes.
.

Further data collection and monitoring as the business expands into the aviation industry.

Implementing safety protocols for identified high-risk areas.

Next Steps:

Thanks

Sandra Haro