

The background features abstract, overlapping green geometric shapes in various shades, creating a modern and dynamic look. The shapes are primarily triangular and polygonal, with some areas appearing more translucent than others.

RISK ANALYSIS ON AVIATION.

INTRODUCTION.

This presentation will help show risk factors and the performance of various aircraft models.

Using a cleaned aviation dataset, we focus on fatality rates, accident purposes, and damage assessments to identify key insights.

Goals.

- ▶ Help understand which aircrafts are of the lowest risk.
- ▶ Assist the company make informed decision on which aircraft to purchase.

Methodology.

The dataset used is from the National Transportation Safety Board it contains data on aviation accidents from 1962 to 2023.

Data Cleaning:

Removed duplicates and null values in key columns (e.g., Make, Model). Standardized formats for dates and categorical fields . Filtered incomplete or irrelevant records .

Data analysis:

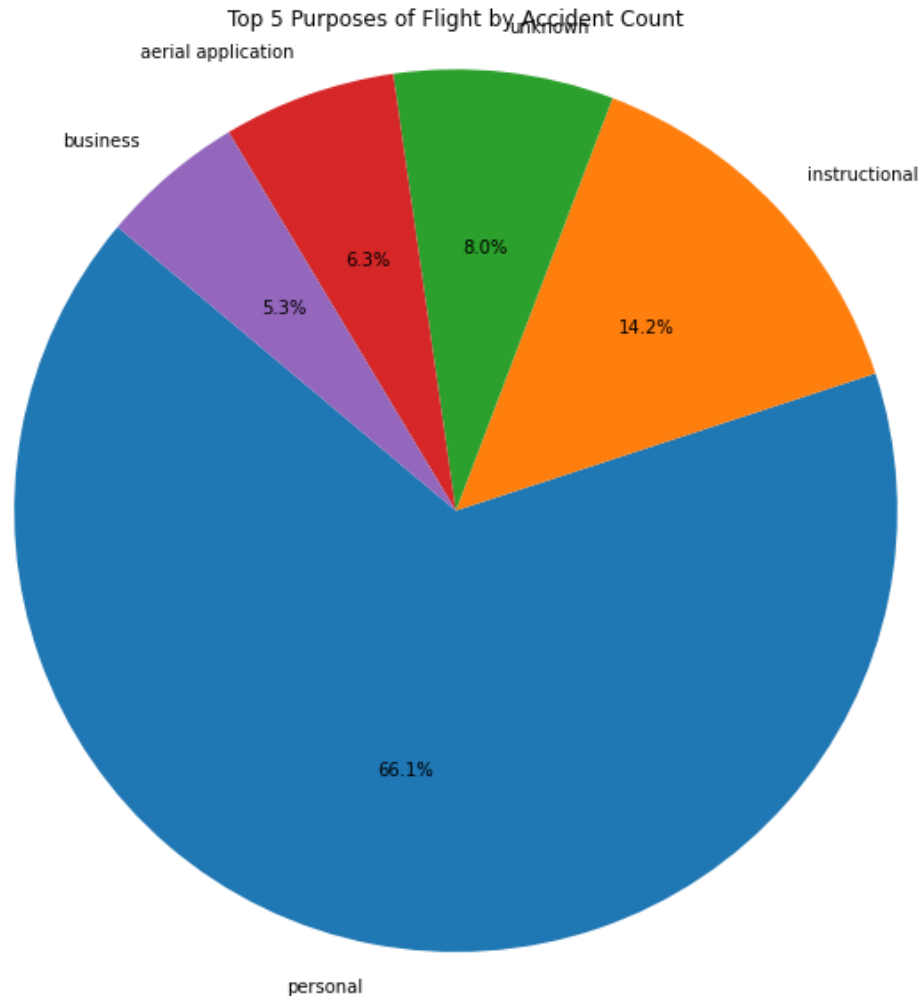
Created calculated fields : $\text{Fatalities _ Rate} = \text{Total Fatalities} / \text{Total Accidents}$
Grouped accidents by year, flight purpose.

Visualization Tools:

Used Python (pandas, seaborn, matplotlib) for initial analysis.

Visualized interactive dashboards using Tableau.

Top 5 Purposes of Flight by Accident Count.

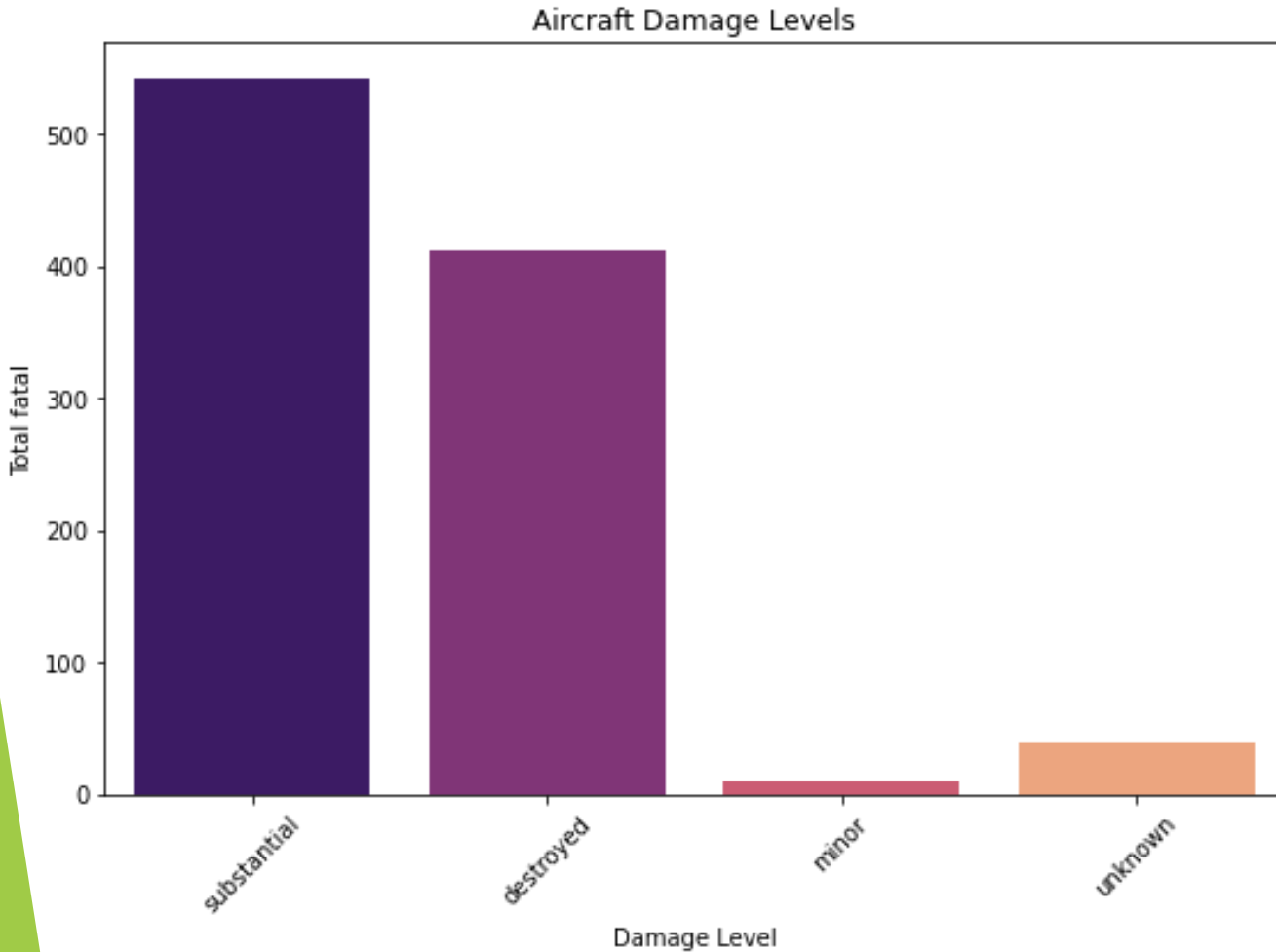


- This pie chart visualizes the top 5 purposes of flight associated with aviation accidents.

Key Insight:

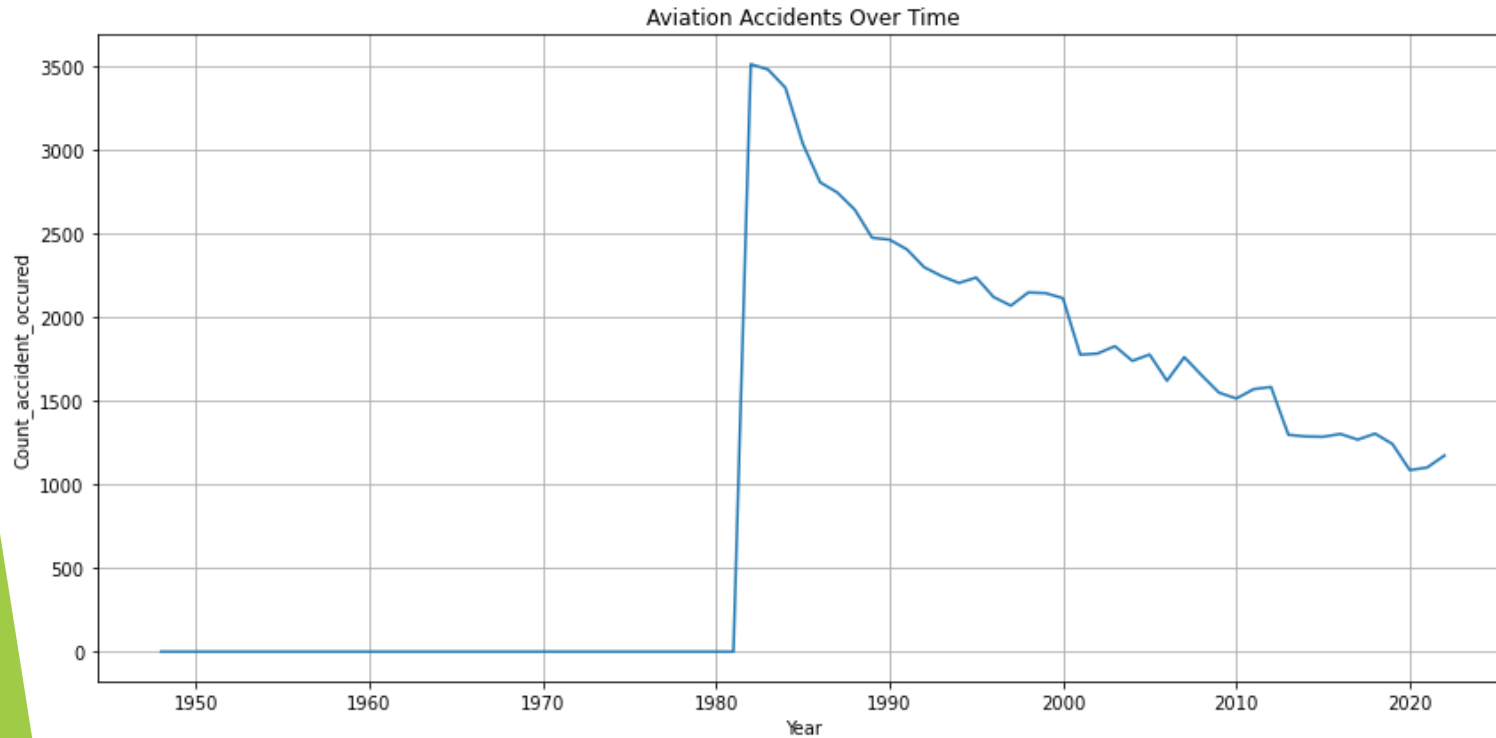
- Helps prioritize focus areas for safety measures.
- Personal flights have the highest accidents.

Aircraft Damage Levels vs Total Fatalities.



- This bar chart compares aircraft damage levels with total fatalities.
- Key Insight:**
- More severe damage levels correspond with higher fatalities.

Aviation Accidents Over Time



- This line graph displays the number of aviation accidents over the years.

Key Insight:

- Identify periods with increasing or decreasing trends in accident frequency.

Recommendations.

- ▶ Investigate years with spikes in accidents to identify causes.
- ▶ Prioritize safety protocols for high-risk flight purposes.
- ▶ Enhance structural integrity to reduce fatalities during crashes.
- ▶ Focus maintenance efforts on aircraft with higher fatality rates.