Aircraft Risk Analysis

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Project Overview

- Goal: Identify low-risk aircraft for new aviation division

- Data: NTSB Accident Data (1962–2023)

- Focus: Landing accidents, overall safety records

Business Problem

- Which aircraft models have the lowest landing accident rates?

- How does flight phase affect accident frequency?

- How does weather impact accident risk?

Data Preparation

- Dropped rows with missing critical fields

- Filtered civil aviation accidents

- Focused on Part 91 and Part 121 operations

- Selected key columns: Aircraft, Flight Phase, Weather, Injury Severity

Exploratory Data Analysis

- Analyzed accident counts by aircraft model

- Examined accidents by flight phase

- Evaluated weather conditions impact

Key Insights

• Some aircraft models have consistently lower accident rates

• Landings account for a high percentage of accidents

• Poor weather significantly increases accident likelihood

Recommendations

• Prioritize aircraft models with low historical landing accident rates

• Emphasize pilot training for landing procedures

• Invest in aircraft equipped with advanced landing and weather tech

Conclusion

- Data-driven aircraft selection will minimize operational risks

- Build passenger and client trust

- Support safe and sustainable business growth

Thank You!

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