Aviation Accident Risk Presentation

Phase 1 Data Analysis Project

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Overview

- - Explored over 80,000 aviation accident records from the U.S. NTSB
- - Cleaned and analyzed data in Python; visualized in Tableau
- - Built an interactive dashboard focused on:
- • Injury severity
- • Phase of flight
- • Damage levels
- • Accident locations
- - Objective: Help stakeholders identify risk patterns and support aviation safety decisions

Business Understanding

- - Aviation incidents impact safety, operations, and compliance
- - Airlines and aviation authorities must understand where and why accidents happen
- - Insights on injury patterns, aircraft damage, and flight phase risk can improve:
- • Training procedures
- • Airport safety operations
- • Maintenance focus

Data Understanding

- - Dataset: National Transportation Safety Board (NTSB) aviation accident records
- - Format: CSV, ~80,000+ entries
- - Key columns:
- • Broad.phase.of.flight
- • Injury.Category
- • Aircraft.damage
- • Location
- • Make
- • Event.Date
- - Cleaned data using Pandas (handled nulls, selected top categories, filtered out irrelevant rows)

Data Analysis

- - Landing is the most accident-prone phase, followed by cruise and maneuvering
- - Substantial damage is the most common aircraft outcome
- - Anchorage, Fairbanks, Miami top the list of high-incident locations
- - Fatal injuries occur most during approach and landing phases
- - Heatmap shows how injury severity varies across all flight phases

Recommendations

- - Focus safety initiatives and drills on approach and landing
- - Prioritize inspections on aircraft models with higher accident rates
- - Reevaluate operational risk in high-incident areas like Alaska
- - Share interactive dashboard with operational and safety teams

Thank You

- 😊 I'm happy to answer any questions or explore the dashboard below

PROJECT DASHBOARD | Tableau Public