AviData-Analytics

Public

1 Branch 0 Tags Go to file t Go to file Add file Code

FAITHKAMANDE Added Powerpoint

d856bd4 · 5 minutes ago 34 Commits

Aviation_Data	Added cleaned data copy	yesterday
.gitignore	Added .gitignore	4 days ago
Aviadata Presenta...	Added Powerpoint	5 minutes ago
NoteBook.ipynb	Added Powerpoint	5 minutes ago
README.md	Updated README file	3 hours ago

README

AviData-Analytics

About

A data-driven project analyzing aviation accident data (1962–2023) to identify low-risk aircraft models and inform strategic business decisions.

Readme
Activity
0 stars
1 watching
0 forks

Releases

No releases published
Create a new release

Packages

No packages published
Publish your first package

Description

The Aim of this project is to analyze aviation accident data to identify low-risk aircraft for commercial and private ventures. This project focuses on data cleaning, imputation, and visualization of National Transportation Safety Board (NTSB) accident records, enabling data-driven recommendations for expanding into the aviation industry

The dataset (provided in the Aviation_data folder) is sourced from the National Transportation Safety Board (NTSB) accident records. It includes:

- NTSB accident data from 1962 to 2023
- Contains fields such as: date, aircraft make , model, location, and descriptions of the accidents.

Table of Contents

Languages

- **Jupyter Notebook** 100.0%

1. Project Overview

Our company is diversifying into new industries, specifically aviation, but needs clarity on potential risks associated with different aircraft.

This repository demonstrates:

- Data Cleaning & Imputation: Handling incomplete or inconsistent aviation records.
- Exploratory Data Analysis (EDA): Identifying patterns in accidents, causes, and outcomes.
- Interactive Visualizations: Building dashboards to communicate insights to non-technical stakeholders.
- Strategic Recommendations: Advising on which aircraft to purchase based on risk profiles

2. Business Context

Goal: Determine which aircraft present the lowest risk, allowing your organization to invest wisely in commercial and private aviation enterprises. Key Stakeholder:

- Decision makers in the new aviation division
- Investors seeking actionable insights for risk mitigation
- Operations and safety teams focused on improving maintenance and training protocols

3. Data

The dataset (found in the Aviation_data folder) is sourced from the National Transportation Safety Board (NTSB) and covers civil aviation accidents from 1962 to 2023, including:

- Aircraft type ,make and model
- Accident date and location
- Accident severity and contributing factors

4. Key Components

Data Cleaning & Imputation

- Handling missing values
- Dealing with duplicates
- Correcting data types
- standardizing the date formarts

Analysis & Modeling

- Summaries of accident frequency and severity
- Exploration of risk factors across different aircraft types

Interactive Dashboards

- Visualize aggregated metrics and trends
- Enable filtering by aircraft category, or risk level

Business Recommendations

- Highlight specific aircraft types/models with lower incident rates
- Outline strategies for safer operations and maintenance

5. Getting Started

- Clone the repository
- Create a virtual environment
- Install required packages

6. Project Structure

Aviation Analytics

- data
- notebook content
- 1.data_cleaning
- 2.Data type manipulation
- 3.EDA
- 4.Visulaization
- 5.Recommendations.

7. Business Recommendations

- Airplanes are the best option to invest especially in commercial use.
- Helicopters could be considered for private use.

- Avoid smaller aircraft unless equipped with advanced safety features.
- Prioritize aircraft with strong safety measures during landing and takeoff.