PROJECT 1 PROPOSAL

"AIR TRAFFIC ANALYTICS: NAVIGATING PERFORMANCE AND DELAY FACTORS IN US DOMESTIC FLIGHTS"

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Project Background

The efficiency of air travel is a vital aspect of contemporary transportation networks, affecting millions of travelers, enterprises, and the national economy. Large-scale data on domestic flight performance is routinely gathered by the Department of Transportation. Through the development of an extensive visualization dashboard, this project seeks to uncover the insights concealed inside this huge information. This will make it possible for interested parties to comprehend patterns and trends in domestic flights run by major airlines, including delays, cancellations, and diversions, as well as on-time performance.

Project Goals

The primary goal is to create an interactive dashboard for analyzing extensive domestic flight data, including major airlines' on-time performance, delays, cancellations, and diversions. It seeks to uncover hidden patterns and trends, enabling users to identify recurring issues, understand cancellation reasons, and recognize overall performance trends. Categorizing delays based on factors like weather and technical issues is crucial for addressing challenges in the air travel system. The dashboard will evaluate the overall effectiveness of U.S. air travel by assessing punctuality, disruption frequency, and airline reliability, benefiting stakeholders such as airlines, travelers, and policymakers.

Dataset

The Bureau of Transportation Statistics, which has been measuring flight performance since June 2003, provided the dataset for this study. It contains comprehensive records on the reasons behind flight delays in addition to data on flights that were delayed, canceled, diverted, and on schedule. The Department of Transportation publishes the monthly Air Travel Consumer Report along with this data, which is open to the public. We use the dataset created for the Statistical Computing Statistical Graphics 2009 Data Expo for this project because it provides a thorough analysis of the performance of air travel in the United States.

Dataset 1: https://www.kaggle.com/datasets/giovamata/airlinedelaycauses?resource=download
Dataset 2: https://www.kaggle.com/datasets/patrickzel/flight-delay-and-cancellation-dataset-2019-2023

Sources

https://www.kaggle.com/
https://www.bts.gov/