Project Title: Flight Team

Project Summary:

For our project, we are using the 2015 Flight Details and Cancellations dataset from The U.S. Department of Transportation's (DOT) Bureau of Transportation Statistics: https://www.kaggle.com/datasets/usdot/flight-delays. We will create a website that will allow users to use visualizations of historical flight data from 2015 to help make informed decisions about which airlines to fly with for upcoming trips. Our website will have a performance graph, where we rate the performance of each airline based on delay and cancellation rates. We will also have a comparison tool that allows users to select an airline and compare its pricing and delay/cancel information with another airline. By the end of this analysis, travelers will be able to determine which airline is the most reliable to fly with to minimize potential delays.

Description: Currently, airline and flight apps only alert users last-minute of when a flight is canceled or delayed. However, our application allows users to look at historical data to make decisions ahead of time of what airline to fly with to minimize the likelihood of a cancellation or delay. Travelers currently don't have a tool to compare the reliability of airlines on delays and cancellations, so this application aims to fill this purpose.

Functionality: We aim to have several features the user can access with the project functionality. Firstly, we will create a main screen with a leaderboard of airlines ranked by performance being which airline has the least delays overall. In addition to this, we will also implement filters that the user can use to specify time frames such as months or weeks as well as specify the specific airline that they would like to see. We plan to add a dashboard feature with monthly trends and comparisons for certain airlines and a recommendation for a certain airline based on delays that would occur near that time. Finally we will implement an interactive chart and graph showcasing the overall data and other necessary functionality.

Usefulness: Our application can be useful for two main user groups: airlines and travelers. Airline companies can utilize our application to assess their own performance when it comes to their flights being delayed vs canceled. On the other hand, travelers can use the dashboard to compare the performance between airlines and make informed decisions on which airline is the right choice. Often travelers, ourselves included, will choose the cheapest flight to get from point A to point B, but in the event of a delay or cancellation, there are other additional costs that will pile on top. This can include, hotel, road transportation, and storage costs. Our application will provide a scoring metric for specific flights and airlines based on how often they are delayed or canceled that can be beneficial in helping consumers make this decision. FlightStats is a website that provides metrics on airline stats, but our application differs from this by providing a ranking of airlines and allowing you to see a comprehensive visualization of trends of delays and cancellations of flights by airline.

Realness:
We are using the Kaggle “Flight Delays” dataset for this application. This dataset has metrics on airlines, customer satisfaction, arrival and departure delays, arrival and departure cancellations, flight distance, total number of operated flights, and flight routes. These are some of the metrics that we can use to build a dashboard that can analyze airline flights to give our users a comprehensive overview of the performance of these flights. These performance metrics will be mainly centered around delays and cancellation and the destinations of the flights.

Work Distribution:
Data Cleaning and Analysis: [iramesh2]
Backend Development and Database Management: [jnama2]
Front-end Development (UI/UX): [cfern2]
Testing and Quality Assurance: [jayaw2]

Mock Up