Web Dashboard with Plotly and Dash

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Introduction

This application creates an interactive dashboard on Web using Python's dash and plotly. The purpose of the dashboard is to visualize data on US domestic airline flights performance reports using the “US airline reporting carrier on-time performance dataset” from Data Asset Exchange. Airlines can utilize this dashboard to analyze their and other reporting airlines' performance so that they can improve flight reliability, and thereby improving customer loyalty.

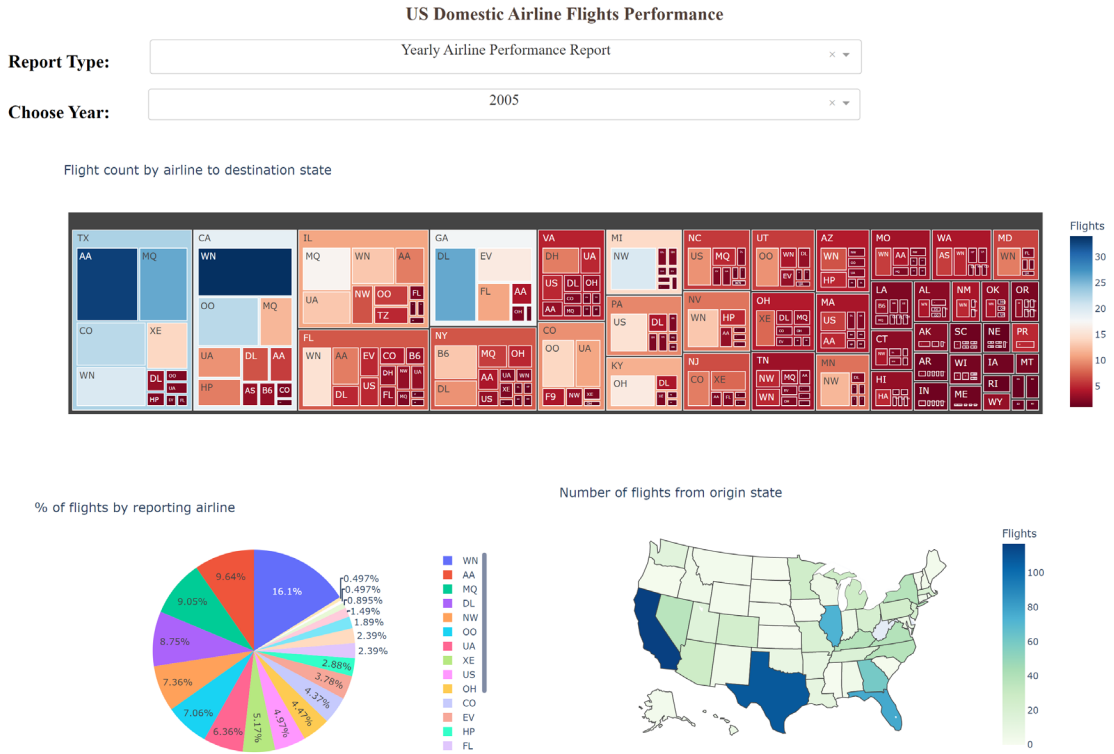
Dataset

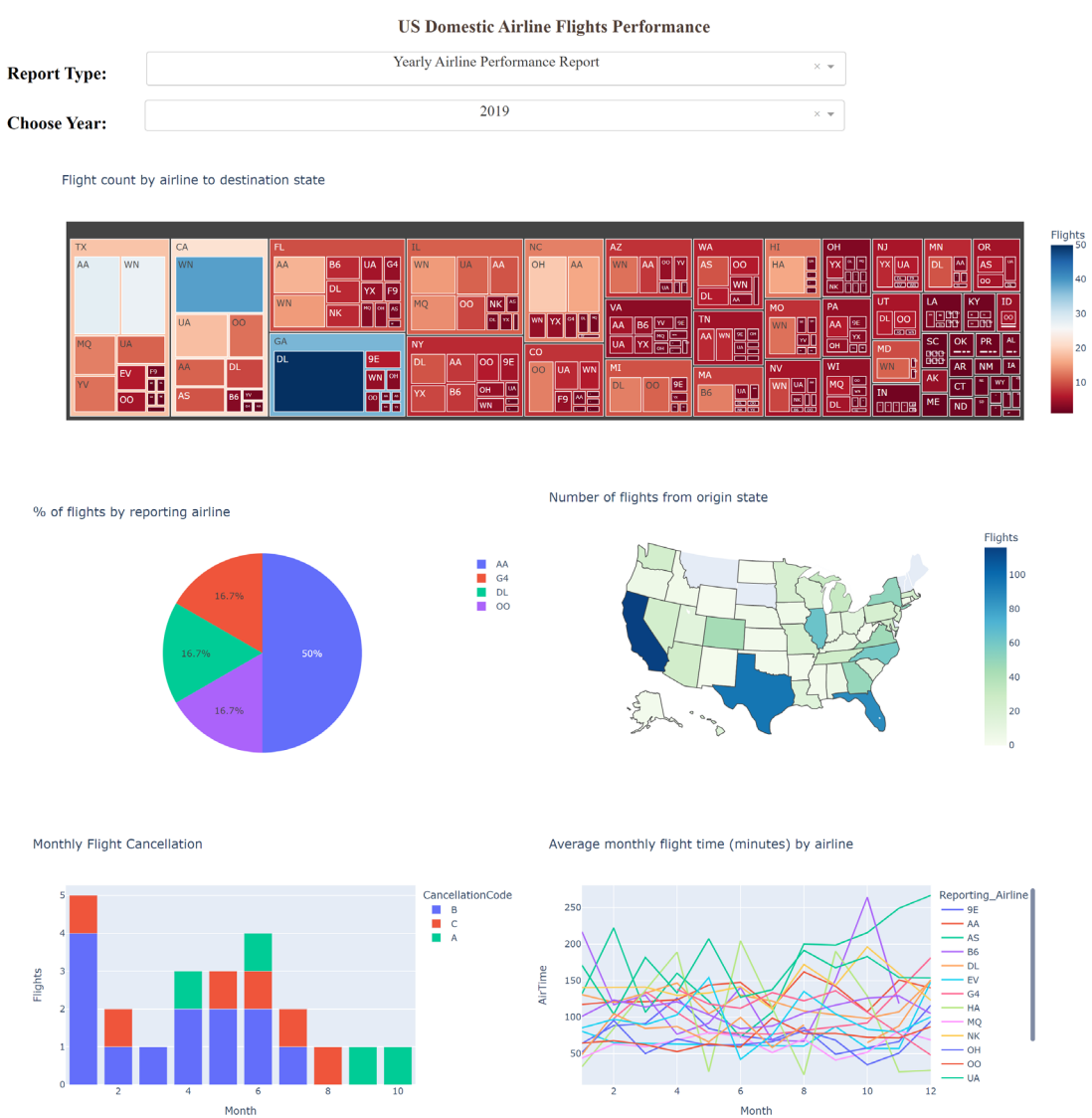
The Reporting Carrier On-Time Performance Dataset contains information on approximately 200 million domestic US flights (2005-2019) reported to the United States Bureau of Transportation Statistics. The dataset contains basic information about each flight (such as date, time, departure airport, arrival airport) and, if applicable, the amount of time the flight was delayed and information about the reason for the delay. This dataset can be used to predict the likelihood of a flight arriving on time.

Application

- Import required libraries
- Create a dash application
- Clear the layout and do not display exception till callback gets executed
- Read the airline data into pandas dataframe
- Create a list of “years”
- Define functions for computing graph data for creating yearly airline performance report
- Define application layout
- Define callback function
- Add computation to callback function and return graph
- Run the app (code is in the folder)

Performance Report (2005 vs. 2019)





Delay Report (2005 vs. 2019)