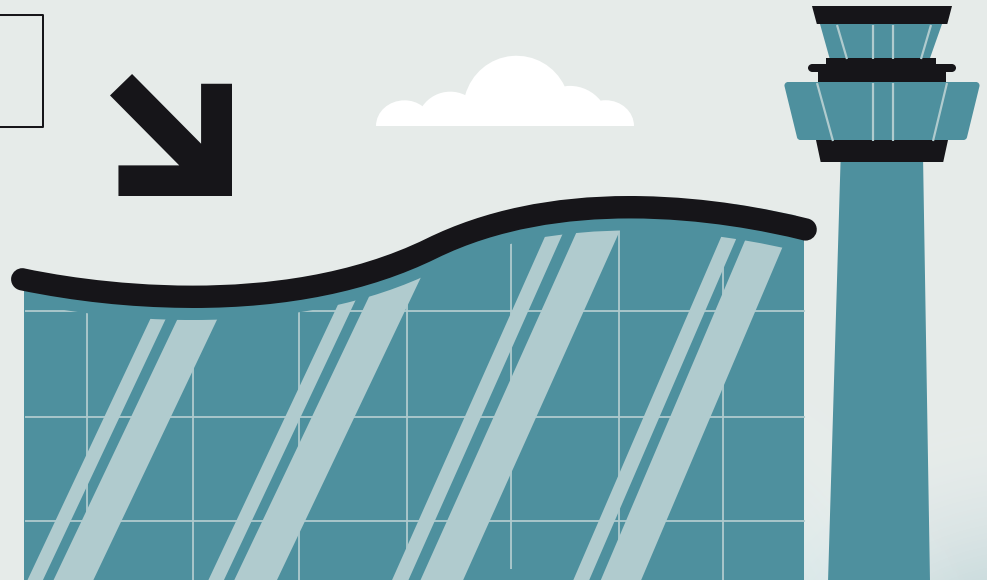
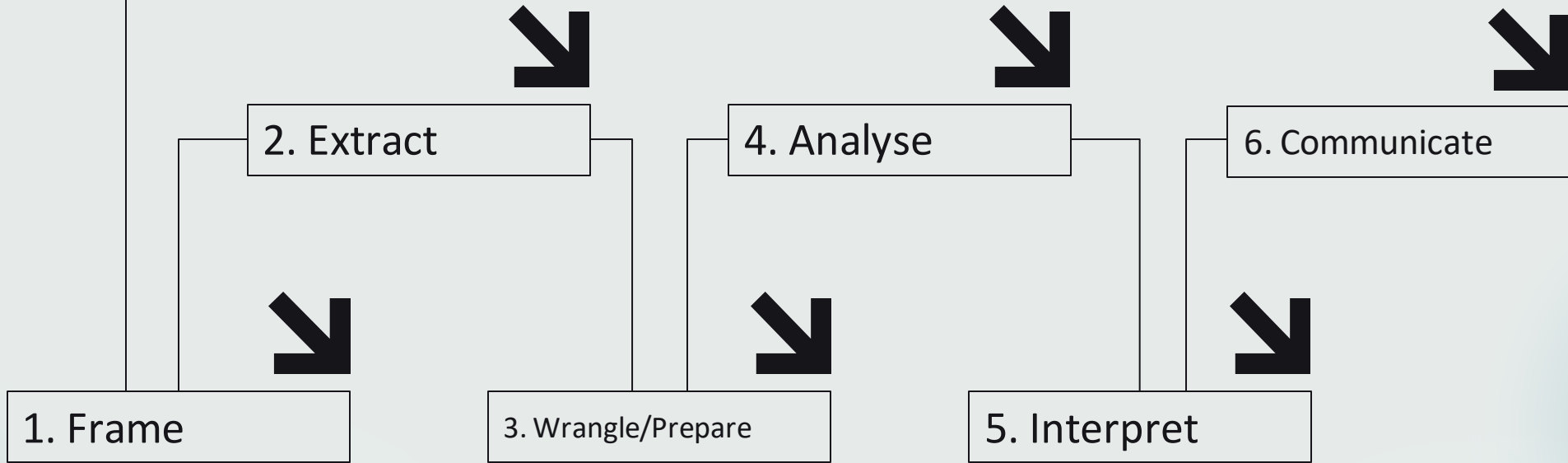


Flight Delays Analysis

M. Farhan Rais
DAS 311



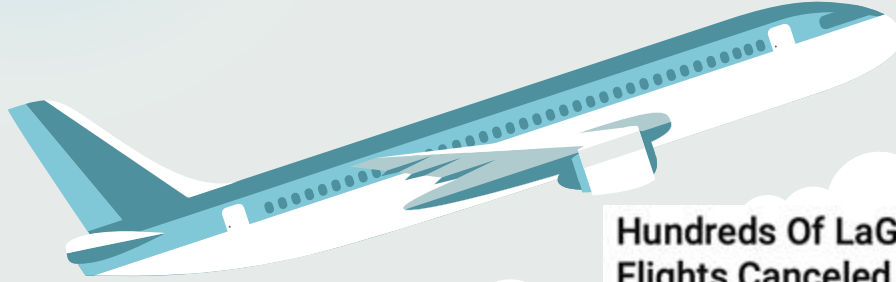
Contents/Data Analytics Workflow





Frame

01



Background



Flight delays at JFK Airport

<https://patch.com/new-york/queens/more-80-laguardia-flights-canceled-nearly-100-delayed>

Hundreds Of LaGuardia, JFK Flights Canceled, Delayed

LaGuardia saw more than 175 flights delayed Friday morning as snow descended on New York City, according to FlightAware.



Callie Leesch, Patch Staff

Posted Fri, Jan 19, 2024 at 11:03 am ET | Updated Fri, Jan 19, 2024 at 11:57 am ET





Problem Statement

JFK Airport is experiencing high volumes of flight delays. Department of Transport has put together data of domestic flight information for in-house analysts.

How might the **DoT data analyst** use **flight data** to analyse trends in flight delays and make recommendations to JFK Airport management in order to **improve flight departure times**?





02

Extract

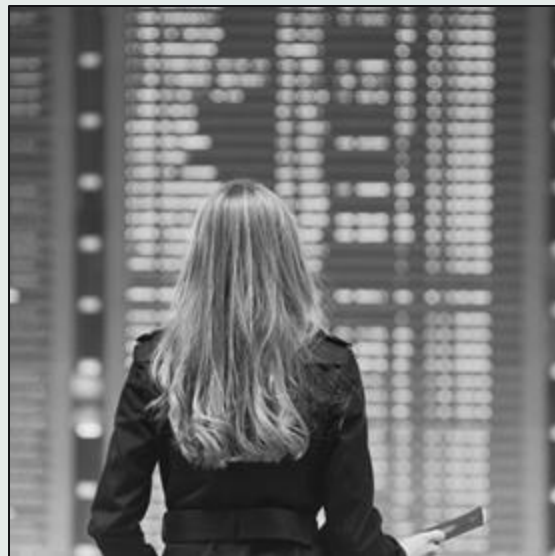
Kaggle Dataset

Flight Status Prediction

- Flight information including cancellation and delays by airline in **2022** (4,078,318 rows).
- [Python] Filtered data to flights originating from **JFK Airport** (79,127 rows).

<https://www.kaggle.com/datasets/robikscube/flight-delay-dataset-20182022?select=readme.md>

<https://www.transtats.bts.gov/Homepage.asp>





03



Wrangle/Prepare

Wrangle/Prepare

Steps taken:

- Removed unnecessary/redundant columns
- Removed empty rows (with no time info)
- Inserted new columns (split info, aggregated info)



04

Analyse



25.9%

20,524



Flights delayed in 2022 (>15 mins)

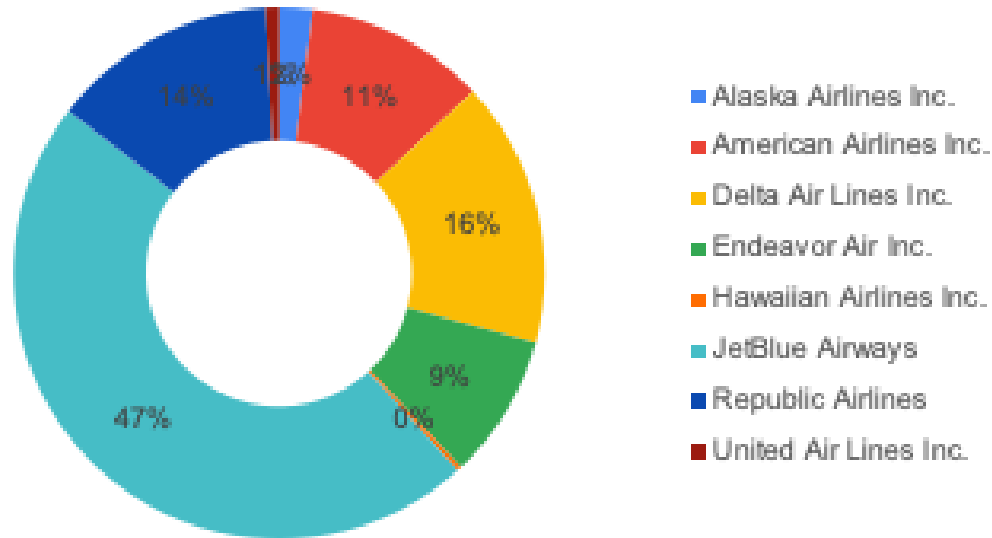




05

Interpret

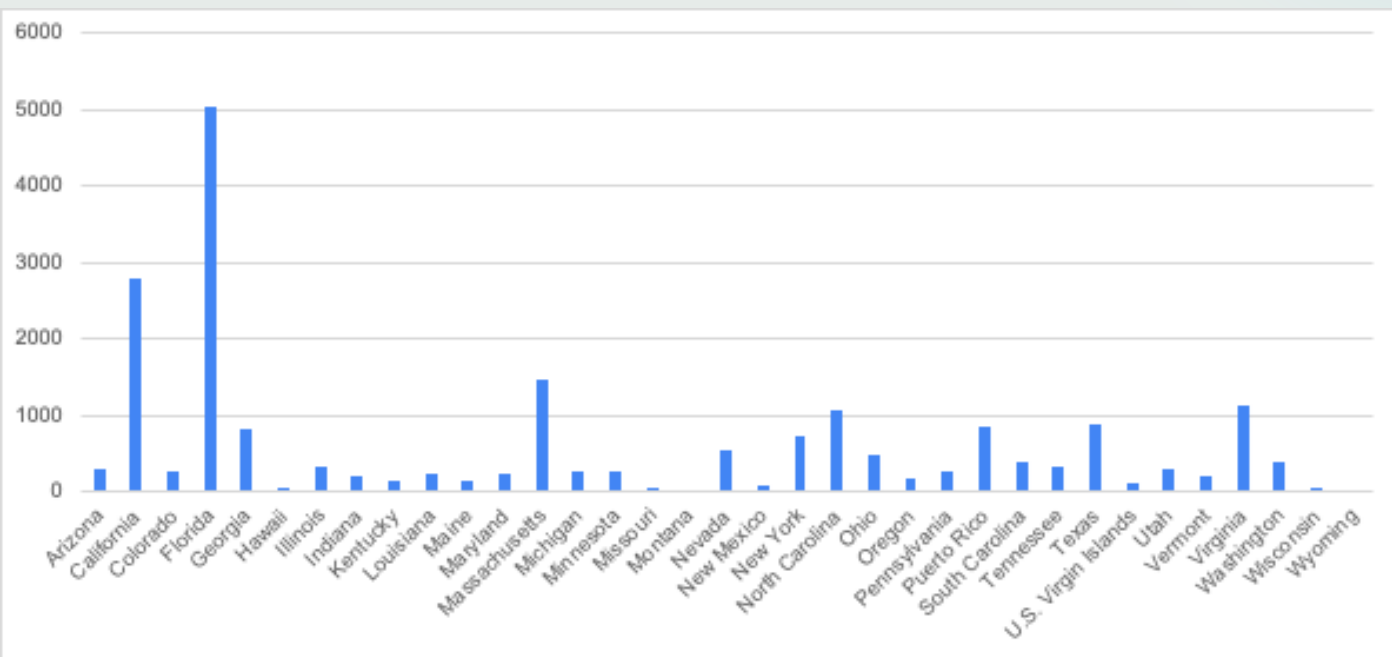
Airlines with Flight Delays



Top 3 Airlines

1. JetBlue Airways (47%)
2. Delta Air Lines (16%)
3. Republic Airlines (14%)

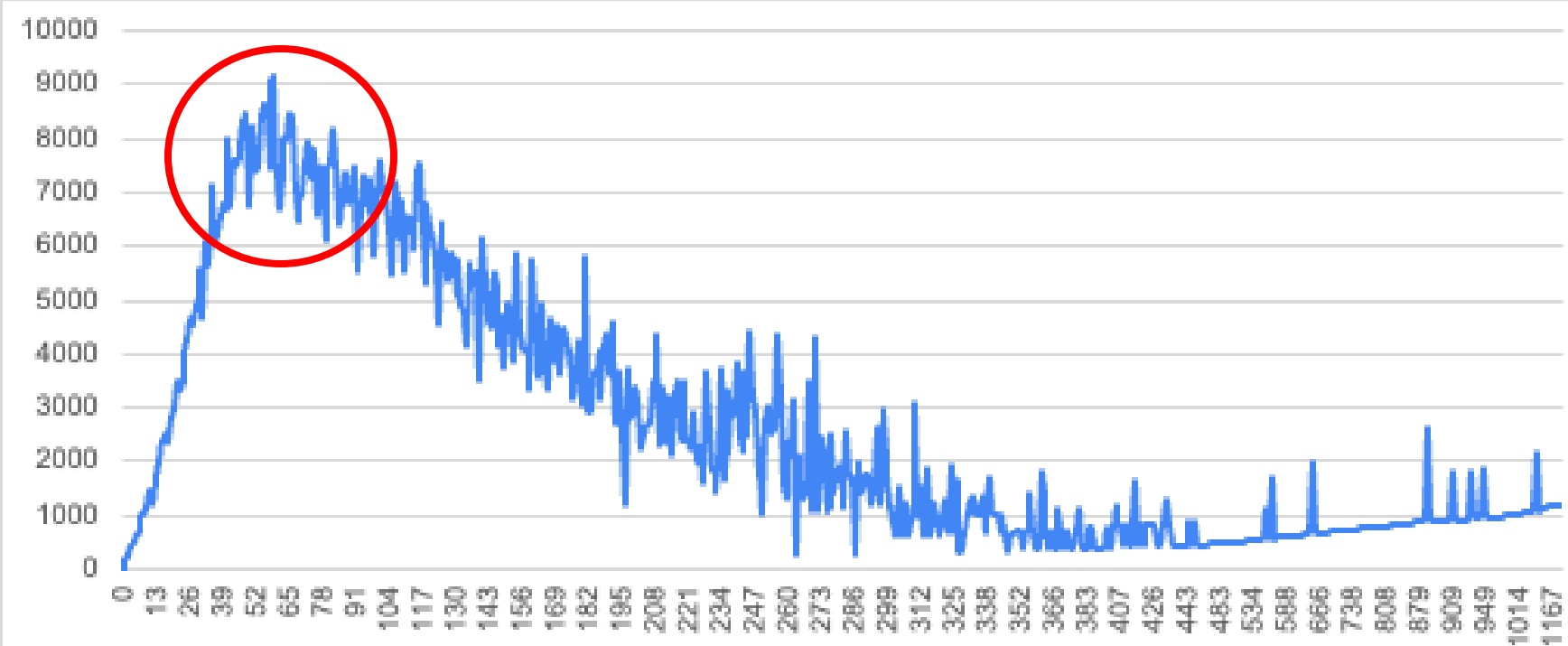
Delays by Destination



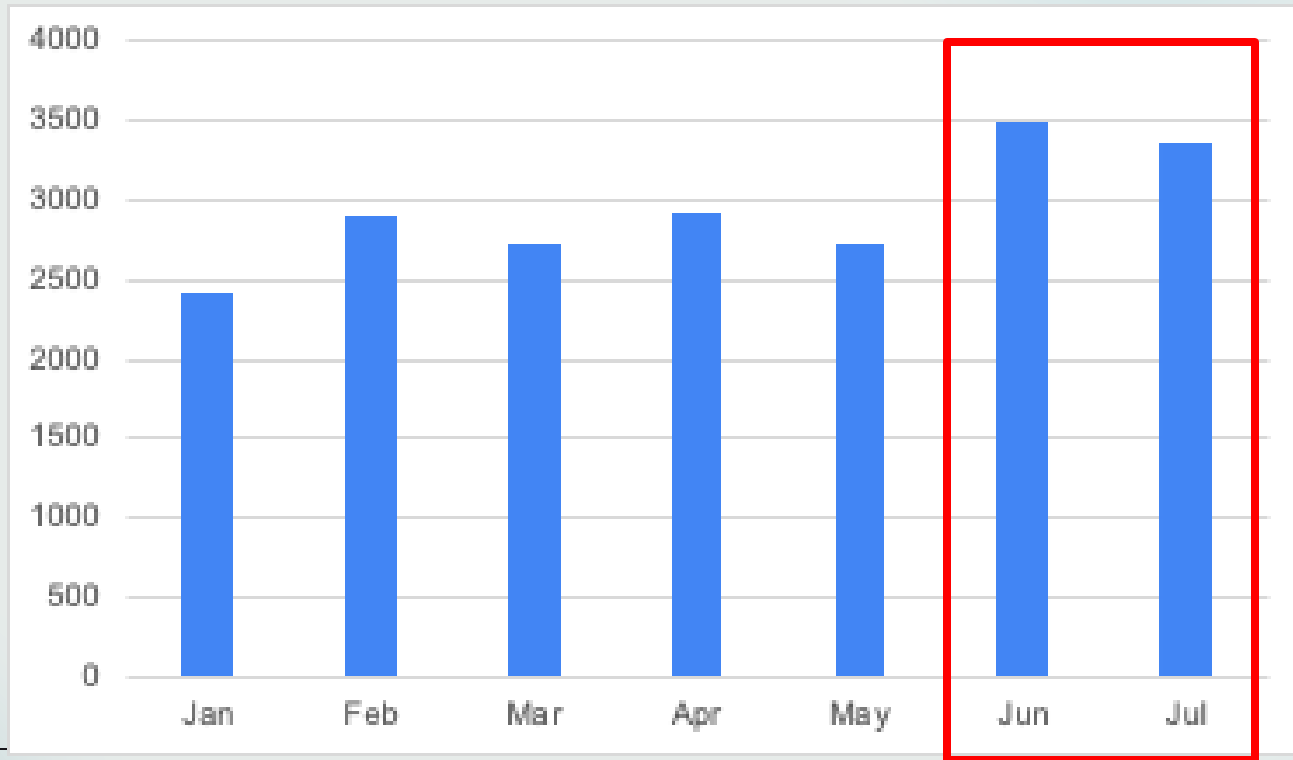
Top 3 Destinations

1. Florida
2. California
3. Massachusetts

Delay Time Distribution



Delay Distribution by Months





06



Communicate

Recommendations



Airline

Introduce fines for delay frequency



Destination

Customer advisory



Seasonality

Increase airport manpower

Future Work



Further Study

Dataset of other airports and years



Prediction

Data science prediction model

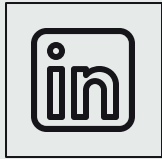
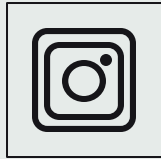
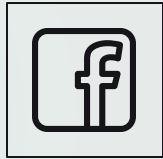


**Short cuts make
long delays.**

J. R. R. Tolkien

Thank You

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<https://generalassemb.ly/students>



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