

The Metropolitan Transportation Authority

Exploratory Data Analysis (EDA)



Outline



Outline

- Introduction
- Backstory
- Design
- Data set
- Algorithm
- Tools
- Analysis result

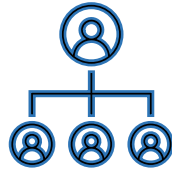
Introduction



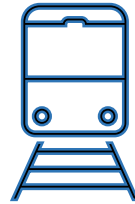
Introduction



The growth of
population in
USA



The government
of NY found a
solution



Established the
metro since
1965



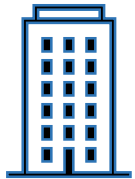
The metro
suffering from
some issues



Tring to solve it
using Data
Science

Backstory

Backstory



Consultant
company
working in
solutions by data
science



The company
has received an
email



The government
institution works
on improving
New York City



Organize the
overwhelmed
stations specially
during rush
hours



Reach the
required
satisfaction
levels

Design



Design

The data set in this project is taken from the MTA website.

This data set presents the complete status of the metro in New York City.

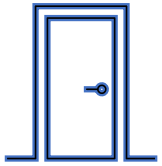
Data Set

Data Set

The used data from MTA data set
are 3 months of 2021
May, June, July



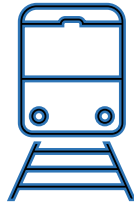
Data Set



Turnstile



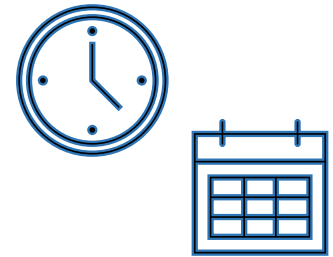
Stations



Line names



Number of
entries and exits



Date and Time

Algorithm



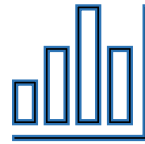
Algorithm



Explore data



Clean data



Plot data



Write queries



Provide a
solution

Tools



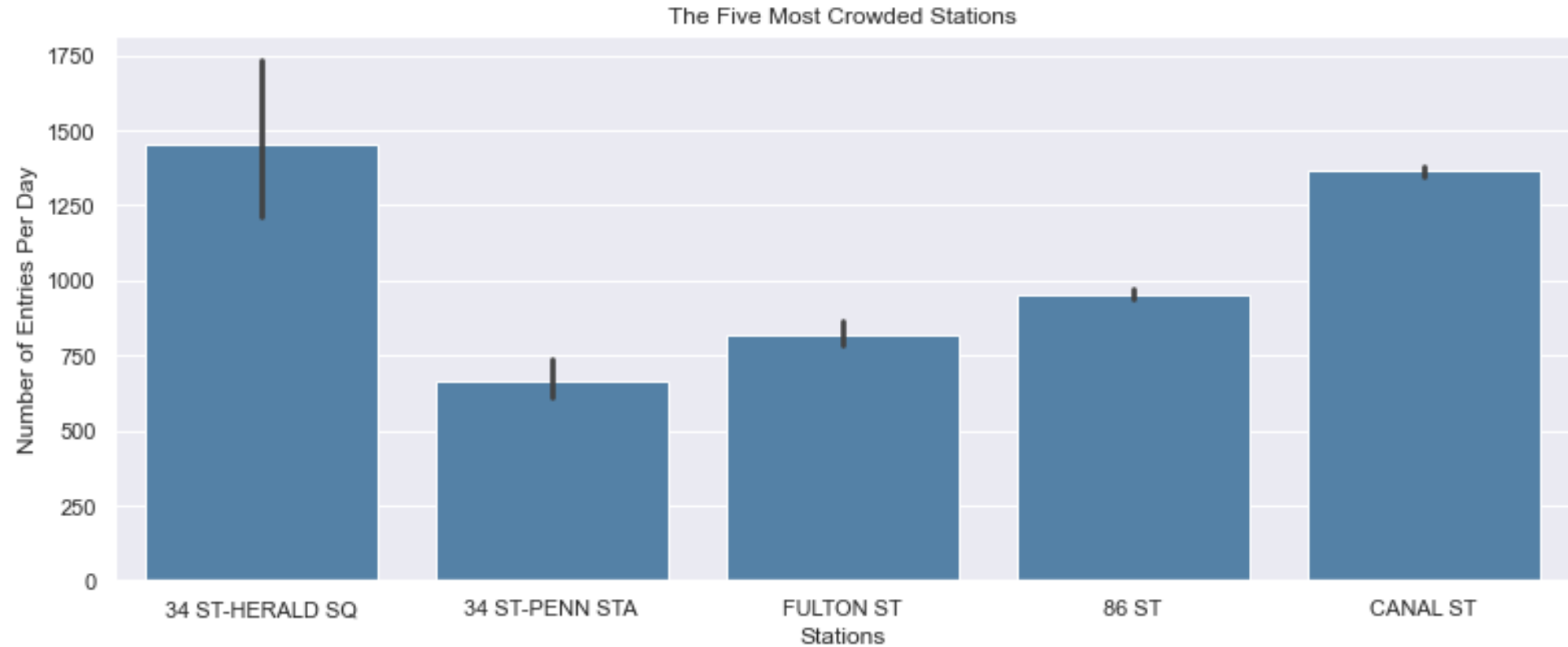
Tools

- Python NumPy
- Python Pandas
- Python Time
- Python Date
- Python Seaborn
- Python matplotlib
- SQLAlchemy
- Python Word Cloud



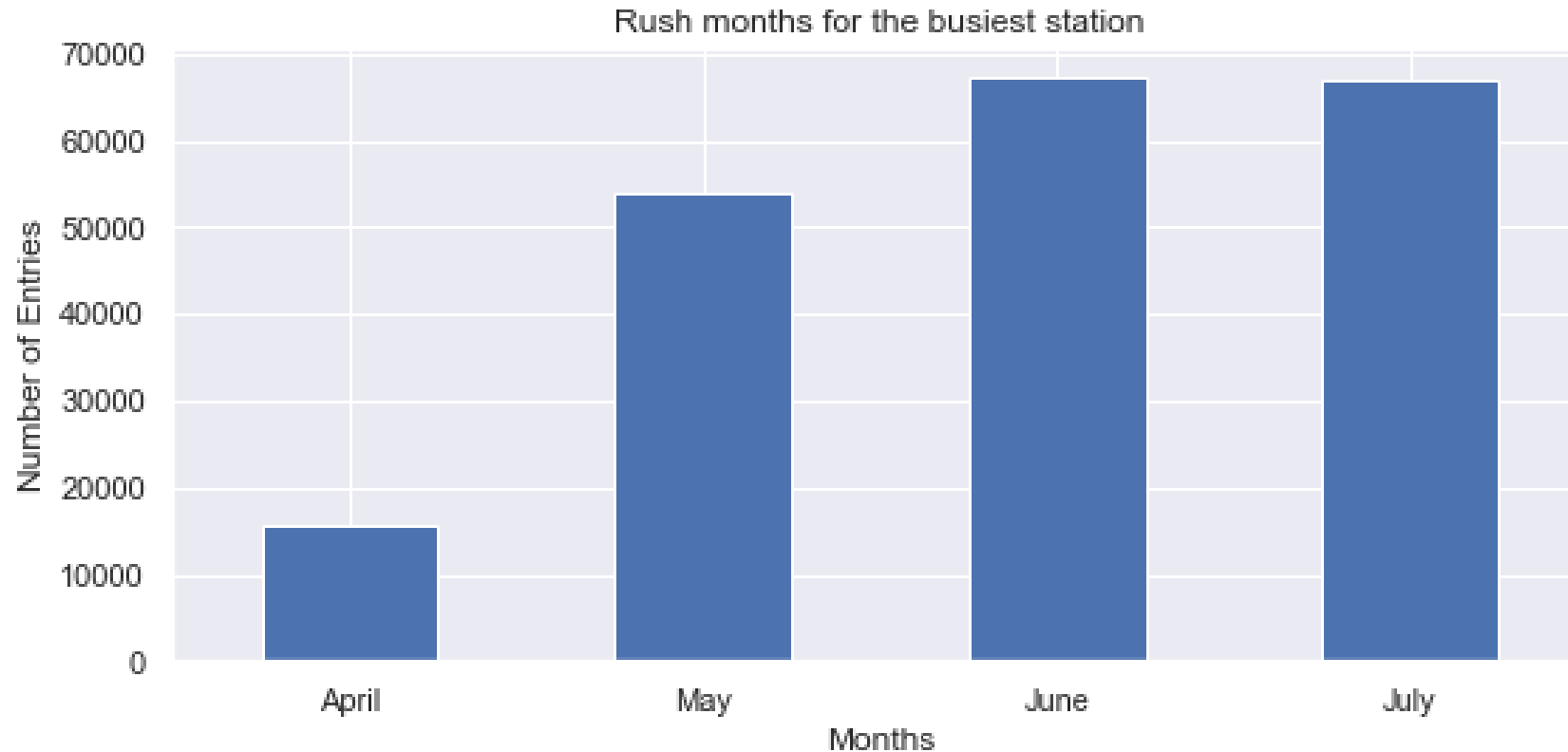
Analysis Result

Analysis Result



The busiest station is 34 ST PENN STA
The number of entries per day of the top 5 stations

Analysis Result



The busiest month is June
The number of entries per day of the busiest station

Final Recommendation

A thick, hand-drawn style orange line that underlines the text "Final Recommendation". It starts under the 'F' and ends under the 'n', following the width of the text.

Final Recommendation

Short term solution

Expand the busiest stations and
increase the turnstiles number

Final Recommendation

Long term solution

Increase the number of stations near
to the busiest stations

Thank You



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2021