



MTA station: Source: Wikipedia

Fundraising at the NYC subway stations

Diego Duque Marquez - Data Analyst

Overview:

- American Cancer Society
- Recommendation for the best period of times and locations for fundraising at MTA stations.

Requirements:

- Nov - Jan
- 5 weeks of ad budget
- NYC subway stations (in different neighborhoods)



Execution:

1. Collect information from MTA's website.
2. Identify the 10 stations with the highest entering traffic.
3. Select the 5 stations with the highest rank but from different neighborhoods.
4. Analyze the 5 stations on monthly and weekly periods.
5. Recommendation of most suitable weeks and stations for fundraising.

Methodology:

Project workflow - technical:

1) Data Collection:

- SQ and Python

2) Data Preparation:

- SQL

3) Exploratory Data Analysis:

- SQL y Python Pandas

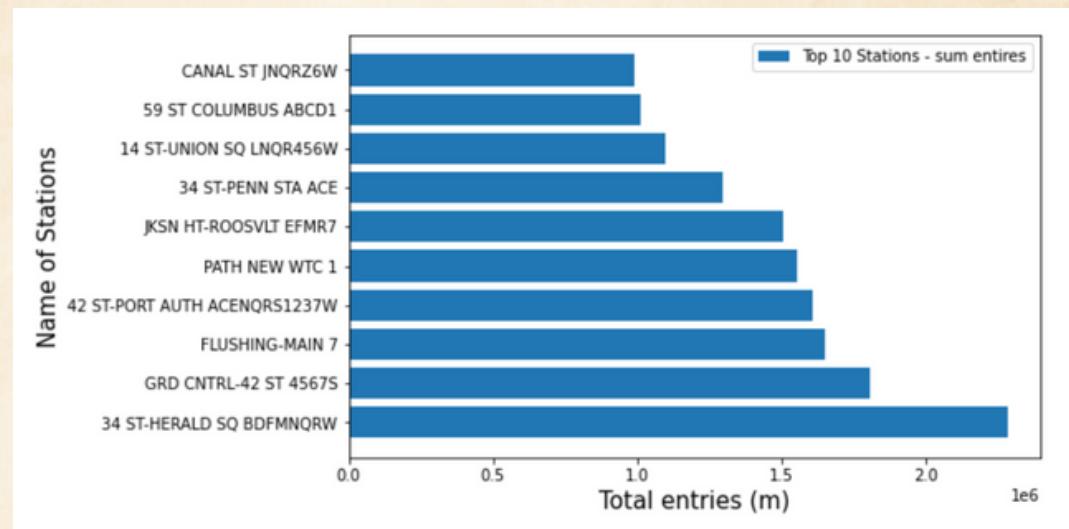
4) Data Visualization:

- Python Matplotlib

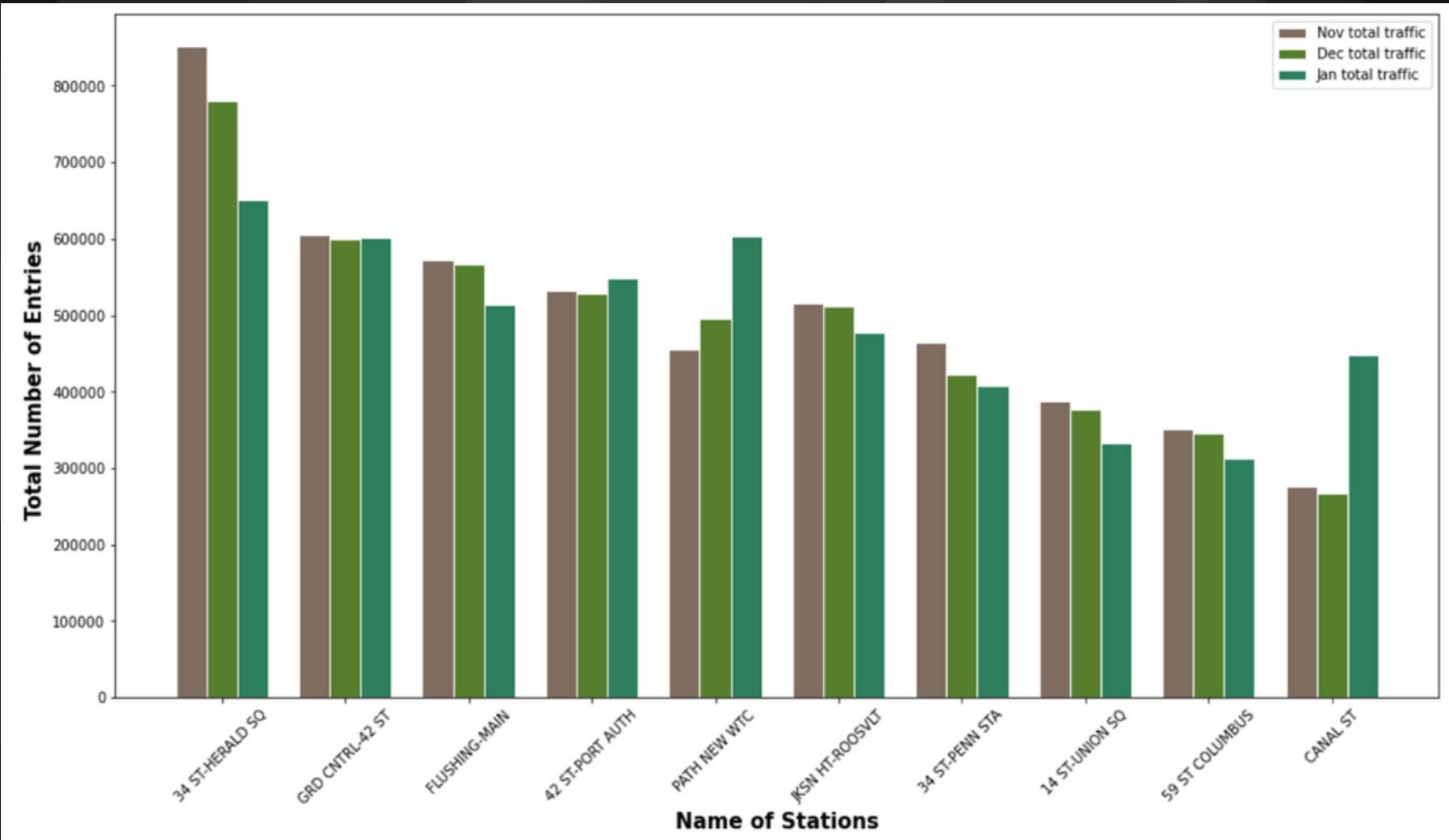
Results:

Ten subway stations with the most traffic

1. 34 St - Herald Square
2. Grand Central - 42 St
3. Flushing - Main
4. 42 St - Port Auth
5. Path New WTC
6. JKSN HT - Roosevelt
7. 23 St Penn Sta
8. 14 St - Union Square
9. 59 St Columbus
10. Canal St



Monthly total entries of the top 10 stations

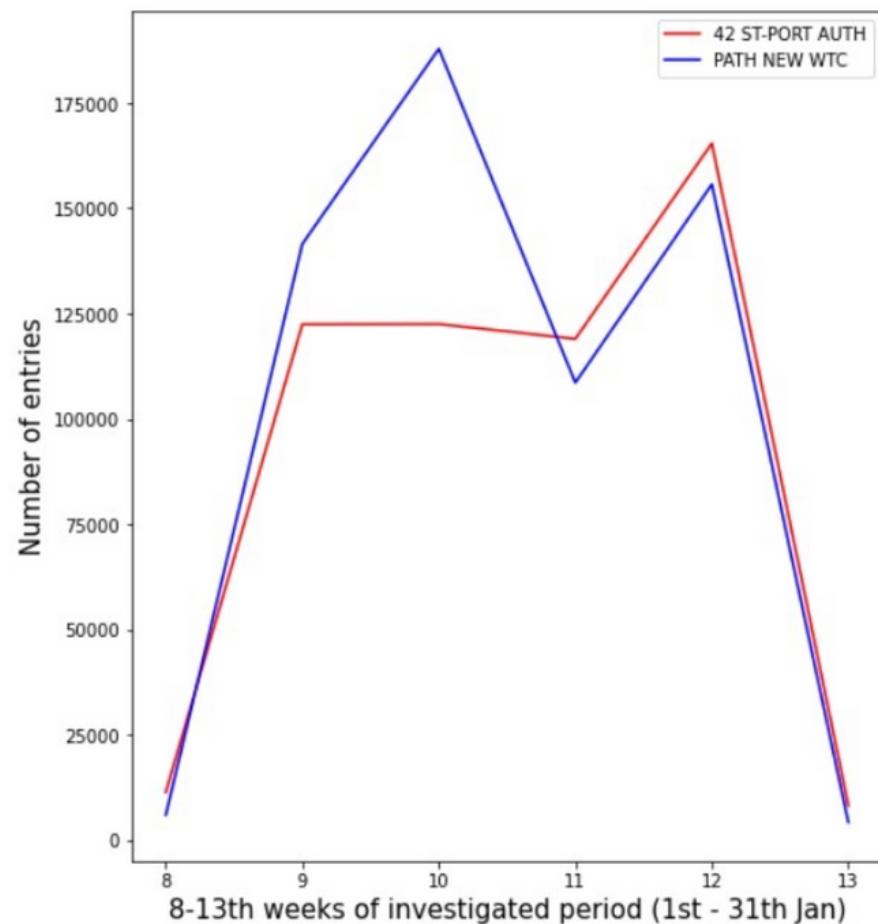
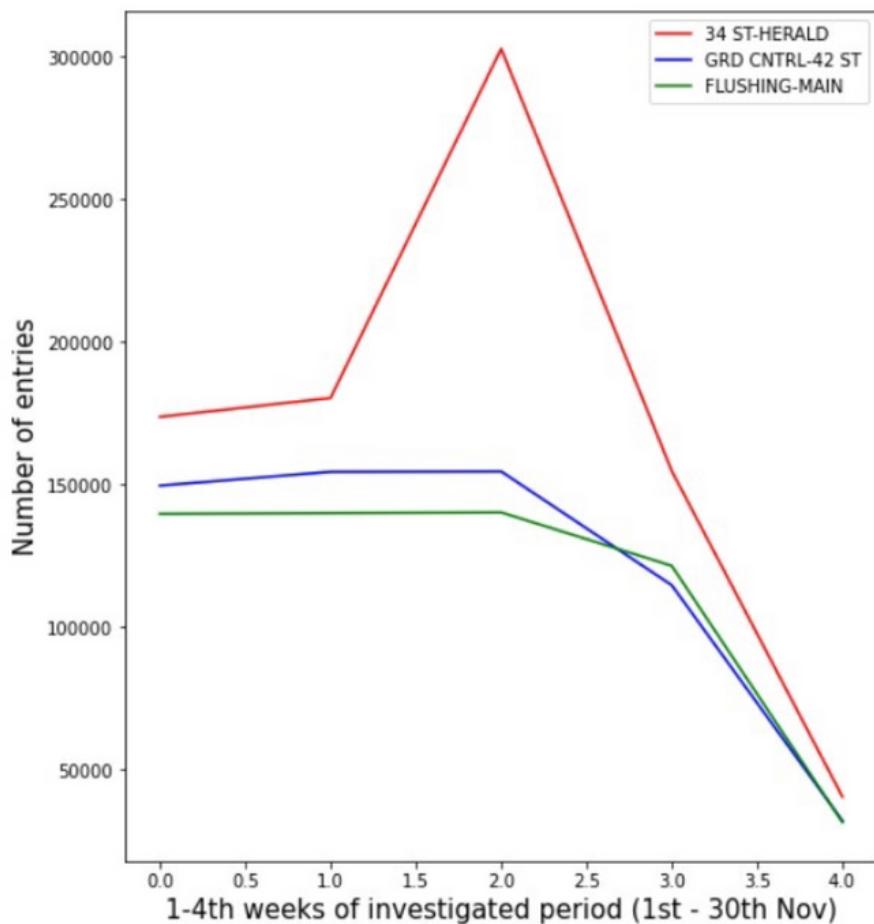




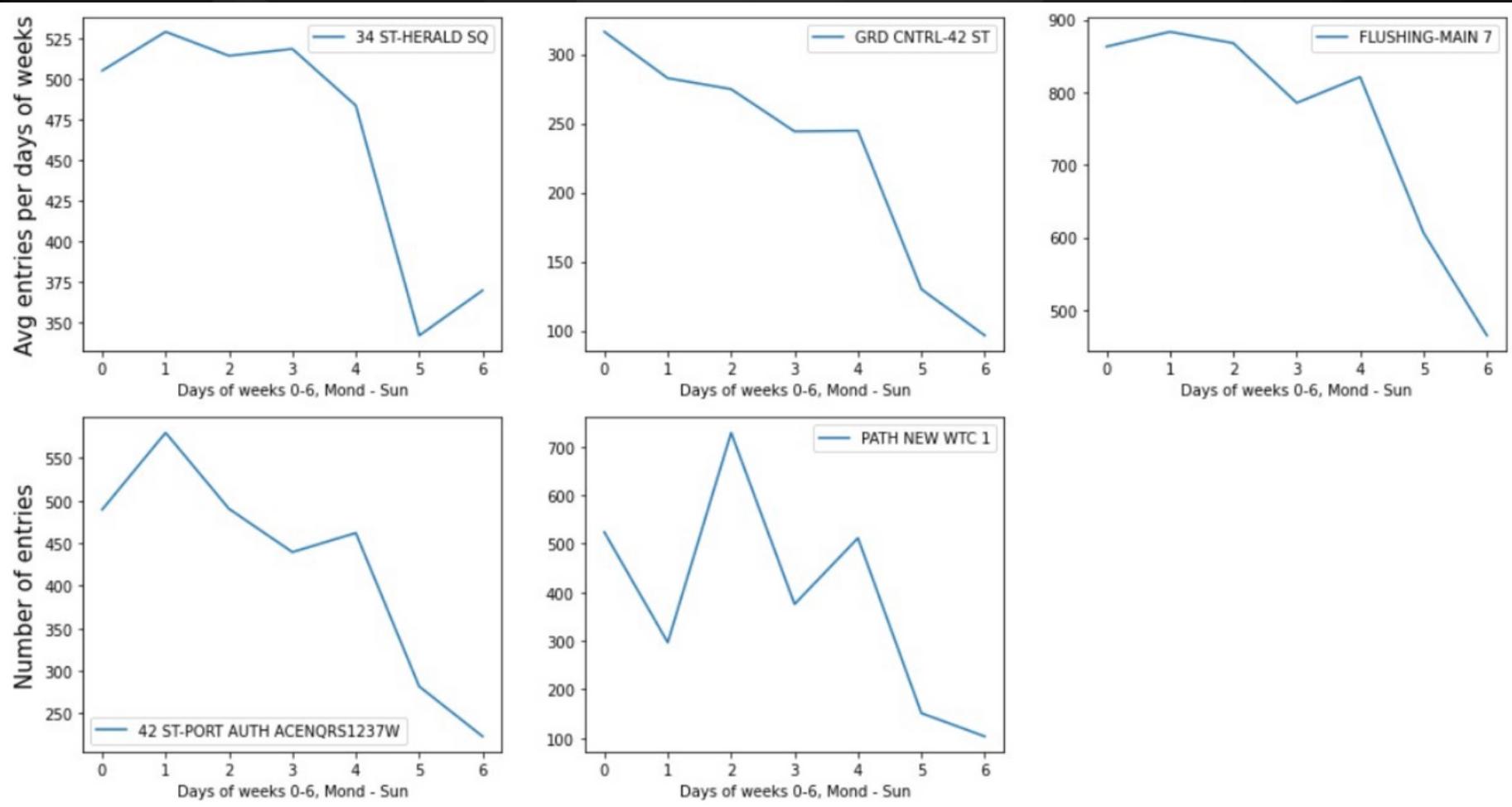
Top 5 stations with neighborhoods:

1. 34 St - Herald Square - Garment District
2. Grand Central - 42 St - Murray Hill
3. Flushing - Main - Queens/ Linden Hill
4. 42 St - Port Auth - Hell's Kitchen
5. Path New WTC - Lower Manhattan





The 5 selected station's weekly traffic for the month
with the most entries



Average entries of the station per days of the week
(Between Nov 2020 - Jan 2021)

Conclusion:

The recommendation to the American Cancer Society for placement of their fundraising units are the following stations and days:

1. **34 St - Herald Square - 3rd week of November - Tuesday**
2. **Grand Central- 42 St - 3rd week of November - Monday**
3. **Flushing - Main - 3rd week of November- Tuesday**
4. **42 ST-PORT AUTH - 4th week of January - Tuesday**
5. **Path New WTC - 2nd week of January - Wednesday**

MTA station. Source: Wikipedia



Appendix:

- RAPID Chart
- Gantt Chart
- SQL example
- Dashboard findings

RAPID Chart

American Cancer Society MTA fundraising project

	Which stations and days?	What is the timeline for the fundraising?
INPUT	<ul style="list-style-type: none">• Program team• Marketing director• MTA Marketing department (partners)	<ul style="list-style-type: none">• Program team• Marketing director
AGREE	<ul style="list-style-type: none">• n/a	<ul style="list-style-type: none">• Senior Financial Analyst (responsible for all the fundraising financial analysis)
RECOMMEND	<ul style="list-style-type: none">• Data Analyst (Diego Duque Marquez) recommended stations and days	<ul style="list-style-type: none">• Marketing director
DECIDE	<ul style="list-style-type: none">• Executive director (leadership team strives for consensus, but the executive director has the final decision)	<ul style="list-style-type: none">• Director of programs
PERFORM	<ul style="list-style-type: none">• Program team	<ul style="list-style-type: none">• Program team

Gantt Chart

American Cancer Society MTA fundraising project

SQL example

SQLite running in Python via SQLAlchemy

Using SQLite during the Exploratory Data Analysis (EDA) SUM entries of some stations are too high, this was corrected.

```
pd.read_sql('SELECT STATION, SUM(ENTRIES) FROM mta_data GROUP BY STATION', engine)
```

	STATION	SUM(ENTRIES)
0	1 AV	275916927334
1	103 ST	79383543002
2	103 ST-CORONA	37472645330
3	104 ST	994725648708
4	110 ST	24245148515
...
373	WOODLAWN	19412440969
374	WORLD TRADE CTR	941968634938
375	WTC-CORTLANDT	433042636583
376	YORK ST	17424098719
377	ZEREGA AV	1582732655



Turnstile. Source: Wikipedia

Main Findings:

- First two weeks of the month have the least traffic
- Most of the traffic are on Monday, Tuesday and Wednesday
- Some turnstiles count backwards
- In the top 5 busiest stations on Sundays the traffic decreases between 70-90%



MTA train. Source Wikipedia

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