WomenTechWomenYes

An Exploratory Analysis of New York City MTA Turnstile Data

By: Alex Pope

Introduction

- Area of Focus
  - Ample foot traffic throughout MTA Subway System
- Primary Objective
  - Analyze trends in foot traffic to optimize the placement of street team in MTA Subway system to make connection with individuals

Methodology

Data

- Cumulative turnstile entry data from the MTA Subway System (May, April, June 2021)
- 379 Subway stations and 377,379 records represent entry counts for each turnstile taken at irregular 4-hour time intervals

Data Cleaning

- Converted cumulative records to daily entry counts for each turnstile
  - Allow us to arrive at total entry counts for each station across 3-month period
- Duplicate records removed
  - Sorted according to unique turnstile records (in notes)
- Daily entries for each turnstile capped at 10,000
  - Filters added to display day of week combined with time, and a summation of entries in notes

Methodology

STATION	DAILY_ENTRIES
PARSONS BLVD	244631.0
CENTRAL PK N110	241799.0
PELHAM BAY PARK	239609.0
ST. GEORGE	239375.0
WINTHROP ST	237199.0

*First 5 stations > median total daily entries

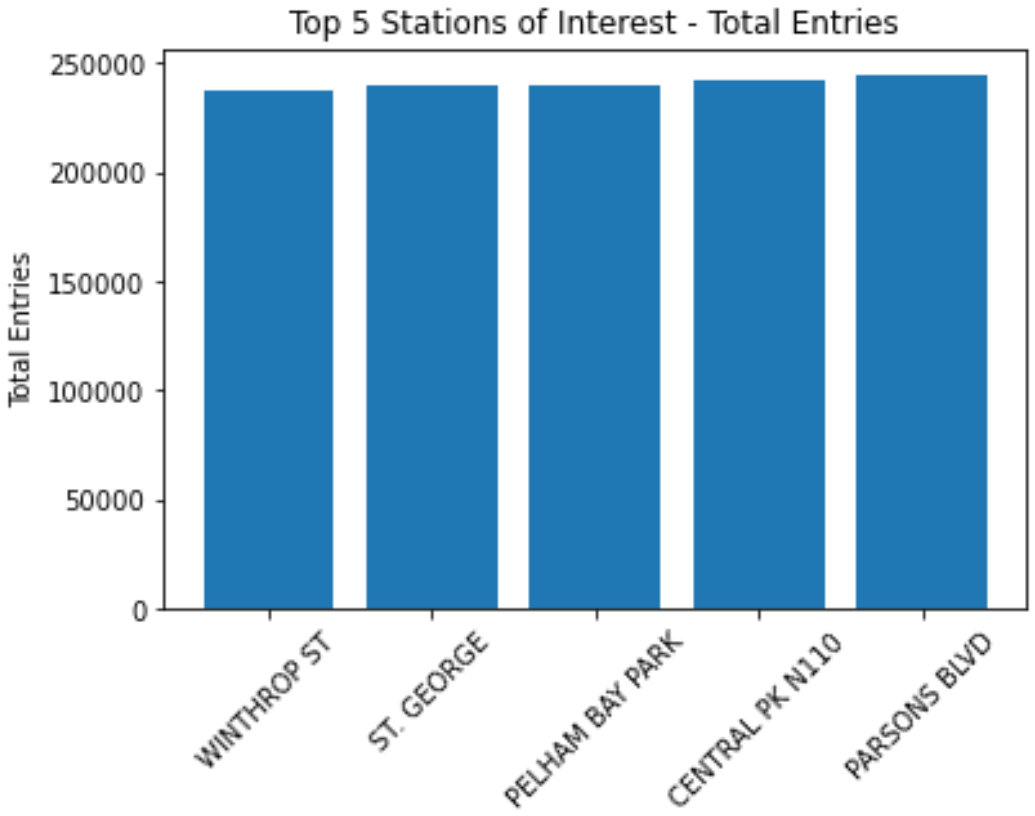
Stations of Interest

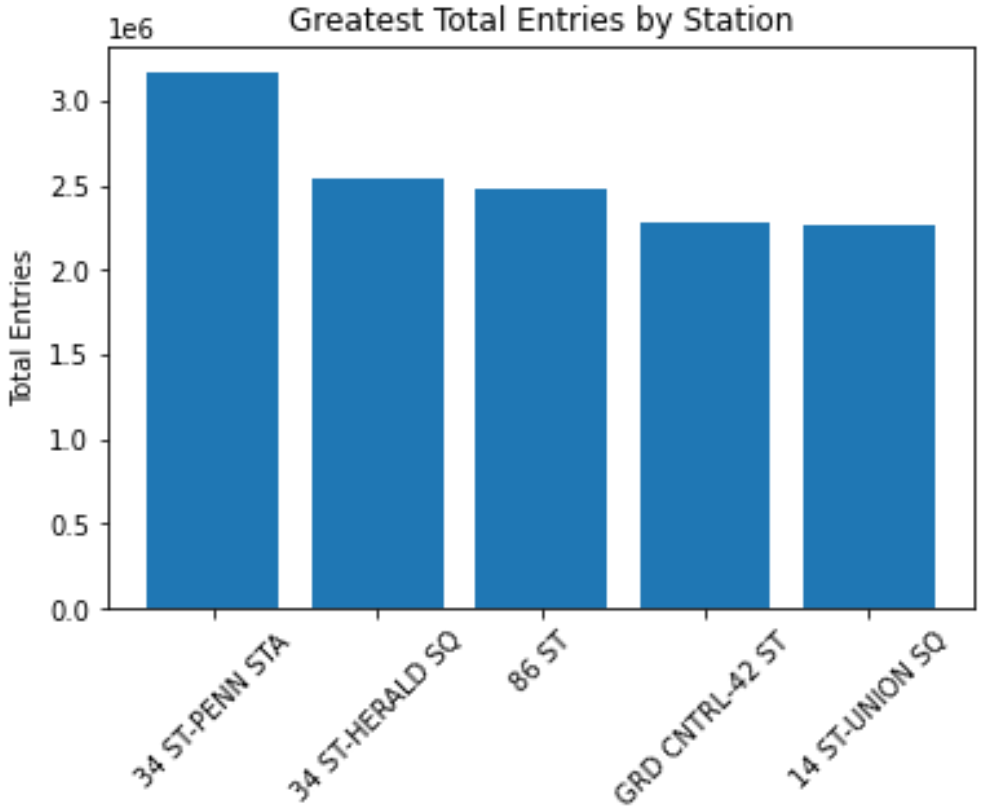
- Focused on entry data near the median

Tools

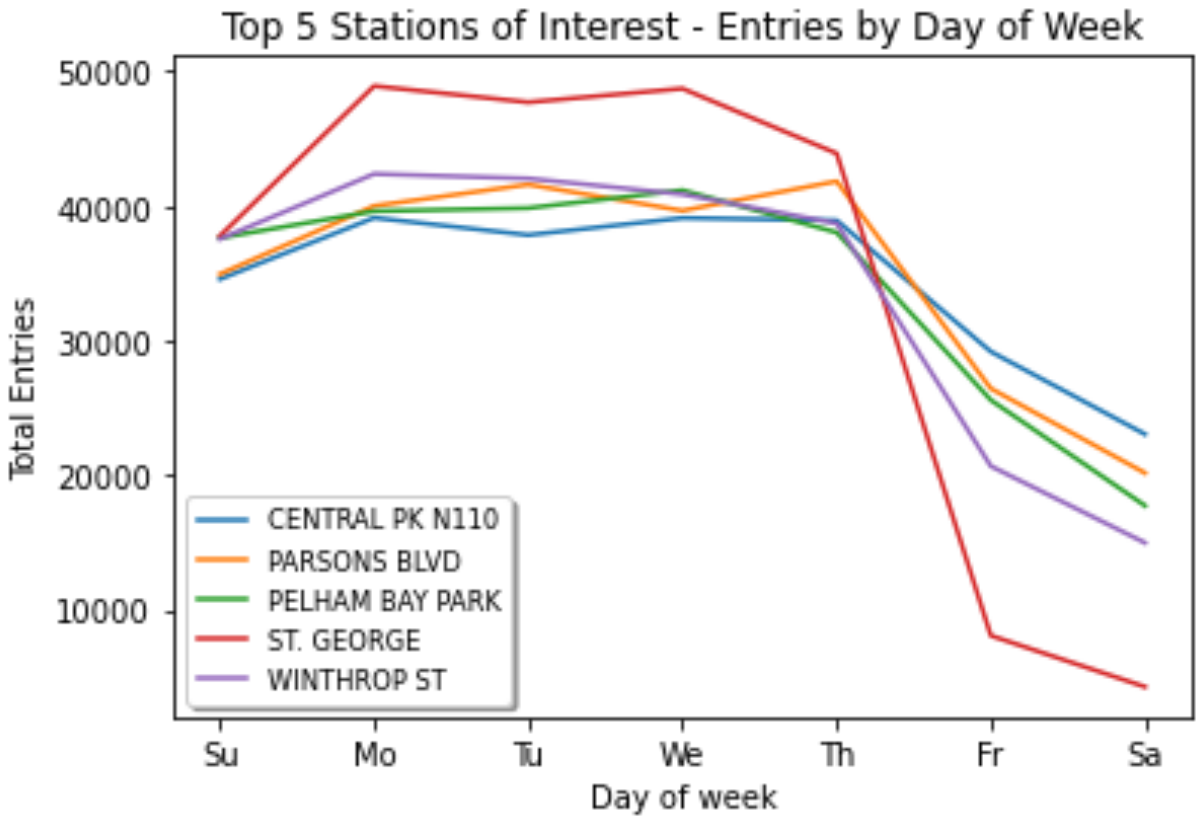
- Python and SQLAlchemy for data manipulation
- MatPlotLib for data visualization

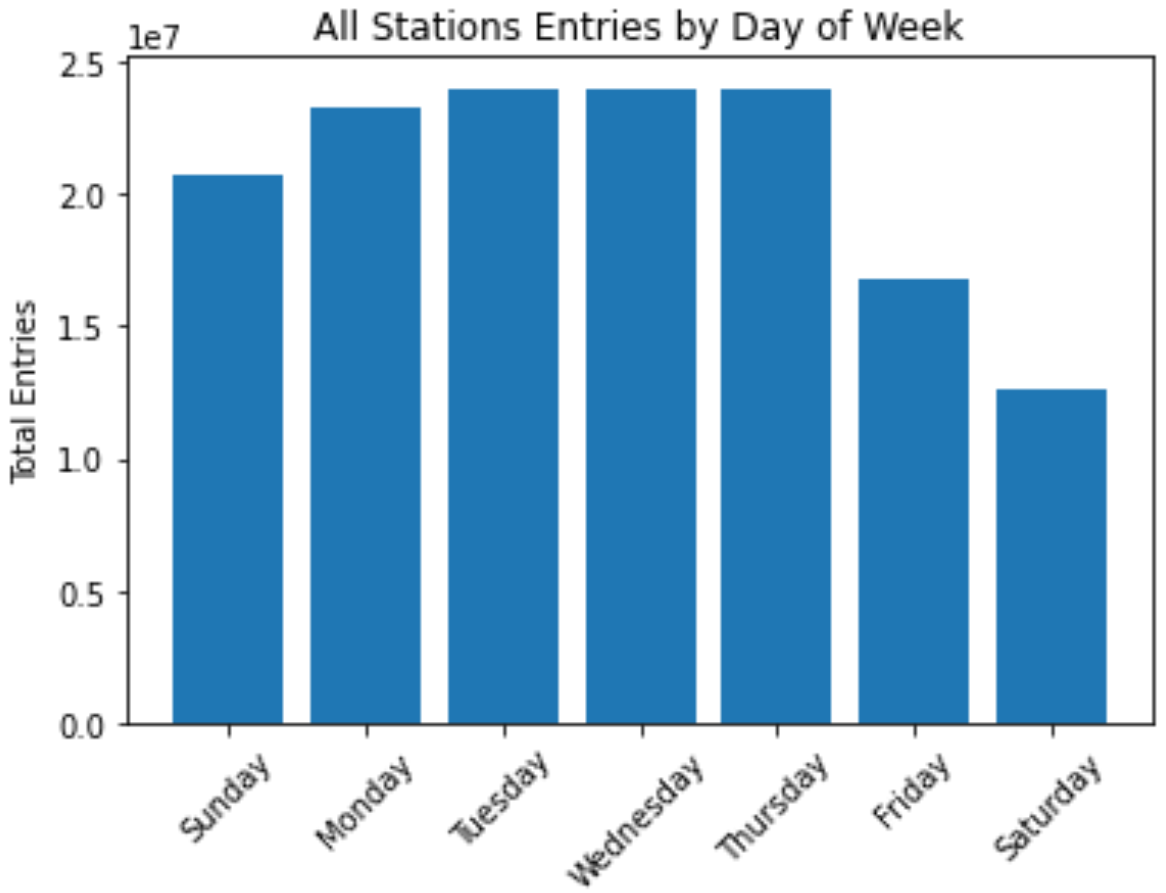
Total Entries Results





Total Entries Results





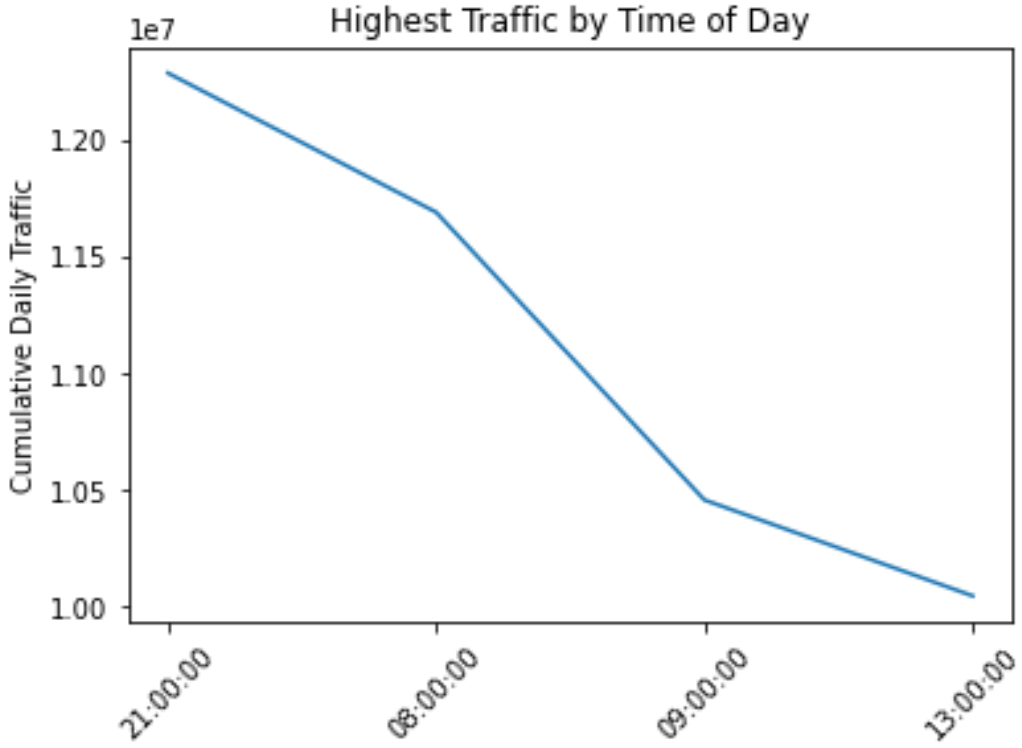
Recommendations

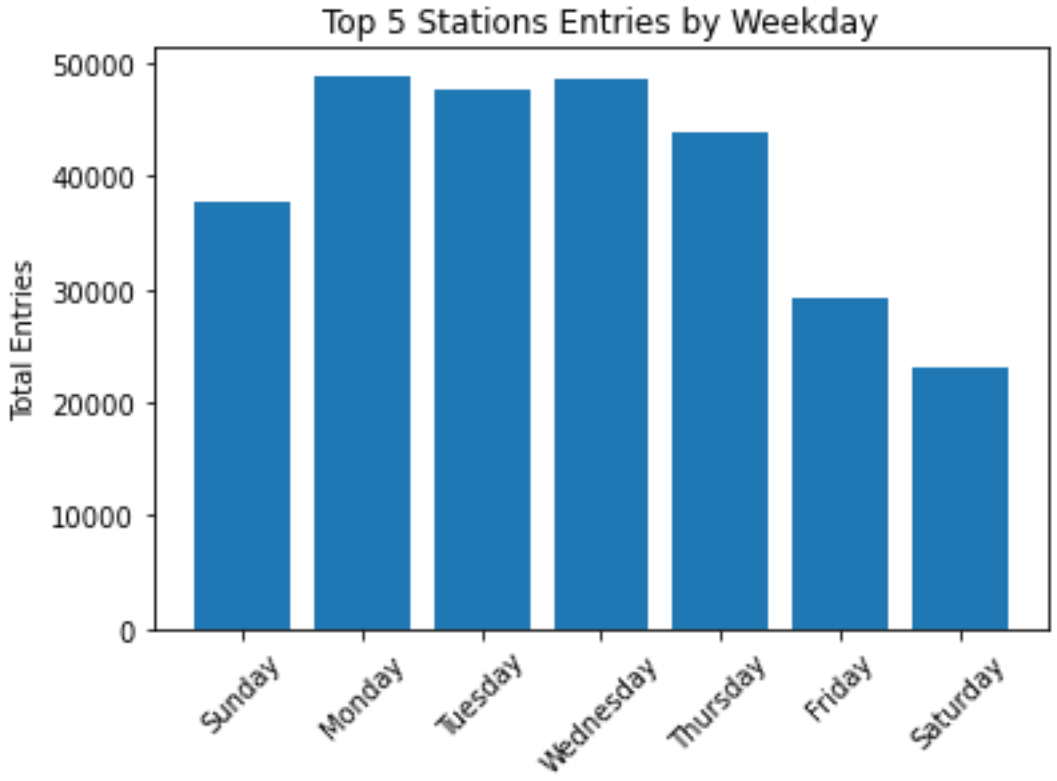
- Avoid highest traffic stations
- Rotate street team throughout Stations of Interest depending on day of week
- Target St. George Station Sunday-Thursday, rotate through Central Park N110 and Parsons Blvd on Friday and Saturday

Future Work

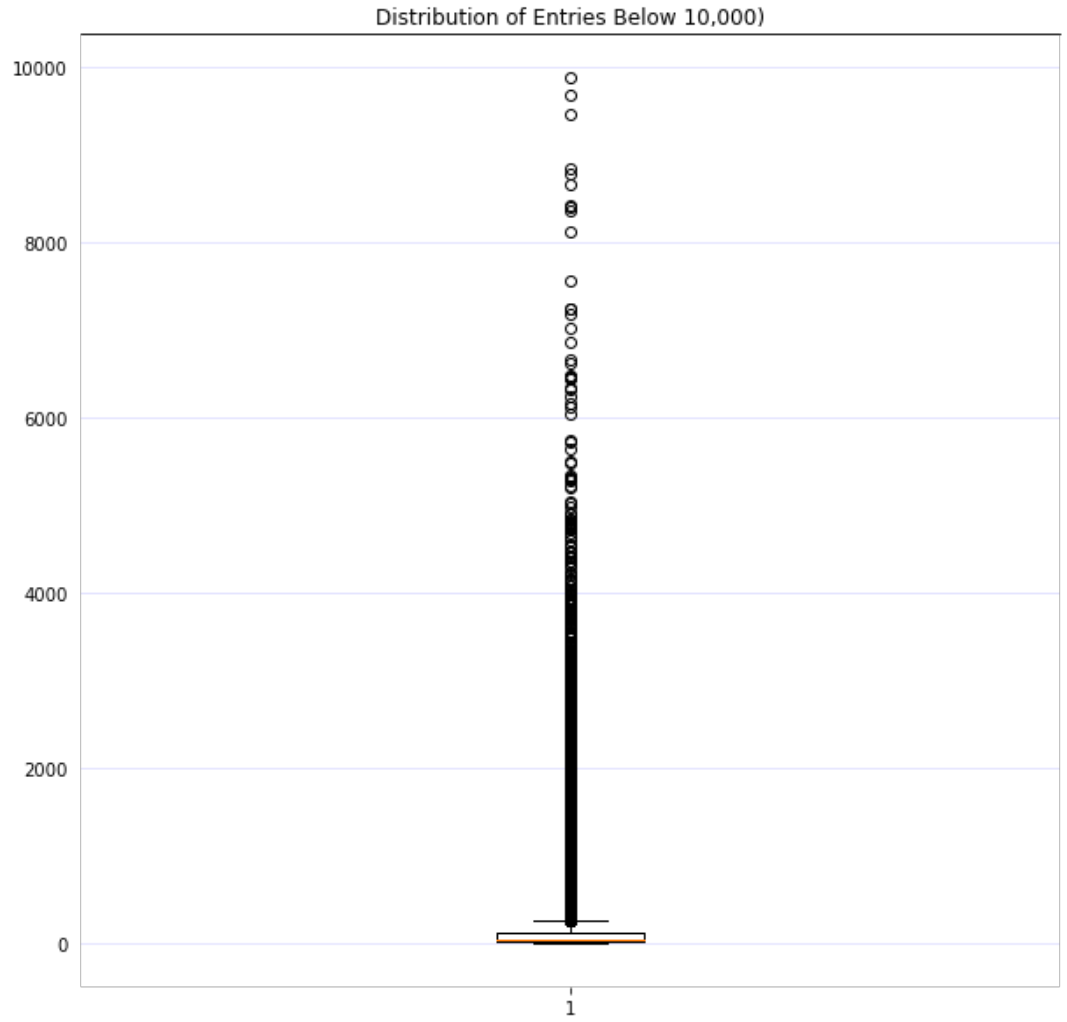
- Provide insight on entry totals by control area of each station
- Incorporate exits totals into analysis
- Identify stations in close proximity to areas of New York City with women who may be interested in WTWY

Appendix


Highest Traffic by Time of Day
1e7
Cumulative Daily Traffic
1.20
1.15
1.10
1.05
1.00
21:00:00
08:00:00
09:00:00
13:00:00


Top 5 Stations Entries by Weekday
Total Entries
50000
40000
30000
20000
10000
0
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

Appendix


Distribution of Entries Below 10,000)
10000
8000
6000
4000
2000
0
1