

# MTA DATA ANALYSIS

WOMEN TECH WOMEN YES  
(WTWY)

STREET TEAM PLACEMENT  
OPTIMIZATION

SABRINA YANG

# INTRODUCTION

- **Motivation:** Help WTWY increase awareness and reach for its summer gala event, a significant portion of its fundraising
- **Objectives:** Determine the best subway station that optimizes WTWY's street team placement
- **Goals:** Identify the best subway station, date and time to place street teams

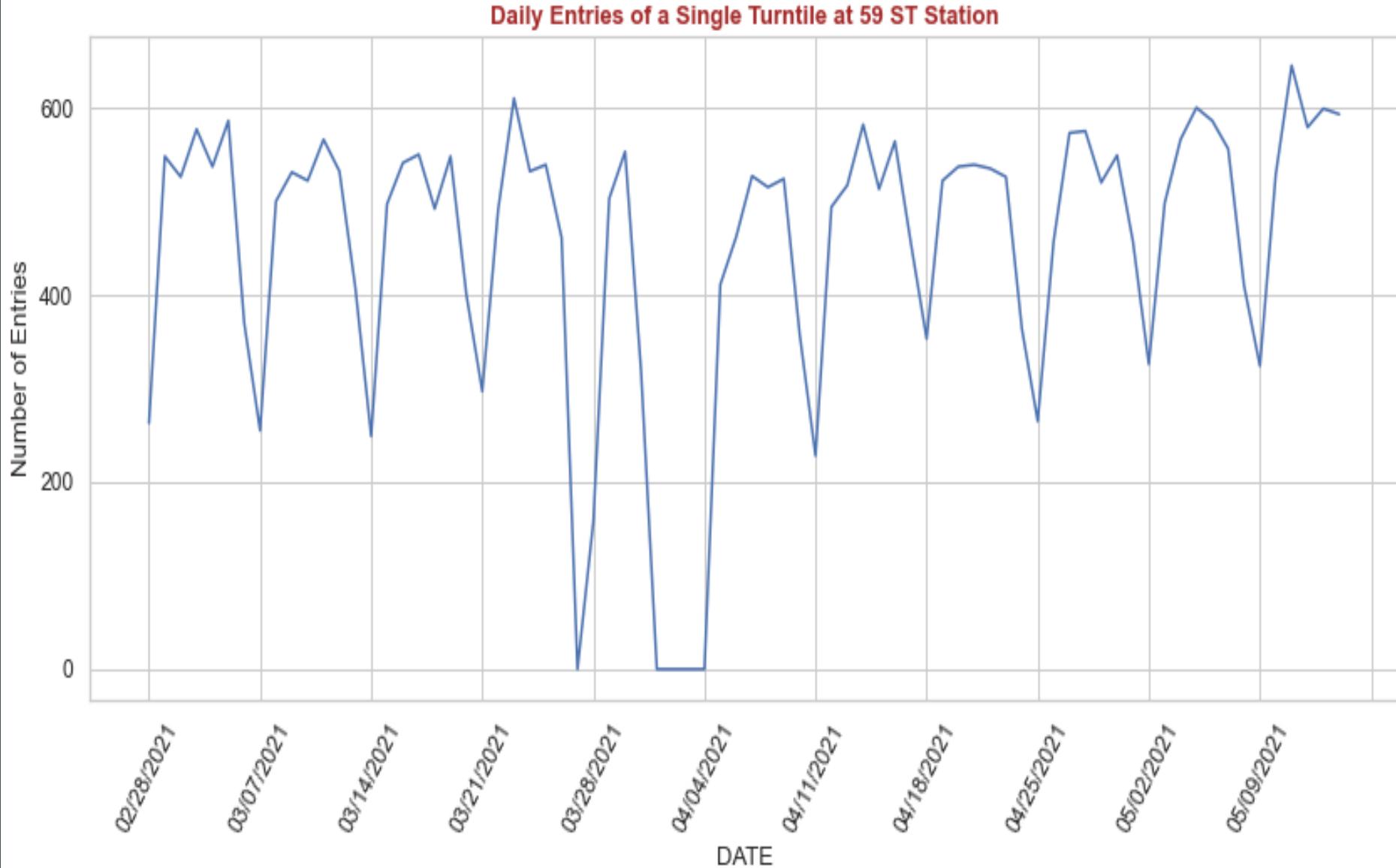
# METHODOLOGY

- **Data:** NYC MTA turnstile data, Zip code data, Tech firms locations data
  - Date, Time, Entries & Exits
- **Date:** Most recent 3 months period
  - February 28, 2021 to May 14, 2021
- **Models:** Data Manipulation & Exploratory Data Analysis



# ANALYZING A SINGLE TURNSTILE

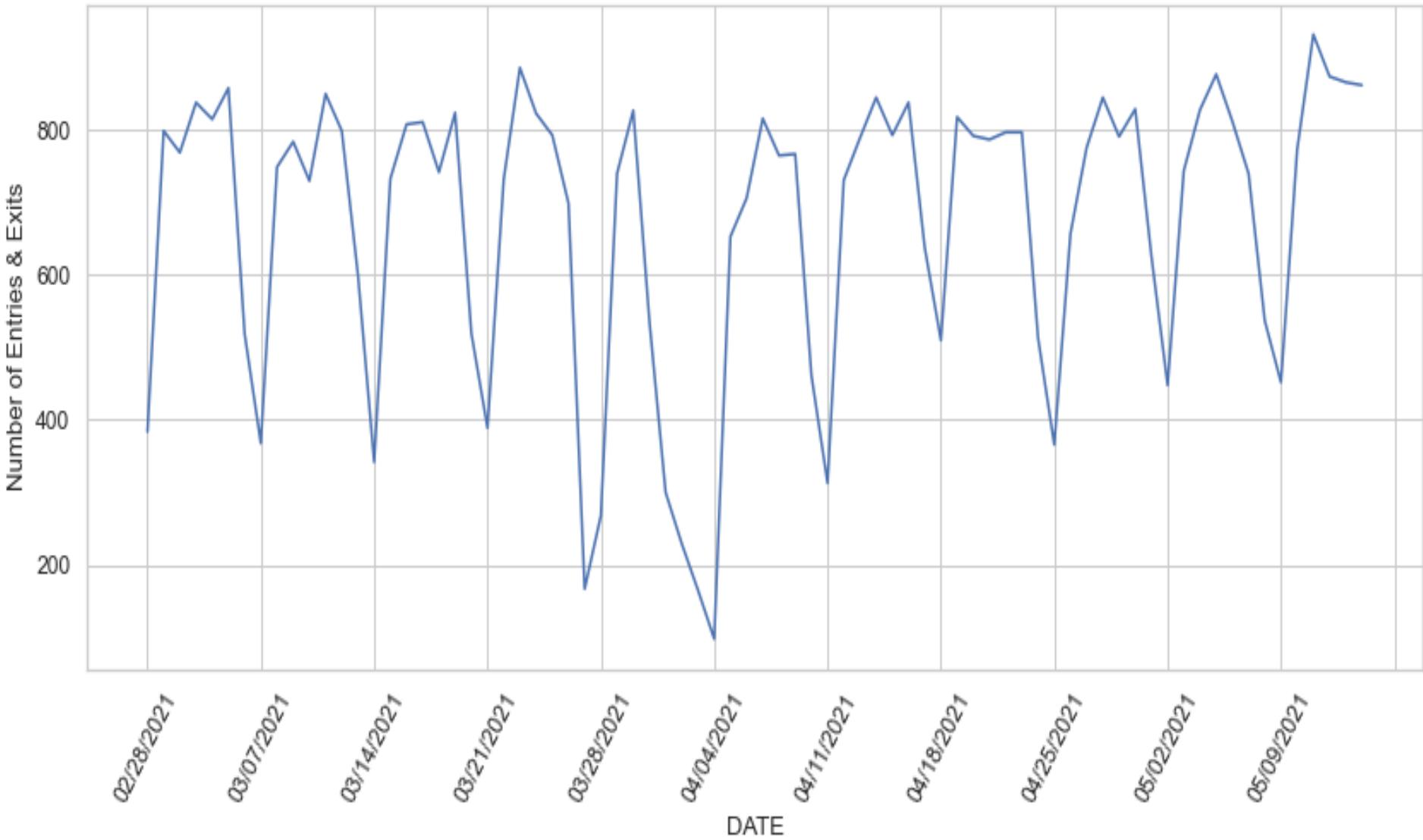
- CHOSE A RANDOM STATION
  - 59 ST
- ENTRIES ONLY



# SINGLE TURNSTILE, BUT WITH ENTRIES AND EXITS

- 59 ST
- ENTRIES + EXITS

Daily Activity of a Single Turnstile at 59 ST Station



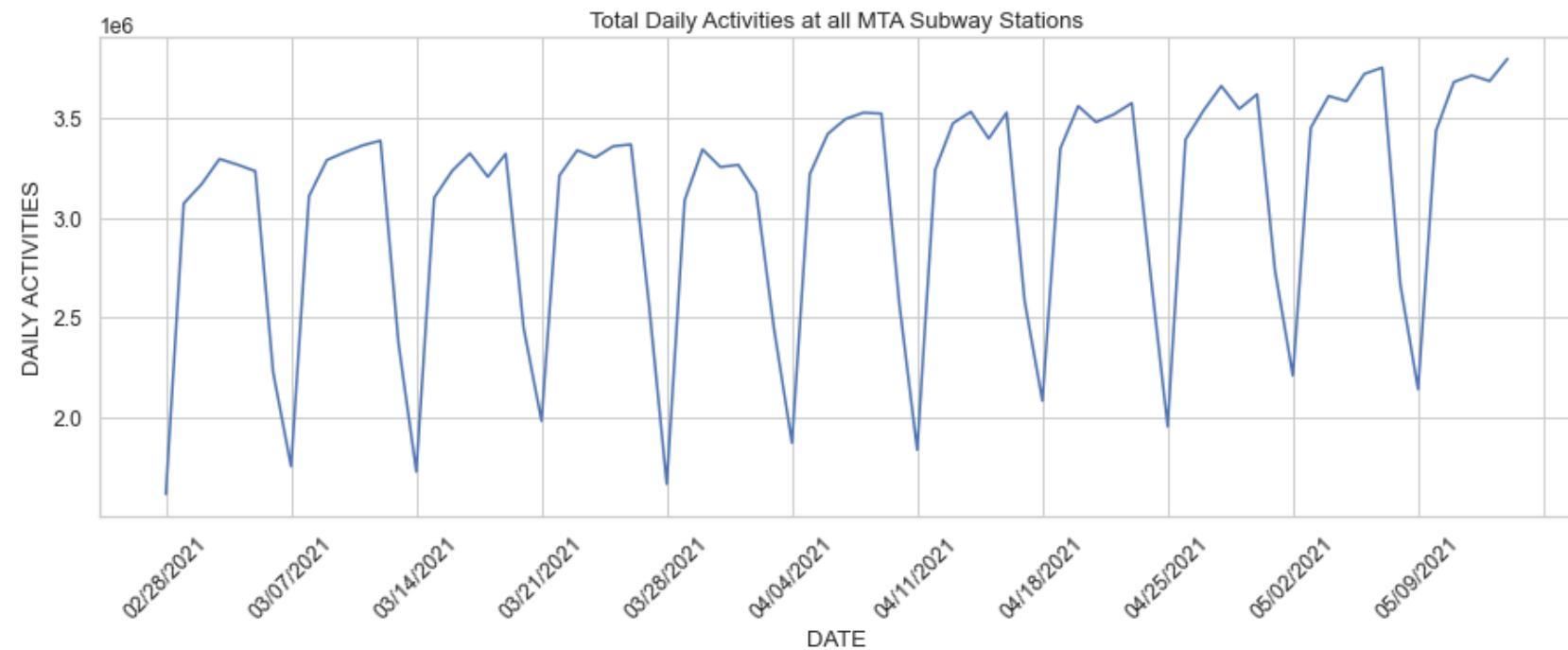
## WHY TAKE ENTRIES & EXITS BOTH?

- SOME DATA SHOWS ZERO ENTRIES
- BUT ON THE SAME DAY EXITS ARE NOT ZERO. WHY?
- CAGELIKE TURNSTILES
- **TAKE ENTRIES & EXITS BOTH = DAILY ACTIVITIES!**



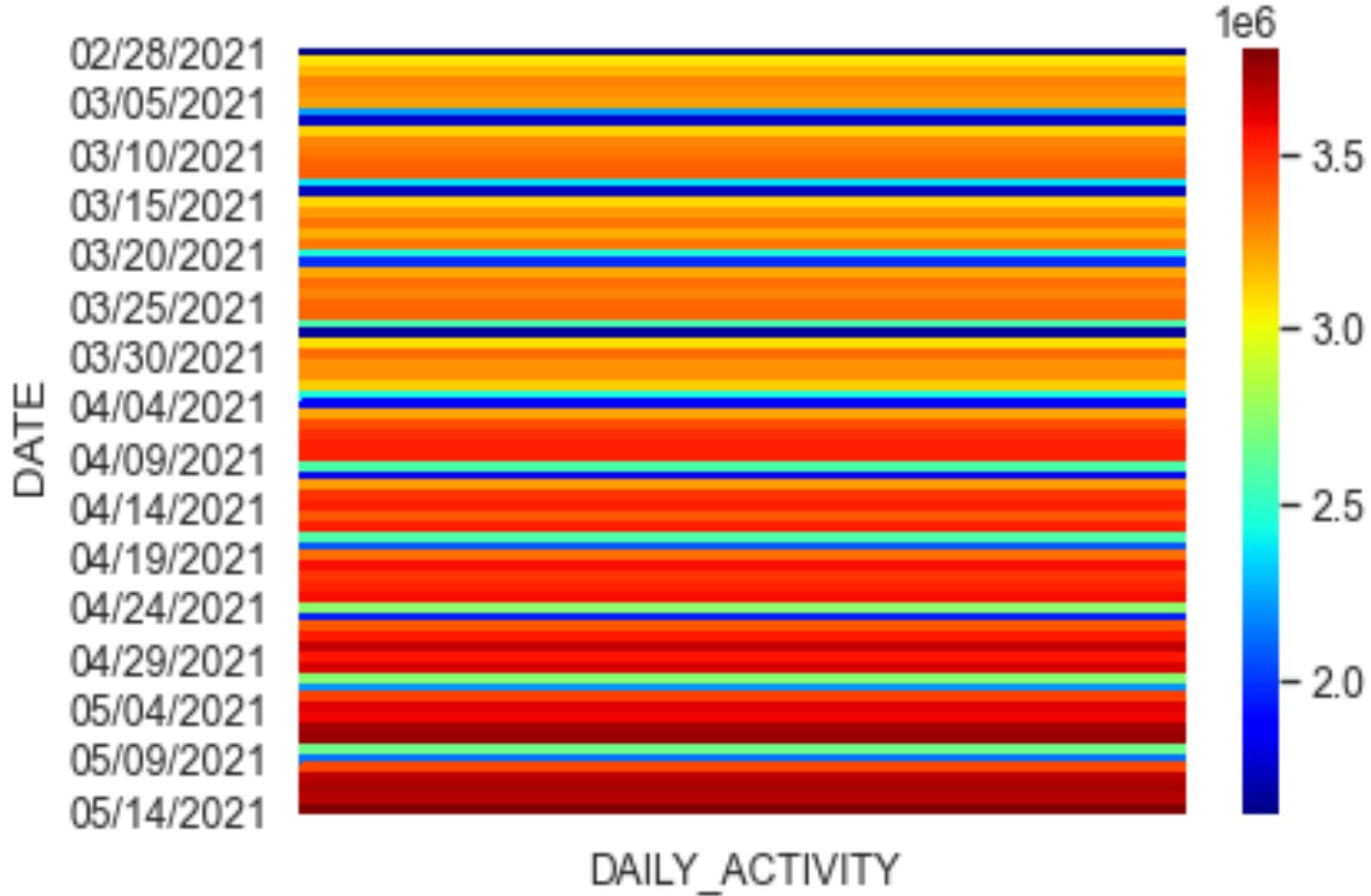
# ANALYZING ALL SUBWAY STATIONS

- LINE CHART
- DAILY ACTIVITY
- Ridership is gradually rising after vaccinations and recovery from COVID19



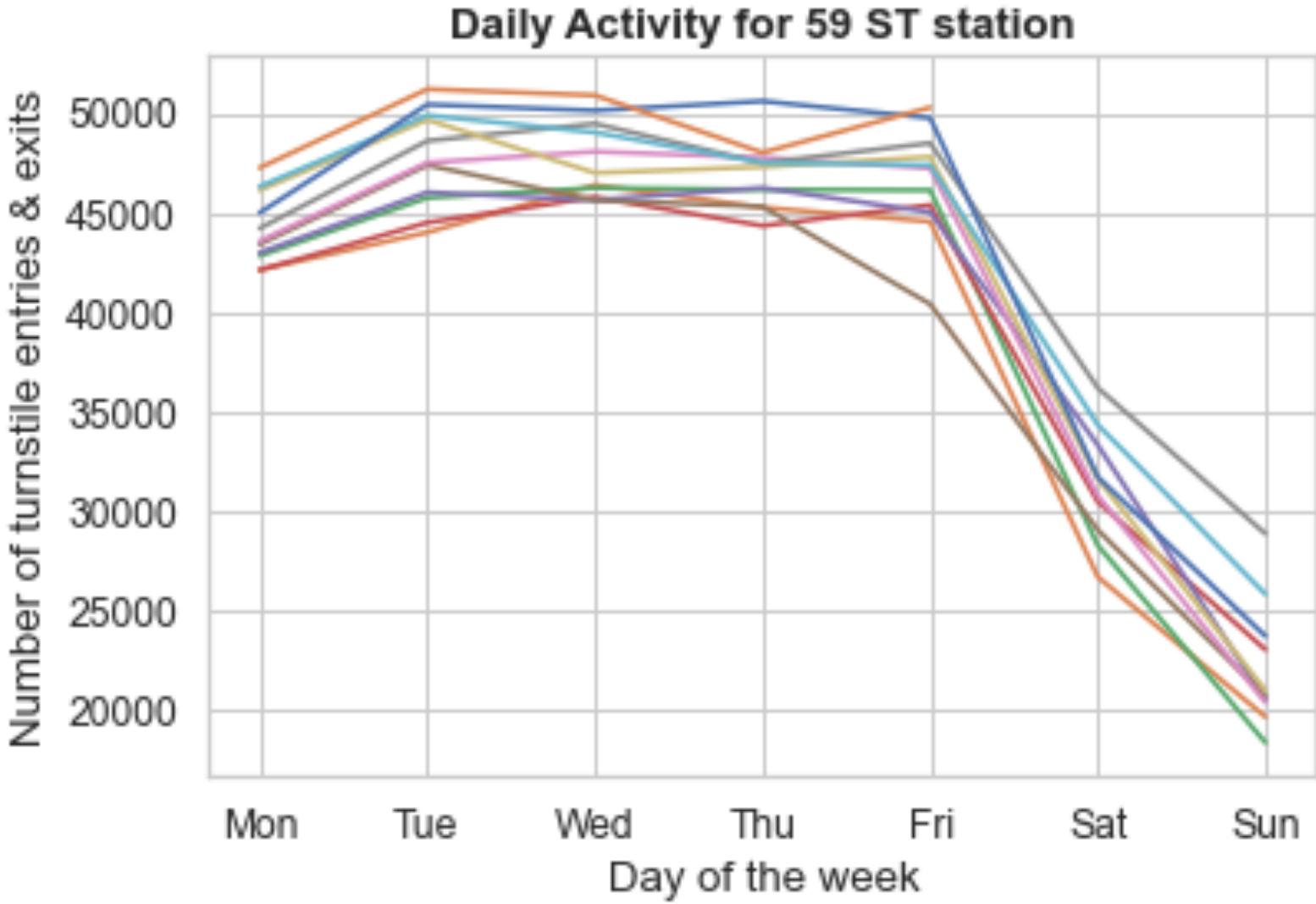
# ANALYZING ALL SUBWAY STATIONS

- HEATMAP
- DAILY ACTIVITY
- Red area getting bigger
- Ridership is gradually rising after vaccinations and recovery from COVID19



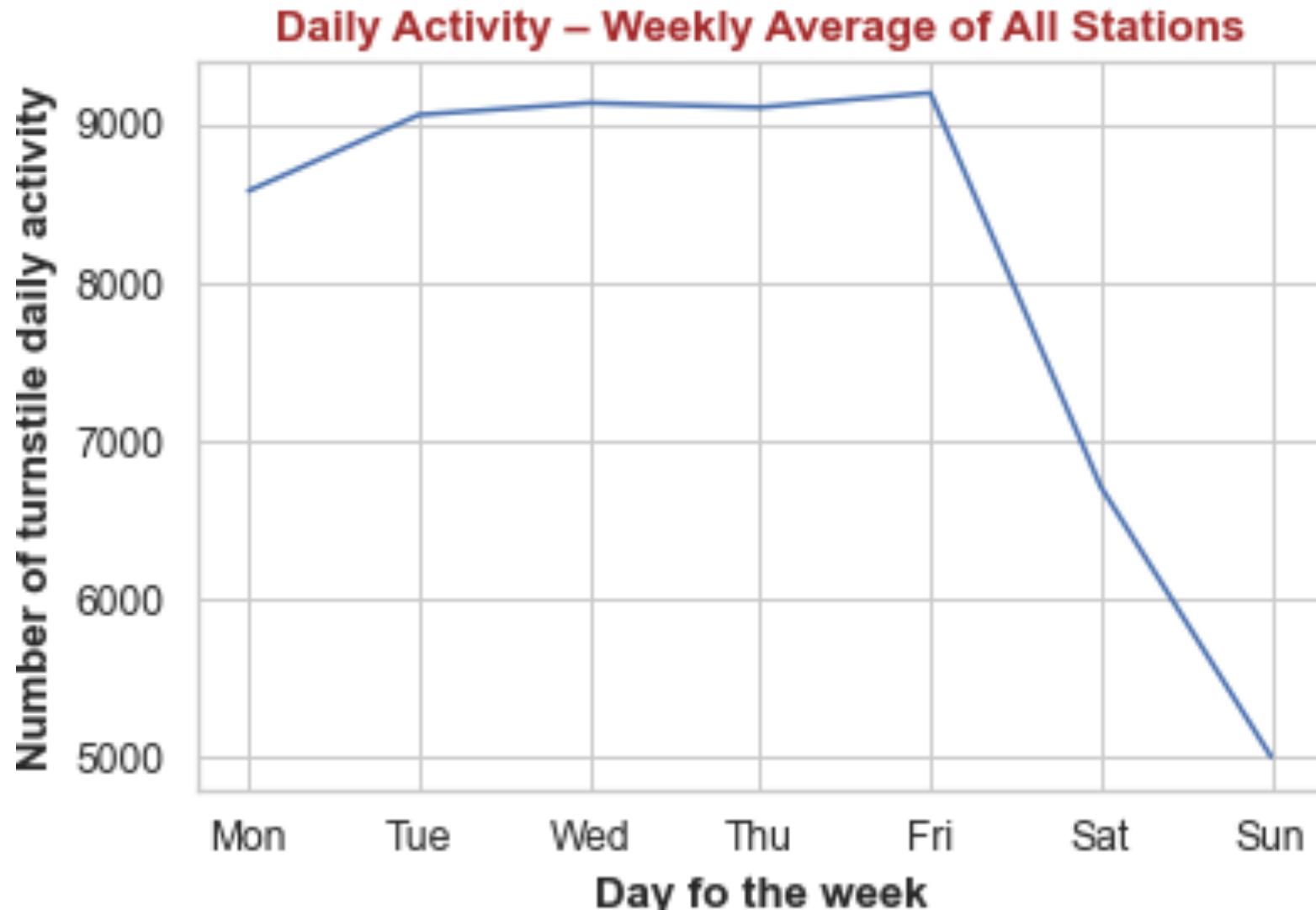
## WHICH DAY OF THE WEEK IS BUSIEST?

- A single turnstile at 59 ST
- Each line for a week data
- 11 weeks
- Weekdays > Weekends
- Commute for work

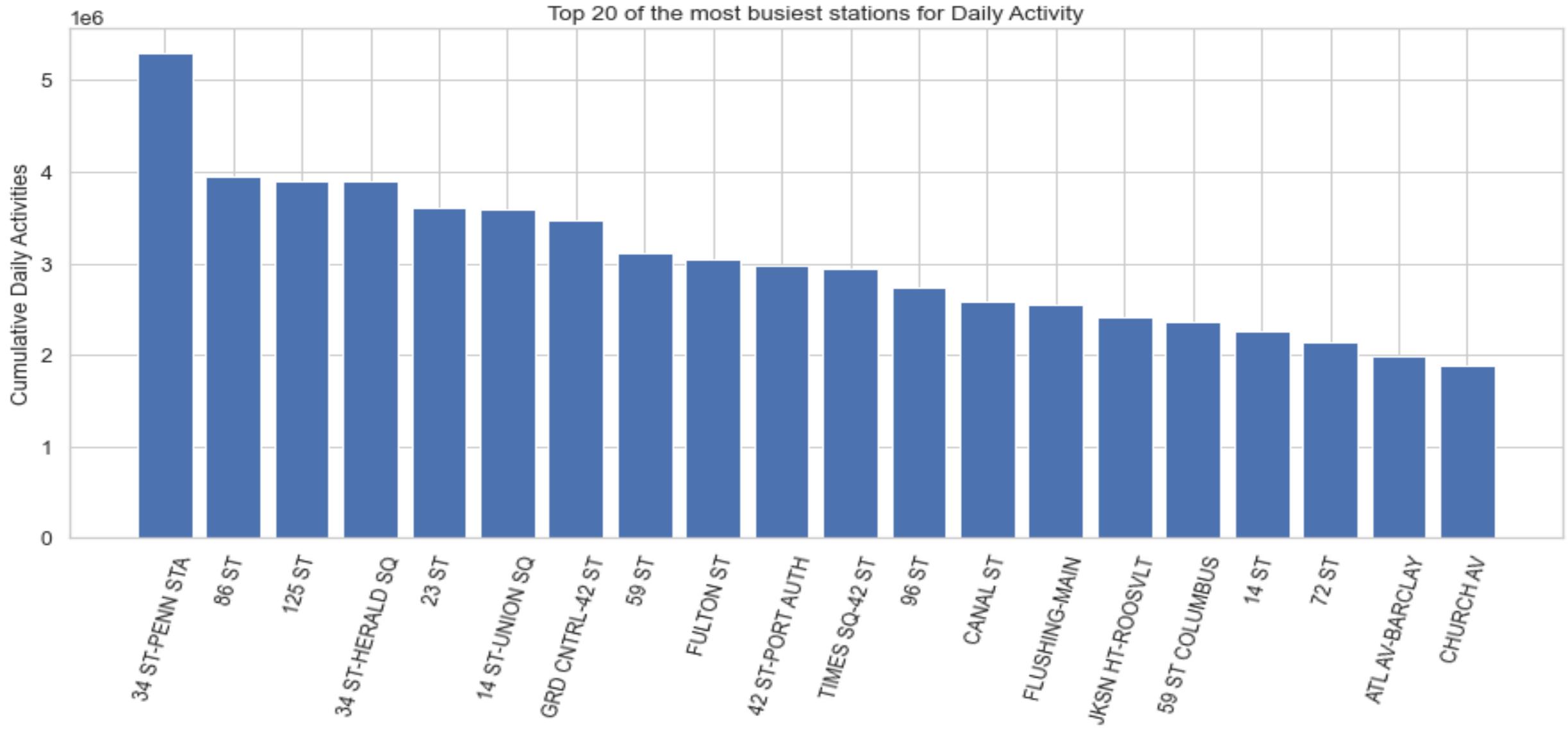


## WEEKEND VS. WEEKDAYS – ALL STATIONS

- Across all stations, daily activity is much higher during the weekdays
- Peaks on Fridays!



# TOP 20 STATIONS



---

---

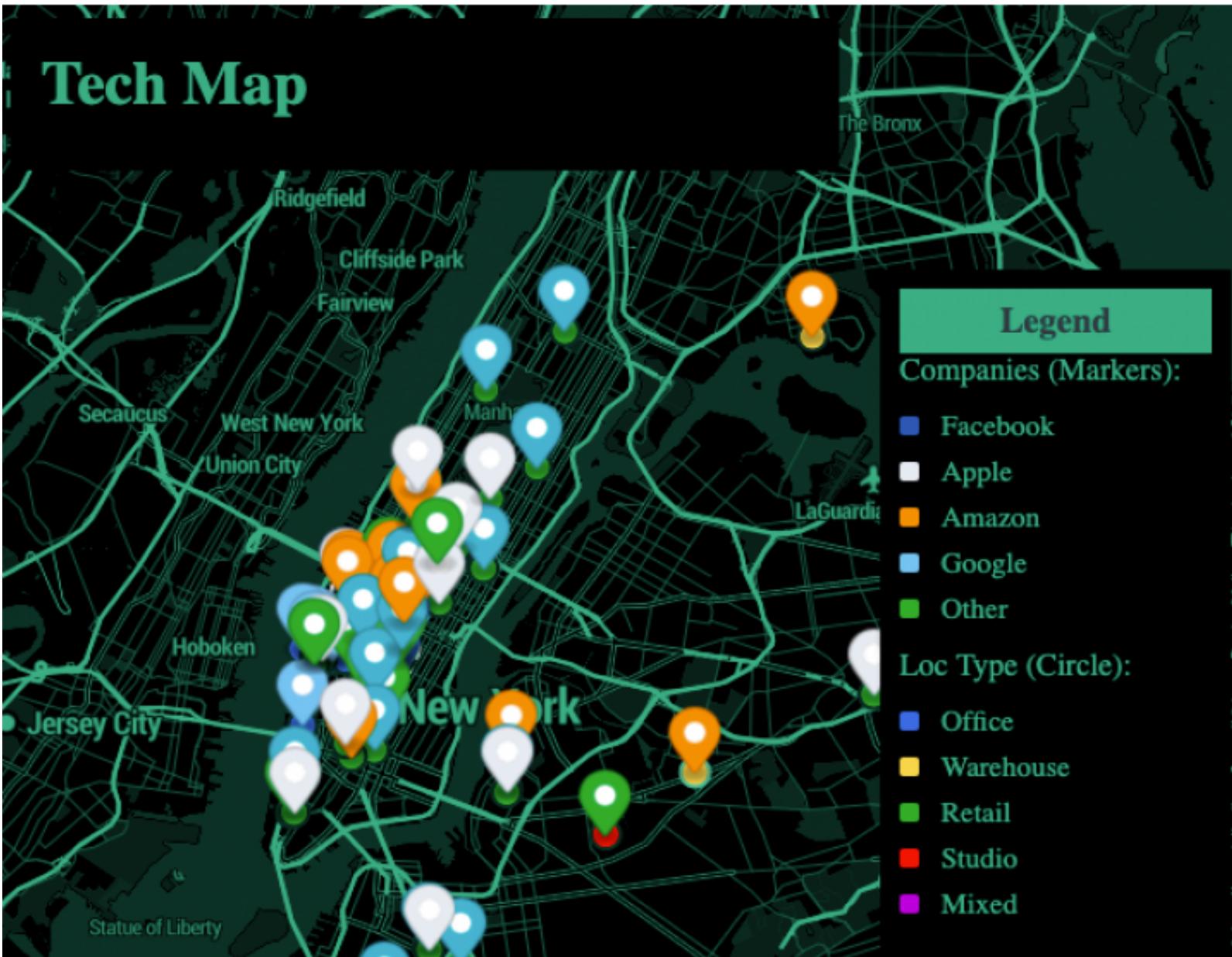
ALL STATIONS  
INFO TELL US...



TOP STATIONS  
LIST

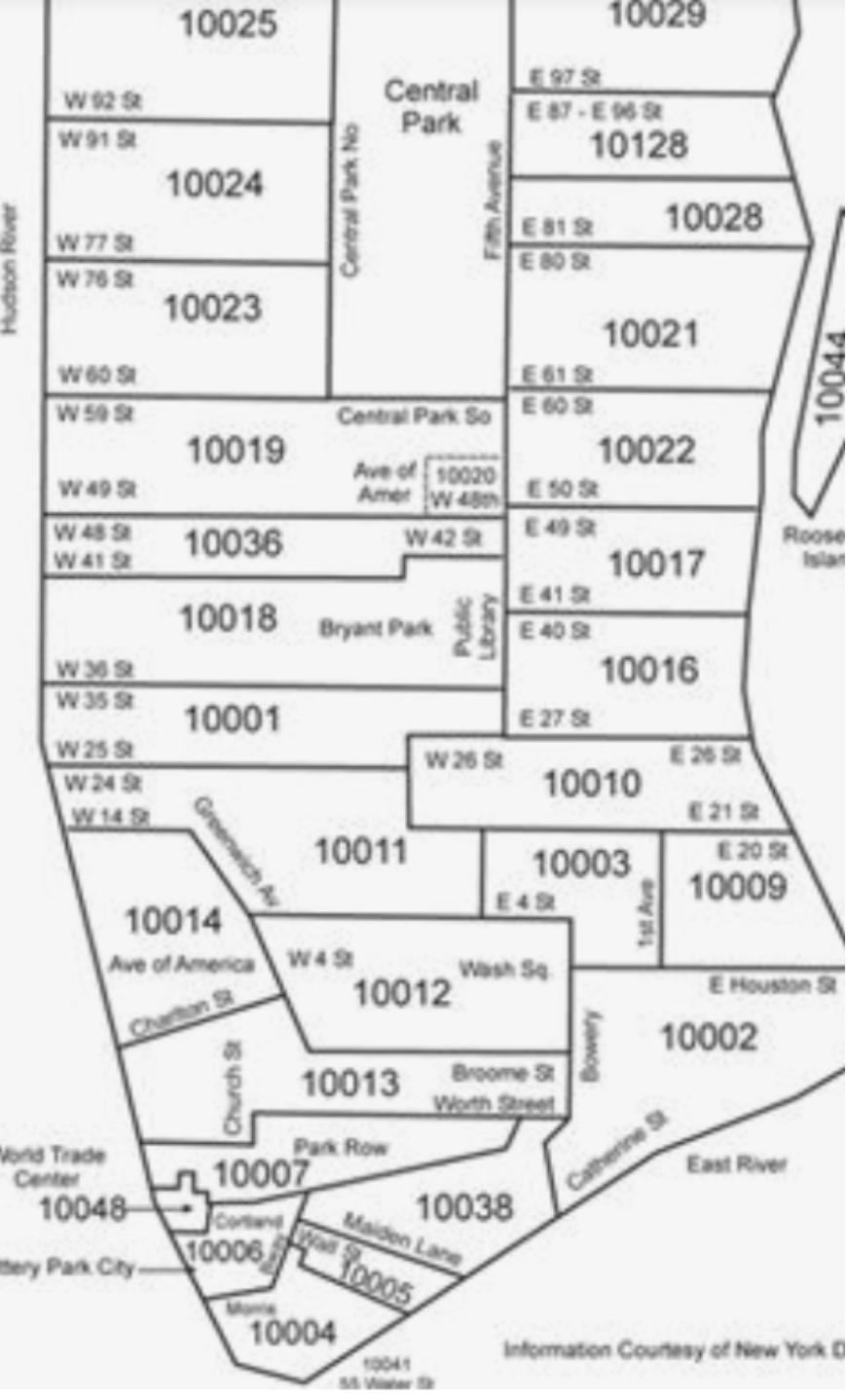


PEAK:  
FRIDAY!



# BIG TECH MAP IN NYC

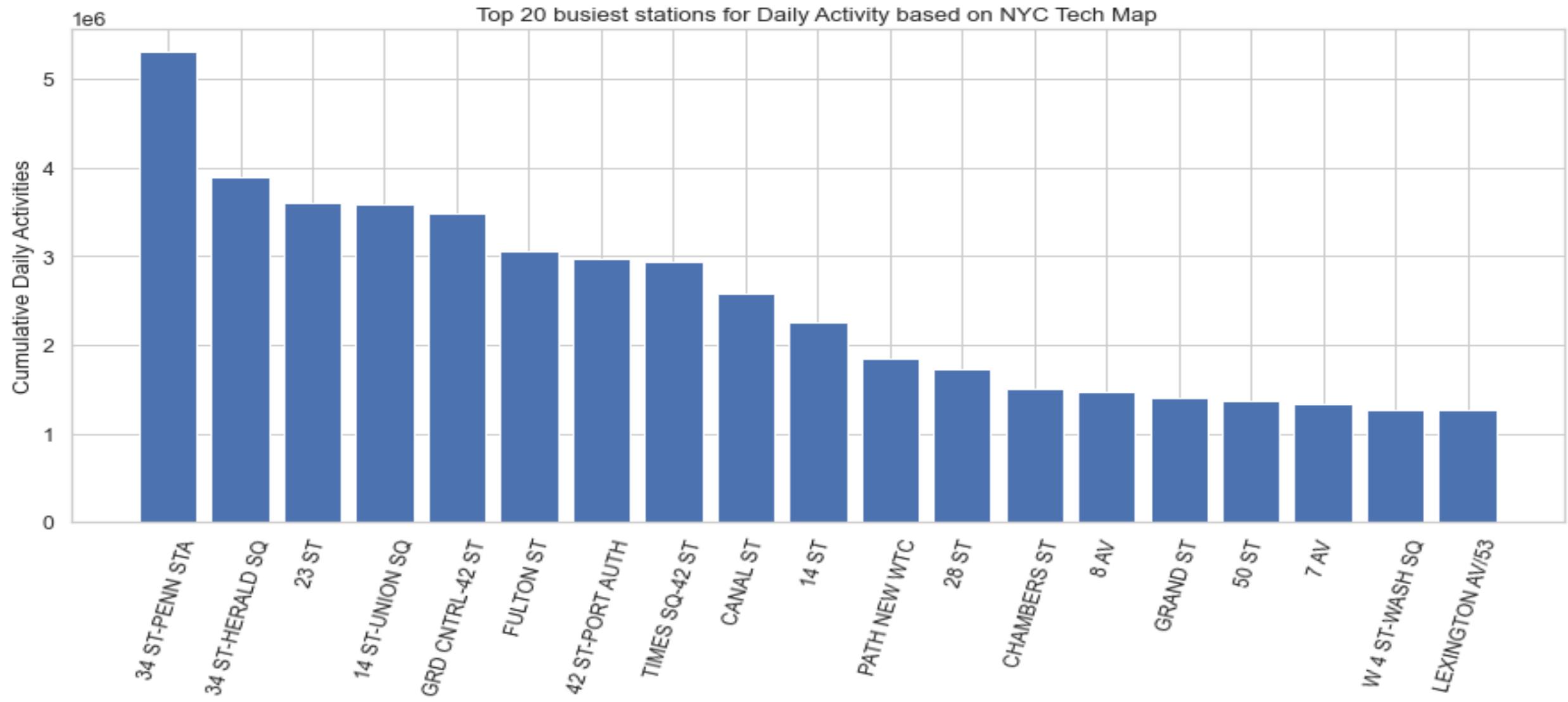
August 2019



## LOWER MANHATTAN ZIPCODES

- MOST OF THE MAJOR TECH FIRMS ARE LOCATED **BELOW CENTRAL PARK**
- MAYBE ITS WARMER IN THE SOUTH? – WILL NEED TO RUN REGRESSION ON THIS ☺

# TOP 20 STATIONS ON TECH MAP





# BEST STATIONS

#1 : 34 ST PENN STATION

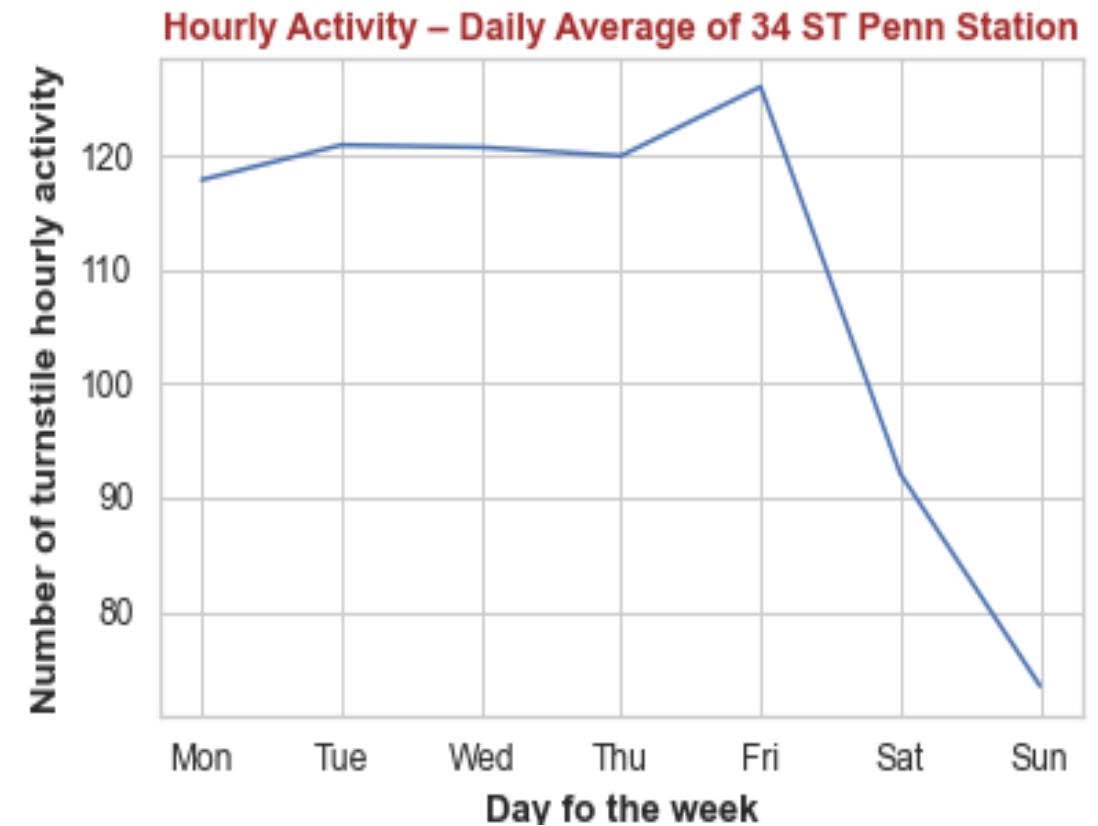
#2: 34 HEARLD SQ

#3: 23 ST



# TOP 1: 34TH PENN STATION BEST DAY ?

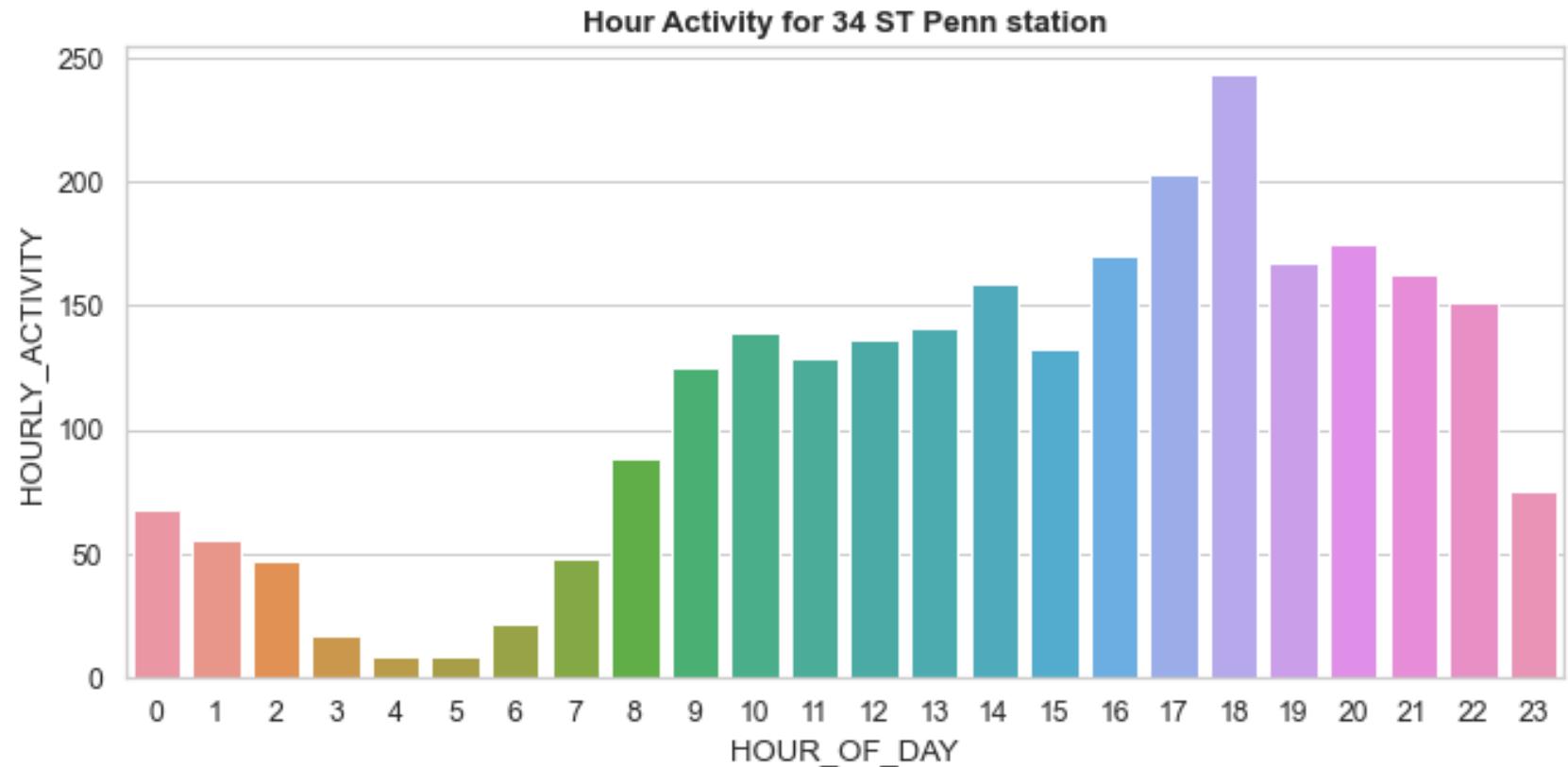
- **FRIDAY IS THE BUSIEST!**



# BEST HOUR?

■ 6PM

IS THE BUSIEST!



# CONCLUSIONS



1

34<sup>th</sup> Street Penn Station

2

Fridays (TGIF)

3

6pm (Workday's Over!)

# FUTURE WORK

PRE-COVID VS.  
POST-COVID  
ANALYSIS

# APPENDIX

- **Data Resource:** NYC MTA  
<http://web.mta.info/developers/turnstile.html>
- **Tech Map Reference:** The Real Deal real estate news
- **Zip code Data:** Kalu Uga