Determining the best locations for promotion and advertising

Introduction:

After the owner of an advertising startup contacted me about the problem they were facing which is locating the ideal locations for their ad campaigns and their desire to quickly reach a large number of people without huge financial costs, so the New York Metropolitan Transportation Authority was chosen to get into the details of where and when many of the People by Exploratory Data Analysis of entrances and exits recorded using turnstiles.

Dataset:

I will analyze the data through the Metropolitan Transportation Authority turnstile data for the New York subway (http://web.mta.info/developers/turnstile.html.) which is a series of data that contains the detailed data of entrances and exits by station, turnstile, date and time. Data files are produced weekly, and data logs are typically collected every 4 hours. I will use three months' data for my analysis to determine when and where a large number of people are present.

Steps:

- **Data Cleaning:** Drop the duplicate rows and check for any null values to delete them.
- **Exploratory Data Analysis** which include (visualizations of variable distributions, summary statistics (count, mean, sum), split-apply-combine methods)
- **For the time-based operation** I will add a new column that contain date and time.
- **Then**, I will arrange the stations and determine the most visited stations and then determine Total Traffic (Entries + Exits) by turnstile, station, date, time, day of week and location.
- **Finally,** I will explain this in graphic data to facilitate the identification of periods and places.

Tools:

- **SQLAlchemy** for ingesting the raw data into a SQL database and querying from that database into Python.
- Exploratory data analysis in **pandas**
- Python visualization libraries (such as **matplotlib** and **seaborn**)

Conclusion:

After the data analysis is completed, we will have a clear picture of all the places that will be ideal for launching promotional campaigns and offers even for a long period of time.