



Riyadh Metro New Schedule

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Introduction

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What is Riyadh metro?

Riyadh metro is a **rapid transit system under construction in Riyadh**, Saudi Arabia. It is part of the Riyadh Public Transport Project (RPTP), which is the largest public transport project. The RPTP comprises the construction of a metro network, a bus system and other transport services in Riyadh. ►

Problem understanding



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Overview:

The Riyadh Metro has a capacity of 1.16 million passengers per day, and includes 85 stations that transport many passengers at different times.

Problem statement :

The objective of this study is to use past application data to predict and optimize new schedule for Riyadh metro and avoid the crowd by estimating the rush hours in past 3 months in addition know which the most demand station by the passengers

Scope:

In view of solving the problem and obtaining a realistic result, we decided to use the MTA Turnstile dataset for the month of June, July and August for the year 2021

Data Validation



- ▶ I observe that the dataset does not contain NULL values.
- ▶ There some Duplications were found in the dataset
- ▶ There are some Negative values found after calculating the difference between the ENTRIES column.
- ▶ There are a few OUTLIERS in the DAILY ENTRIES Column.

The Graphs

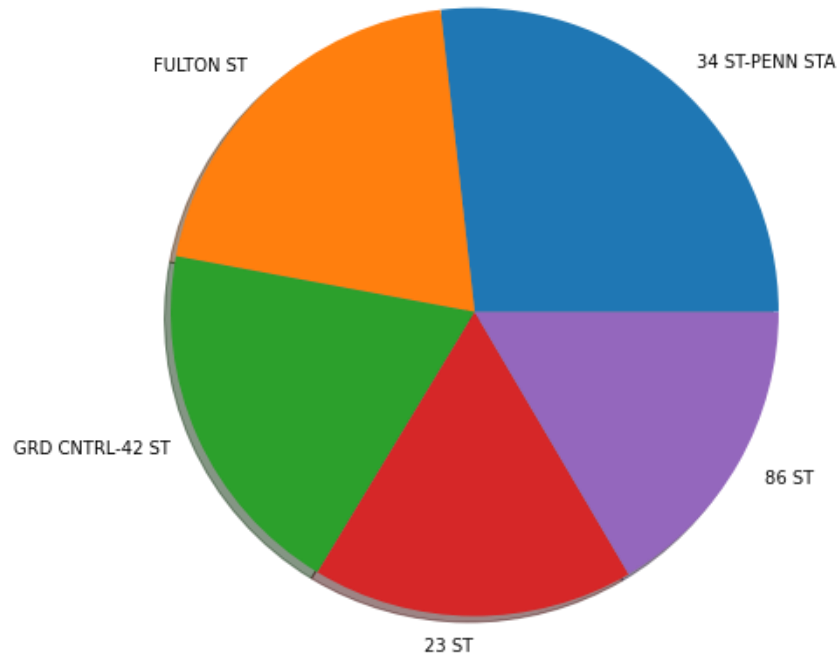


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This pie chart studies the relationship between the number of passengers in the three months and the most frequented stations

The Most Popular Stations



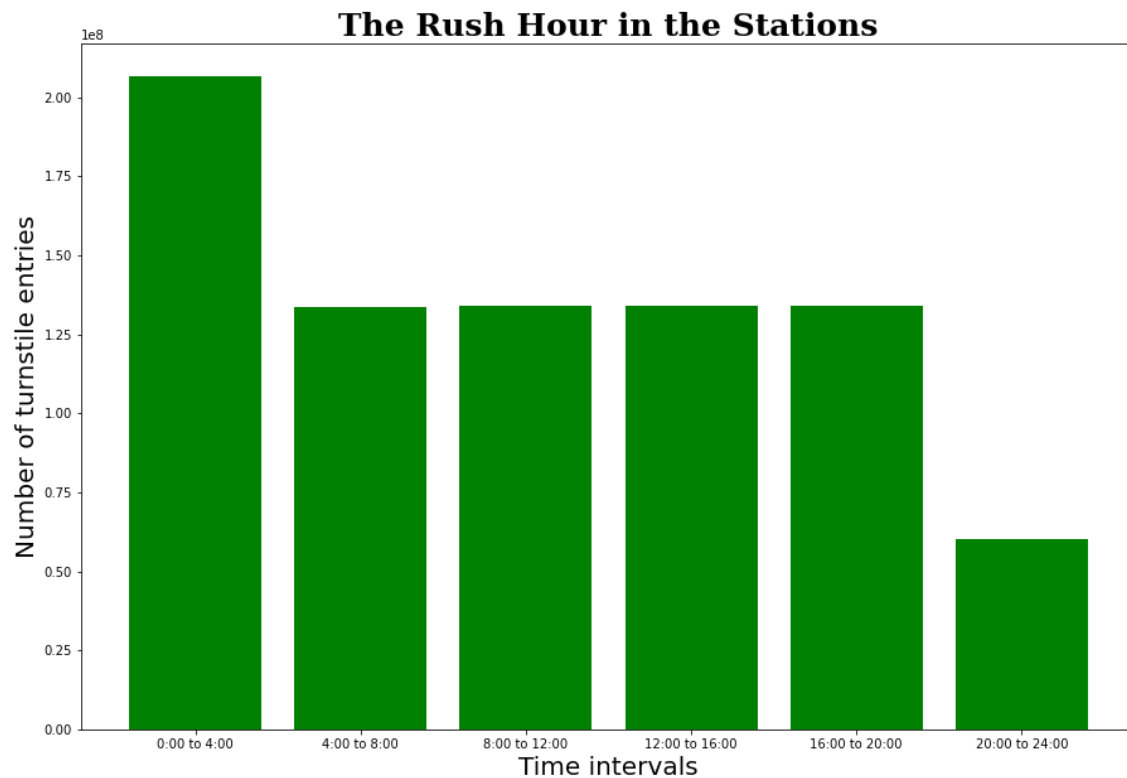
Observation:

We note here the five most requested stations by passengers, which are 34 ST-PENN STATION, FULTON ST, GRD CTRL-42 ST, 23 ST, 86 ST which means that the most passengers frequent these stations.

The Graphs



This bar chart represents the relationship between the number of passengers per time.



Observation:

We note here the most time interval requested by passengers, which are from 0:00 to 4:00 then from 4:00 to 8:00. which represent the metro's rush hours.

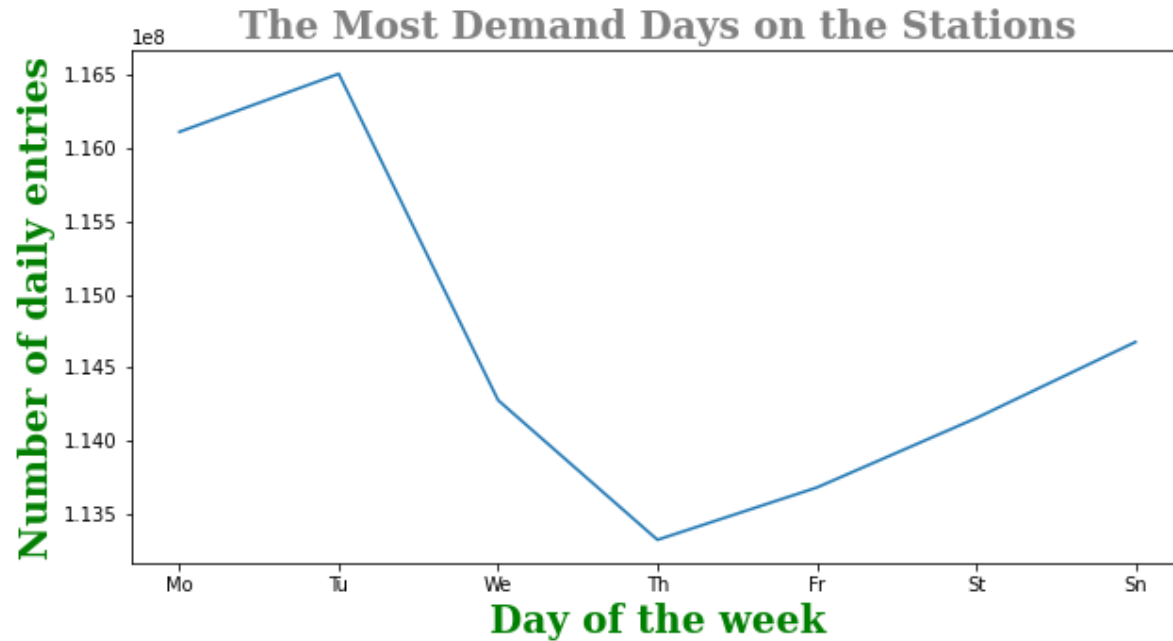
The Graphs



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This chart represents the relationship between the number of passengers per Day of the week.



Observation:

We note here the 3 most frequent days by passengers, which are in order Tuesday, Monday, then Sunday

Challenges



- Unclear columns.
- Large number of rows.
- Limited time.

Conclusion



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To avoid the crowd and increase the productivity of Riyadh metro, in addition, improve the quality to gain customer satisfaction.

We have to take into account the following criteria when creating the new schedule for Riyadh Metro:

- Increase the number of lines to the following stations (34 ST-PENN STATION, FULTON ST, GRD CTRL-42 ST, 23 ST, 86 ST).
- Increasing trips at the following times from 0:00 to 4:00 and from 4:00 to 8:00. especially on Tuesday, Monday, then Sunday.

Any Question?





Thank You! 