Class: May 12th, 2021 **SEIS 603-04:** Foundations of Software Development-Python

Instructor - Prof. Eric Level **Final Project –** Elevator Speech Shivali Dalmia

Project title: Uber demand supply gap analysis for Bengaluru, India for the year 2016.

Description: This analysis aims to address the customer issue of ride cancellation (by driver) and non-availability of the cars faced by Uber.

Challenges: Understanding the correct use of different plots in matplotlib and seaborn libraries.

Project work:

- Exploratory data analysis on a masked data set using standard python libraries such as, NumPy, Pandas.
- Optimization of different data points like request status, drop and pickup timestamps.
- Visualization using Matplotlib based graphs to assess the gap between demand and supply of cabs.

Results: Maximum demand-supply gap exist in the early evening (5pm-8pm) and the early morning hours (1am-7am).

Table 1. Demand-supply request completion gap for evening and early morning

	Request time slot	
	Evening (From airport)	Early Morning (From city)
Demand	1457	1310
Supply	312	396
Gap	1145	914

Conclusions:

- Trips to and from the airport resulted in high consumption of fuel and time. Hence, a trip back to the city without a rider is not economically beneficial for the driver.
- Due to high variance in flight arrivals (higher during evening, late night hours) the driver idle time at airport is higher in the morning hours. As a result, no cars are available in the city region.

Tools: Anaconda Navigator-JupyterLab 2.2.6, Python 3.8.5, Python libraries – NumPy 1.19.2, Pandas 1.2.3, Matplotlib 3.3.4, Seaborn 0.11.1.

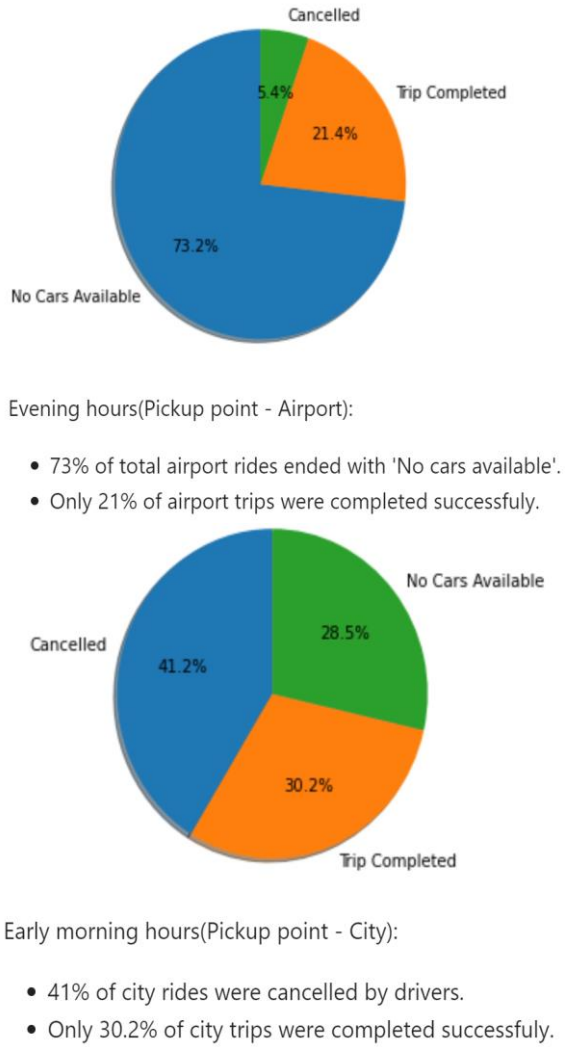

Figure 1. Pie charts showing request status in the evening for rides from the airport (top) and in the early morning for rides from the city (bottom).