

EDA - PROJECT REPORT 3.

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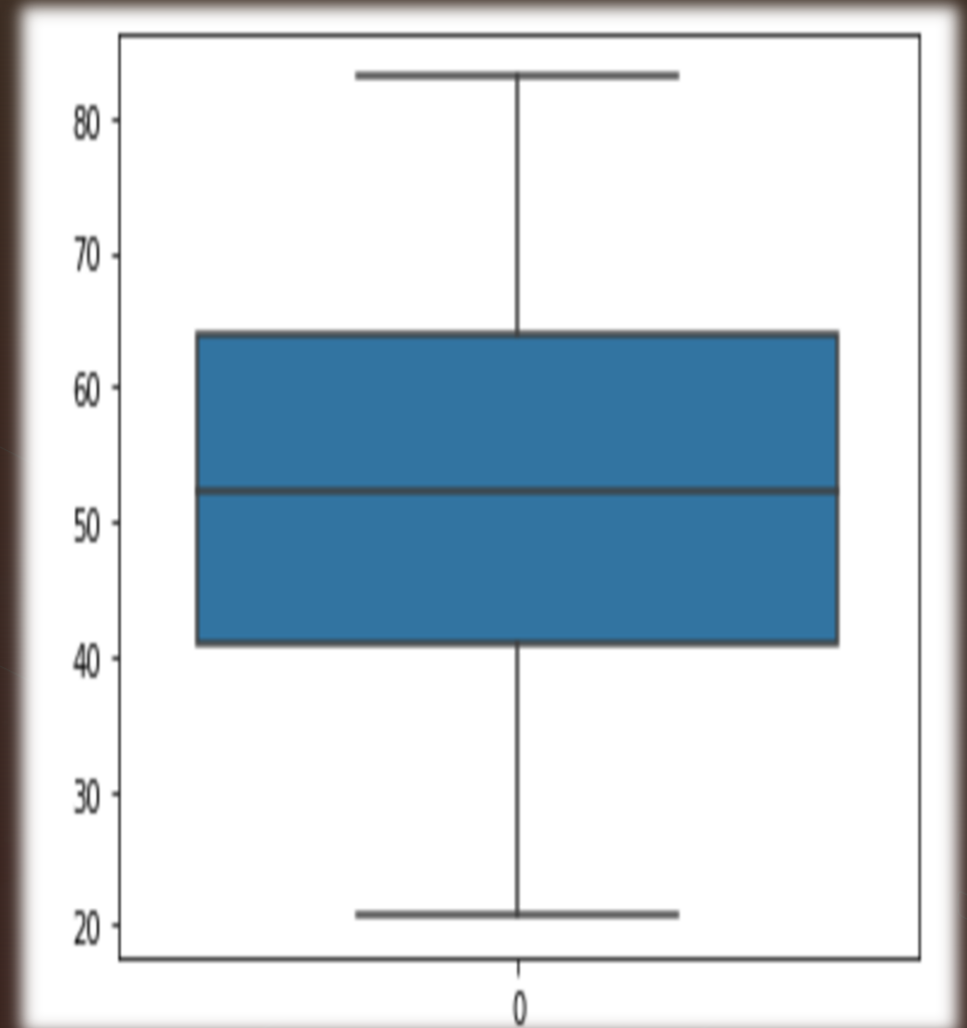
Roll No. : RK20RUA07.

Section : K20RU.

Submitted To : Abhijeet Dutta Sir.

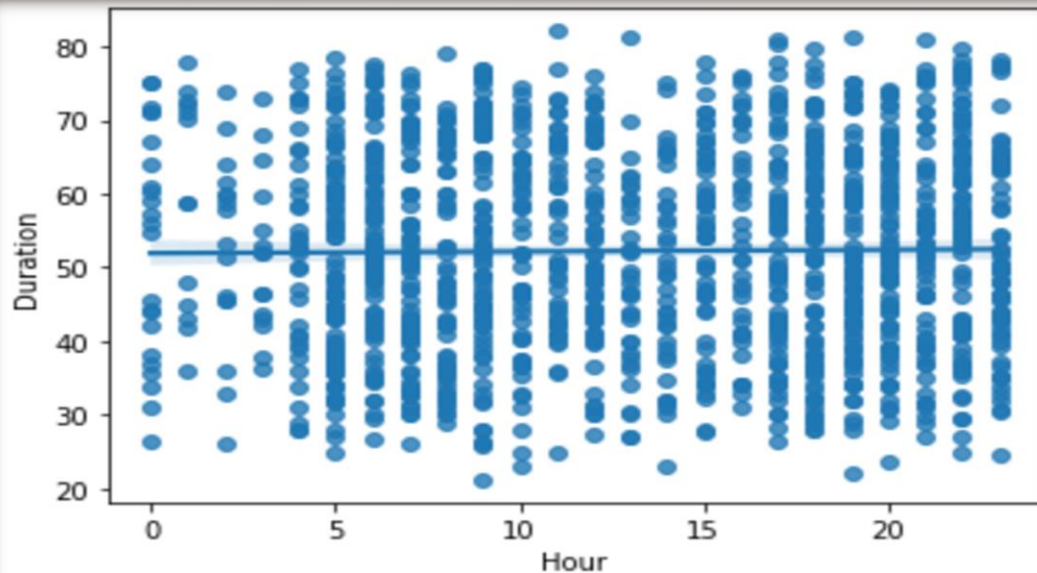
Let's check if we are having some irregularity in duration of the trip i.e. checking duration from city to airport and from airport to city.

- So we plotted a box plot to check if we are having any outliers in duration field.
- So we can't see any outlier here.
- Which basically means that time taken from city to airport and from airport to city for a trip is somewhat same.

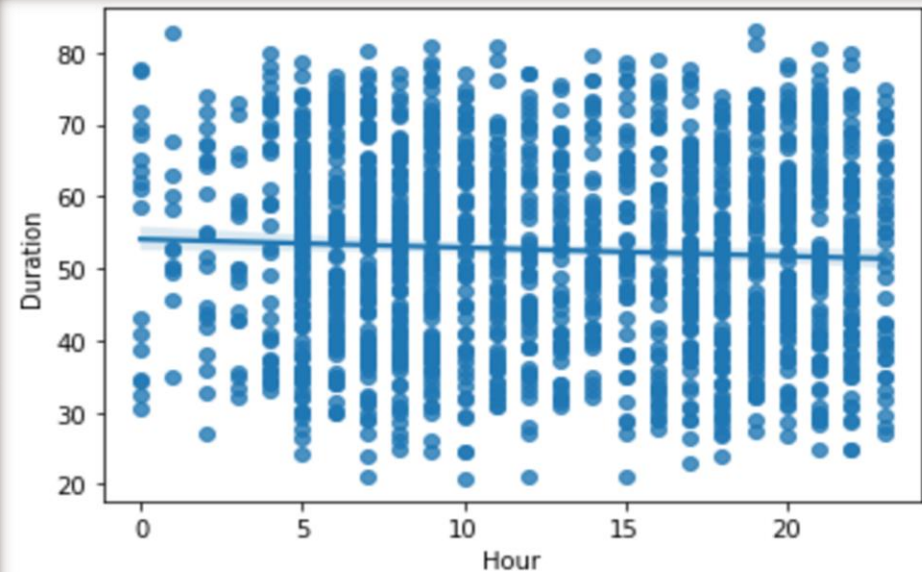


Checking if traffic is hampering the trip to get successful.

For airport to city :-



For City to Airport :-



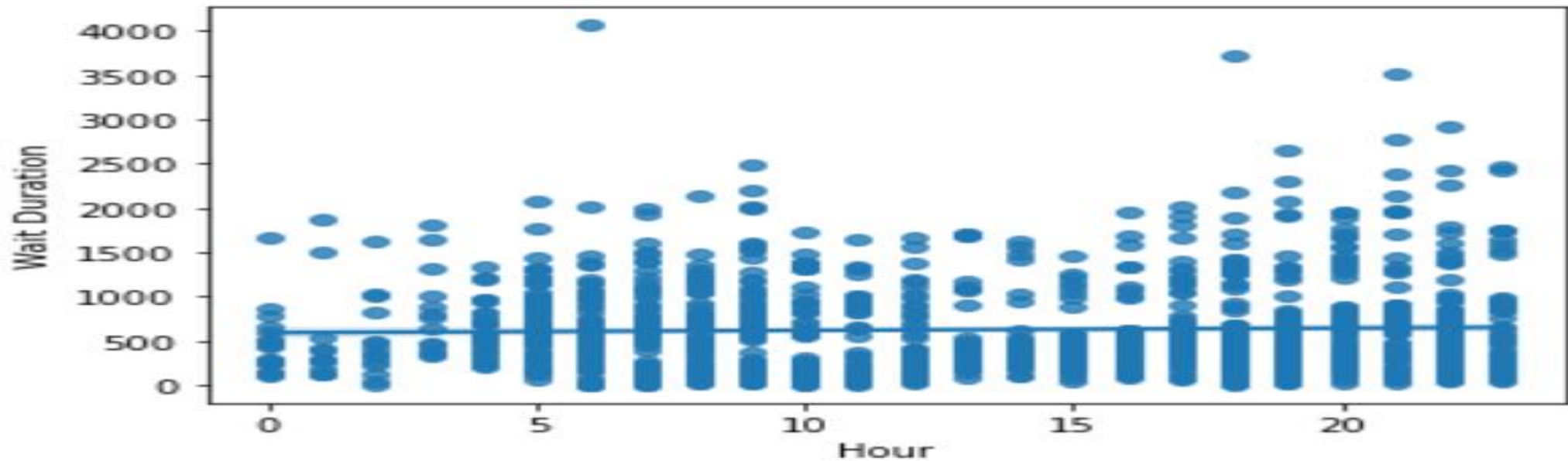
- So by plotting the graphs we can see that the duration for city to airport and from airport to city is somewhat same which is around between 50 – 60 minutes.
- So we can conclude that the traffic is not the problem for the uber, which is unable to successfully complete the trip either by no cars available or by driver cancelling the trip.

Now let's check one another possible which can be possible, which is waiting time for the next trip.

| | Request id | Pickup point | Driver id | Status | Request timestamp | Drop timestamp | Duration | Slot | Hour | Day | Wait Duration |
|---|------------|--------------|-----------|----------------|---------------------|---------------------|----------|---------|------|-----------|---------------|
| 1 | 867 | Airport | 1 | Trip Completed | 2016-07-11 17:57:00 | 2016-07-11 18:47:00 | 50.0 | Evening | 17 | Monday | 297.0 |
| 2 | 1807 | City | 1 | Trip Completed | 2016-07-12 09:17:00 | 2016-07-12 09:58:00 | 41.0 | Morning | 9 | Tuesday | 870.0 |
| 3 | 2532 | Airport | 1 | Trip Completed | 2016-07-12 21:08:00 | 2016-07-12 22:03:00 | 55.0 | Night | 21 | Tuesday | 670.0 |
| 4 | 3112 | City | 1 | Trip Completed | 2016-07-13 08:33:16 | 2016-07-13 09:25:47 | 52.5 | Morning | 8 | Wednesday | 630.3 |
| 5 | 3879 | Airport | 1 | Trip Completed | 2016-07-13 21:57:28 | 2016-07-13 22:28:59 | 31.5 | Night | 21 | Wednesday | 751.7 |

- So added a new feature to the dataset i.e. Wait Duration which basically is the time difference of drop time of last trip and request time of new trip from the same location.

Let's Visualize the Wait Duration Column.



- Inference : Here we can see that mean waiting time is approximately 646 minutes.
- Inference : Wait time for next rides from airport is comparatively high during 5am to 9am. The same is seen during 7pm to 11pm.

➤ PROBLEM SUMMARY.

- We have comparatively high wait time at Airport during early-morning, morning and also during evening, night.
- Cab drivers may not prefer to take bookings in city for airport in order to avoid waiting time at airport, waiting for next ride.
- Thus, Driver Wait Duration could be causing problems faced by Uber.

SOLUTION SUMMARY.

- For addressing early morning and morning 'Cancelled' rides
 - Penalty for driver cancelling Airport booking thrice a day
 - Provide incentive to drivers for Airport Rides / Airport Wait Duration
- For addressing 'No Car Available' issue at Airport in evening and night
 - Airport Rides can be given weightage of 1.5 ride count
 - Exempt drivers with Airport Rides from daily minimum rides
- For addressing 'No Car Available' issue in City during early morning and morning
 - Provide incentive to drivers for Airport Rides / Airport Wait Duration
- And company can add some more users(cab drivers) in team. [Not profitable decision though]

Thank You!

