Uber Supply-Demand Gap

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Problem Statement

- Determine area of concern for driver cancellation or non-availability of car

- Provide recommendation to improve the overall situation

Data:

- File - Uber Request Data

- Columns - Request id, Pickup point, Driver id, Status, Request timestamp, Drop timestamp
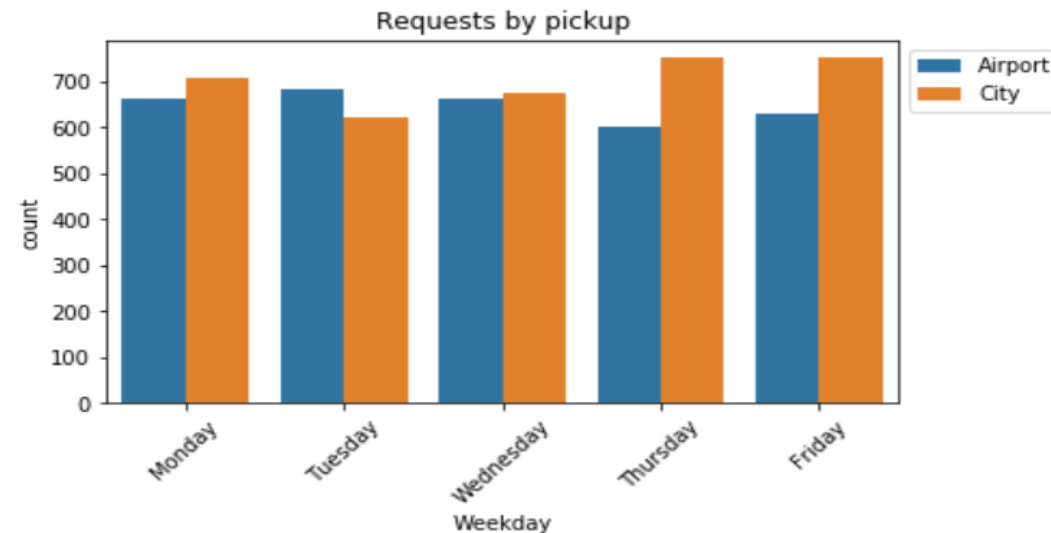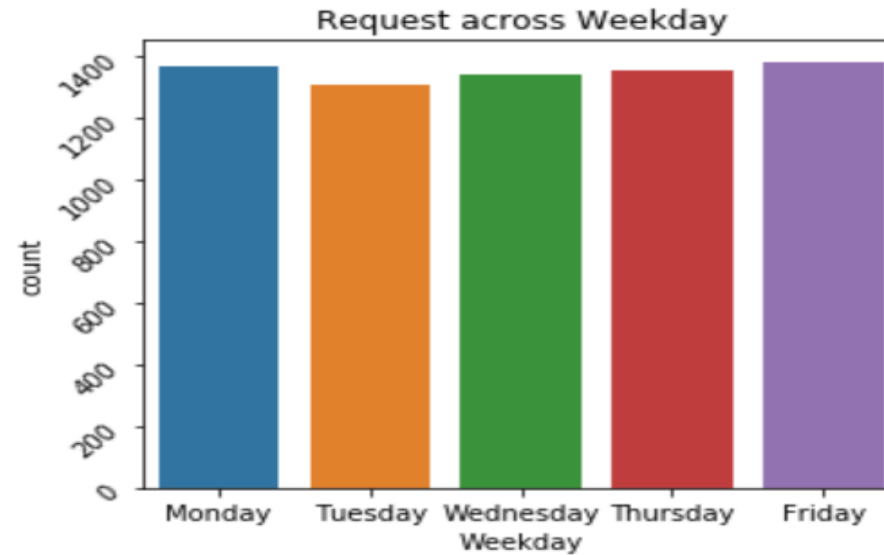
- Rows – 6745 records

Status	Count
Cancelled	1264
No Cars Available	2650
Trip Completed	2831
Grand Total	**6745**

Assumptions:

- Date is in DD/MM/YYYY HH:MM or DD-MM-YYY HH:MM:SS format

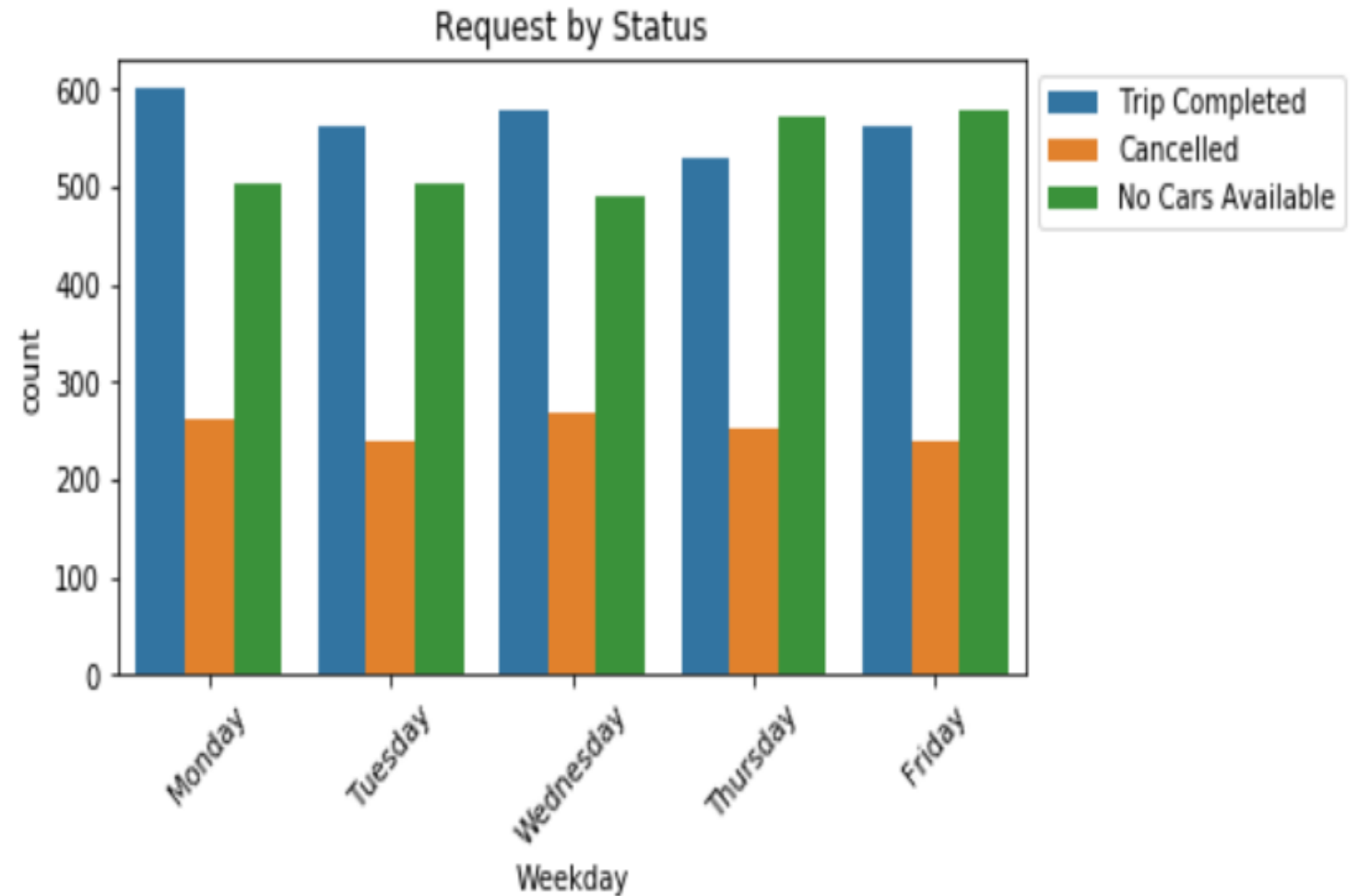- NA in Drop timestamp is because of "Cancelled" or "No Cars Available" status.

Requests across weekday and Request by Pickup

- Number of request is consistent across weekdays

- There are no request over the weekend. Note – This is because of the sample data and not to be misunderstood that there are no booking over weekend.

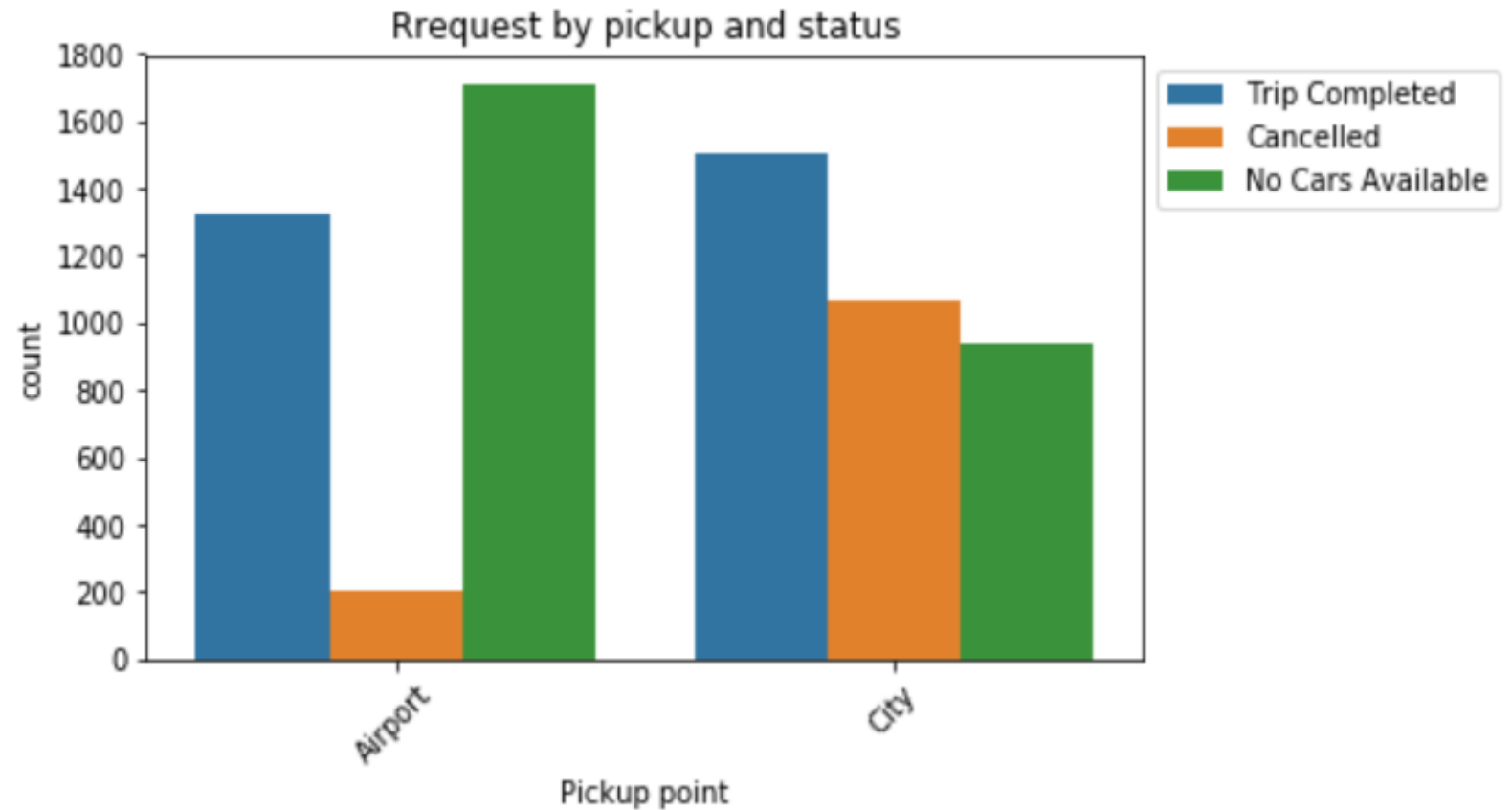- Thursday and Friday have higher demand from City.

Requests by Status and Weekday

- Number of request getting cancelled is consistent across weekdays

- Requests completed on Thursday and Friday is slightly less than other weekdays.

- Number of requests deemed "No Cars Available" is greater than actual request completed on Thursday and Friday
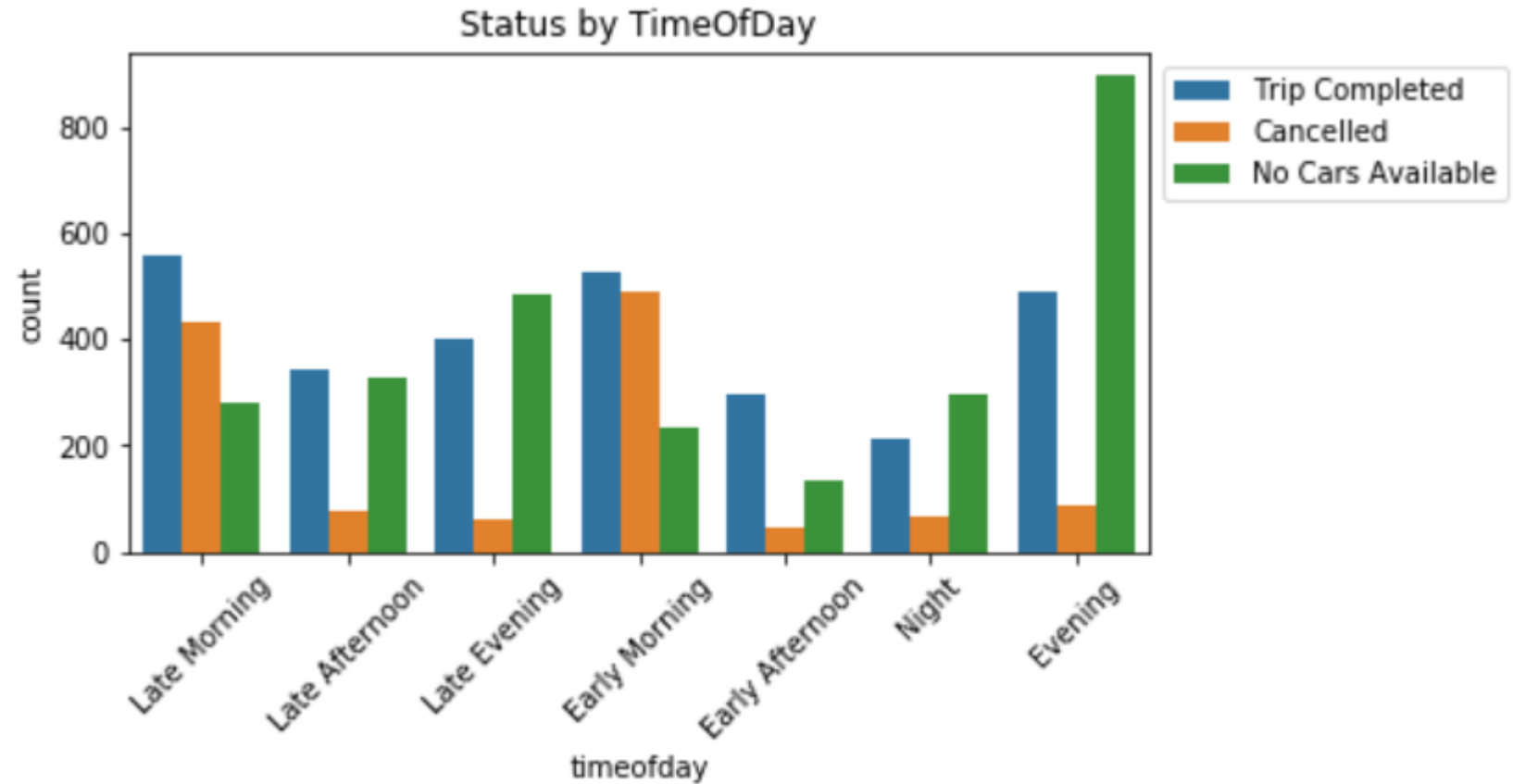
Request by Status

Requests by Pickup and Status

- Number of requests deemed "No Cars Available" is significantly higher for Airport pickup

- There are less cancellation from Airport pickup

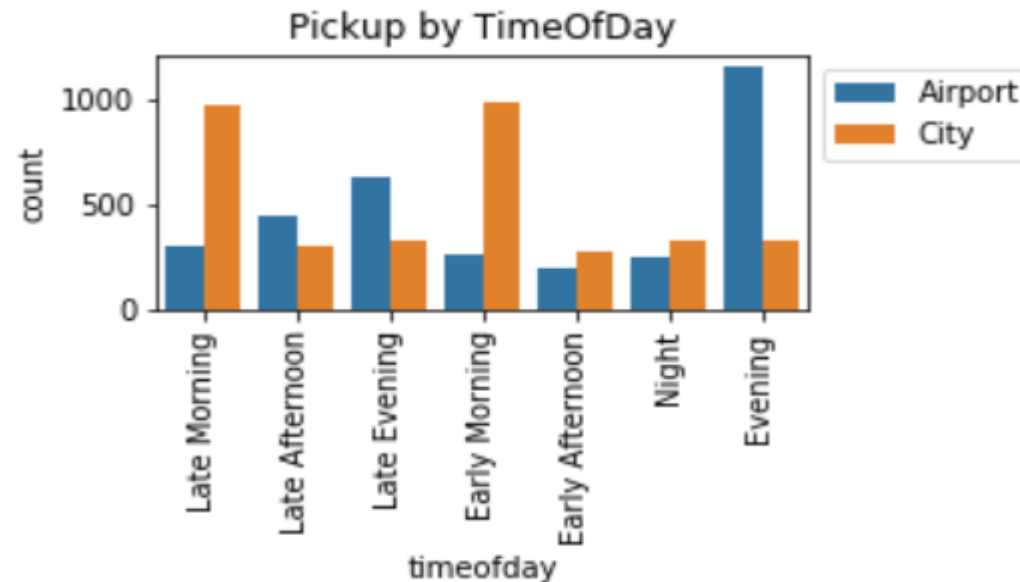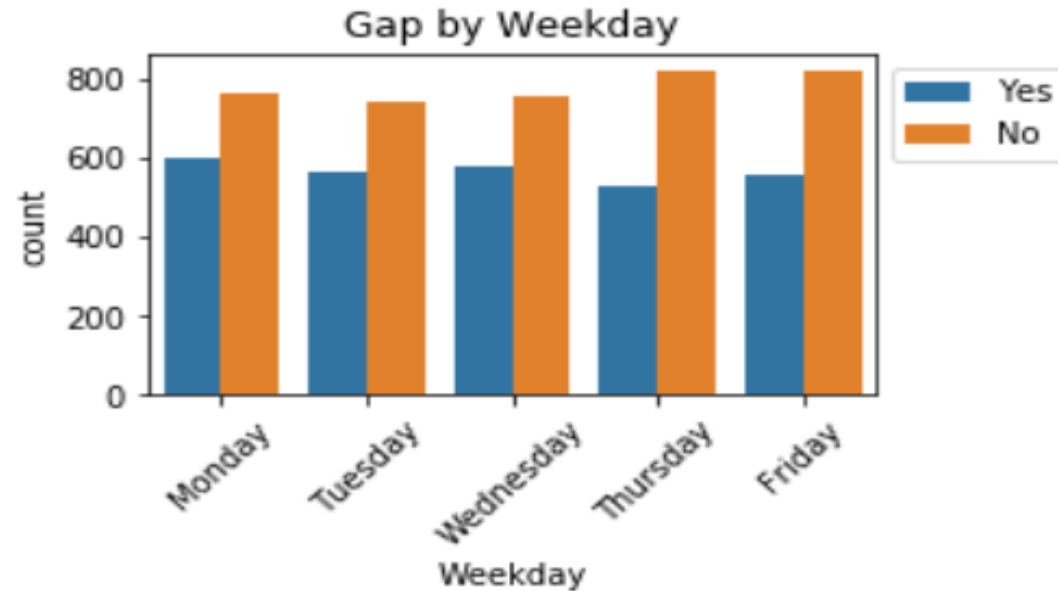- Cancellation for City pickup is significantly higher than Airport pickup

Request Status by Time of Day

- Car availability in evening is major issue.

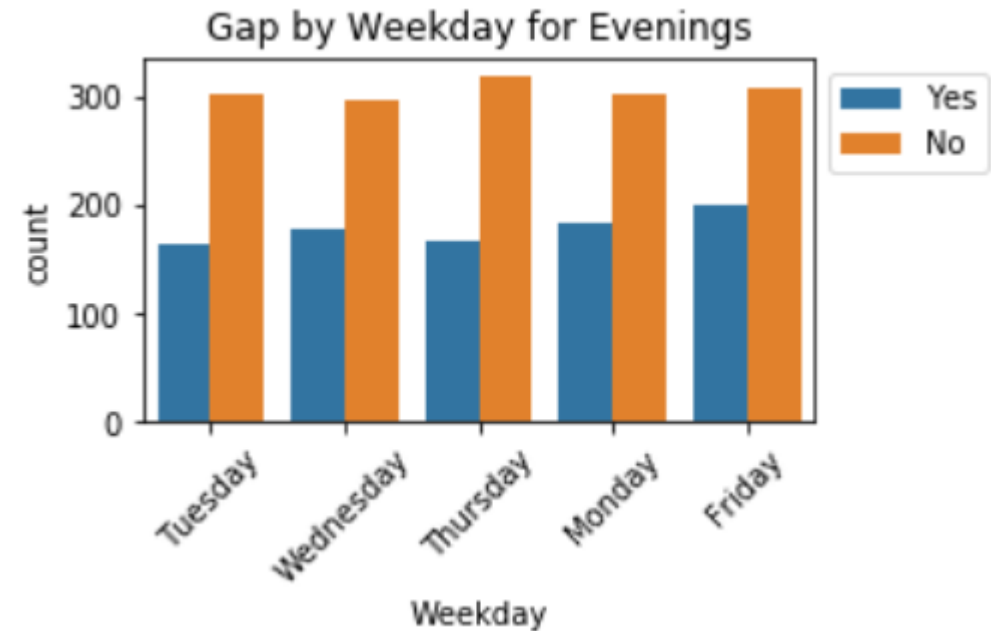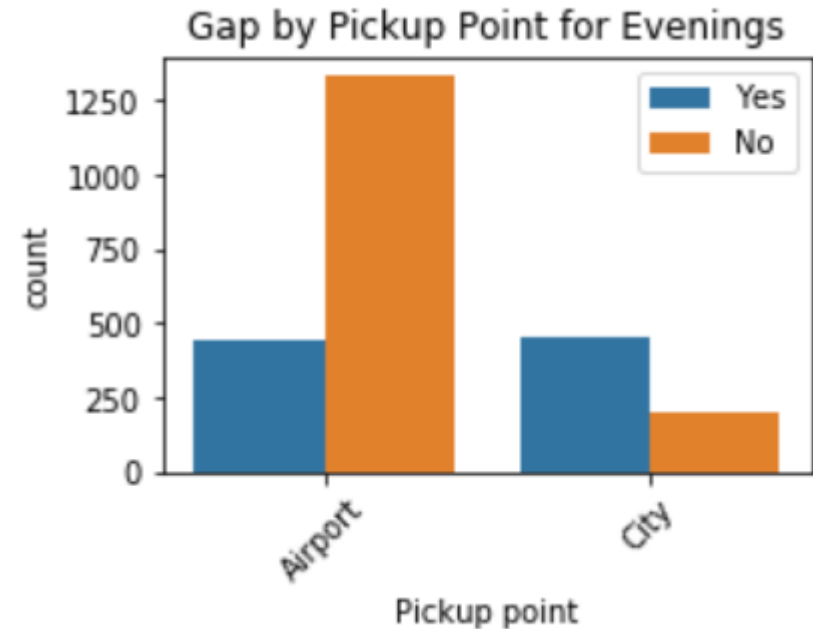- Trip cancellation is Major issue during Morning time

Status by TimeOfDay

Gap by Weekday and Time of Day

- Demand Supply Gap is marginally higher on Thursday and Friday
- Demand-Supply Gap is significantly higher in evening
- Legend:
  - Yes – Request fulfilled
  - No – Request not fulfilled

Uber Supply-Demand Gap

Gap by Pickup Point and Weekdays for Evening timeslot

Gap by Pickup Point for Evenings
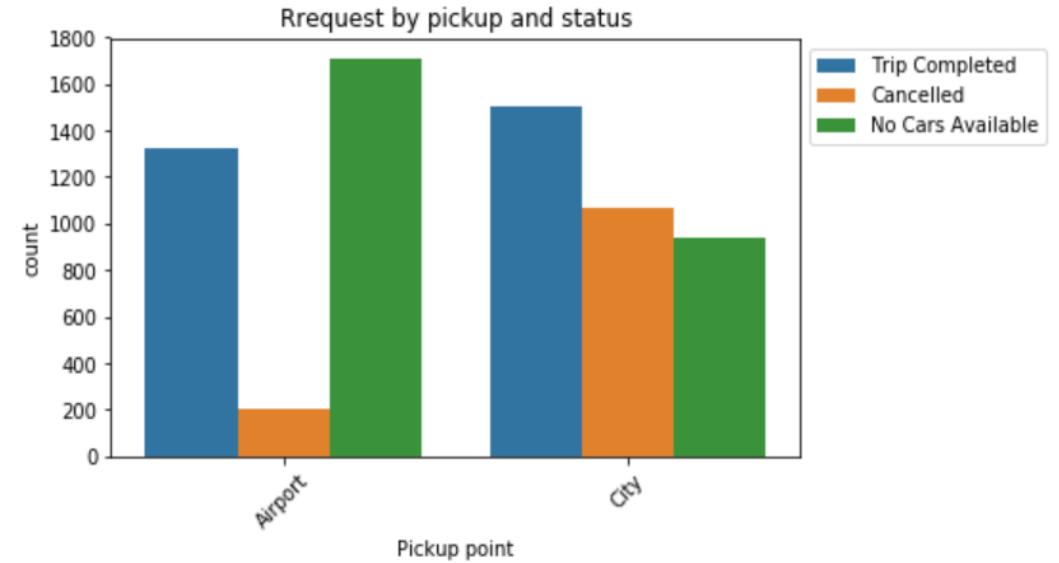

Gap by Weekday for Evenings

- Demand Supply Gap is significantly higher for Airport pickup during Evening.

- Consistent Demand-Supply Gap is on Weekdays indicate shortage of cabs in Evening.

- Legend:
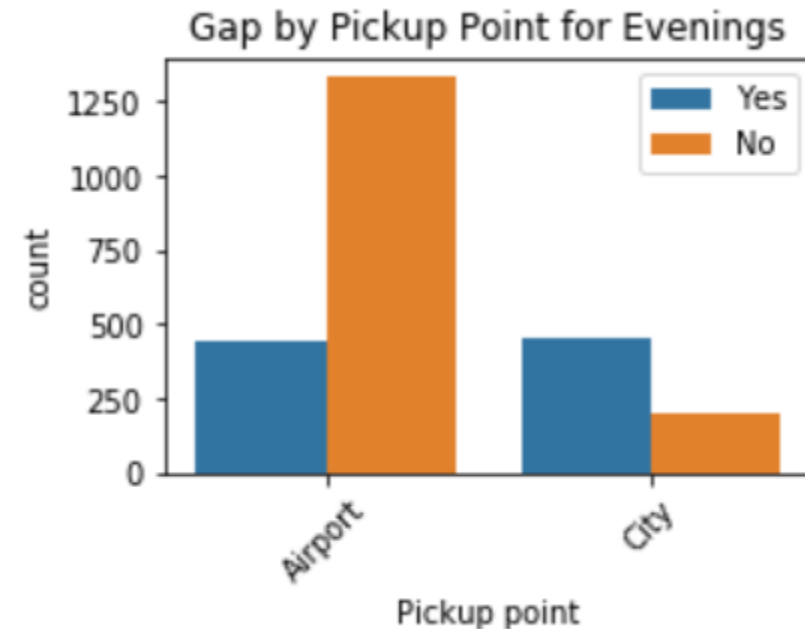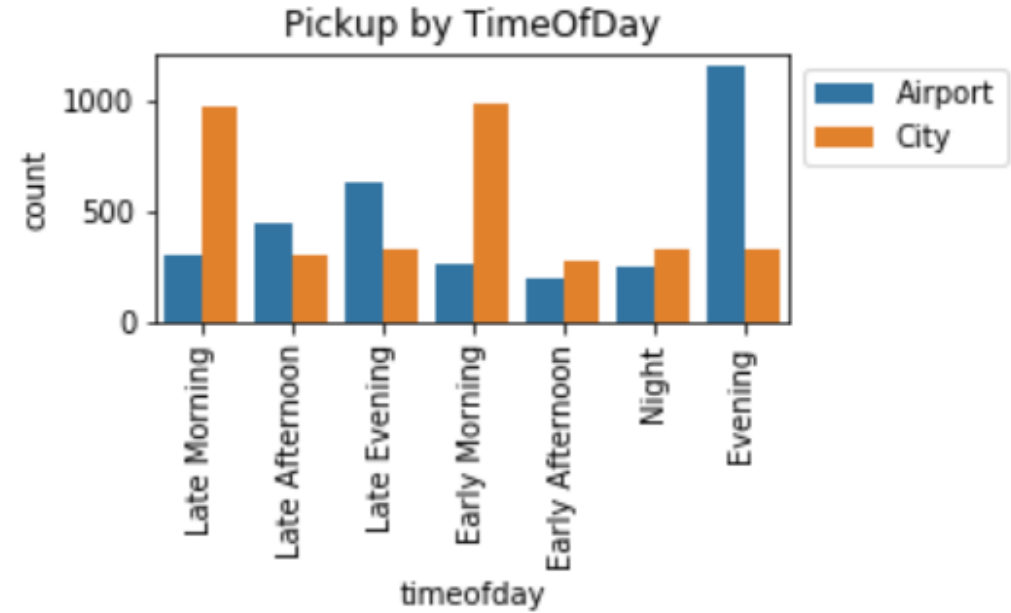 - Yes – Request fulfilled
  - No – Request not fulfilled

Supply-Demand Gap

- Number of requests getting cancelled for City pickup is leading to less supply for Airport Pickup.

- Availability of car is significant issue across entire population.

Recommendations

Pickup by TimeOfDay

- Increase car availability in Evening for Airport pickup. This will not only meet the Airport pickup spike but will also increase the car availability for City pickup for Morning.

- Reduce cancellation from City during evening to increase availability for Airport pickup.

- Less Availability of Cars indicate less Supply and is good indicator for increasing the car fleet.

- Legend:
  - Yes – Request fulfilled
  - No – Request not fulfilled

Gap by Pickup Point for Evenings

Summary

- Entire analyses and plots are done using Python3. The code is attached below.

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Uber Supply-Demand Gap - Assignment.ipynb

- Supply-Demand is pressing issue for Evening timeslot.

- Availability of Cars indicate less Supply and is good indicator for increasing the car fleet.

- Of 6745 requests analyzed, only 42% of requests are getting completed. 58% is missed opportunity and hence missed revenue.

Status	Count	%
Cancelled	1264	19%
No Cars Available	2650	39%
Trip Completed	2831	42%
Grand Total	**6745**	