

Uber Supply and Demand Gap

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Business Objective

- The Aim of analysis is to identify the root cause of the problem , i.e Cancellation and non-availability of cars.
- Recommend some ways to improve the Solution.

Limitations

- Consider the trip TO and FROM the airport

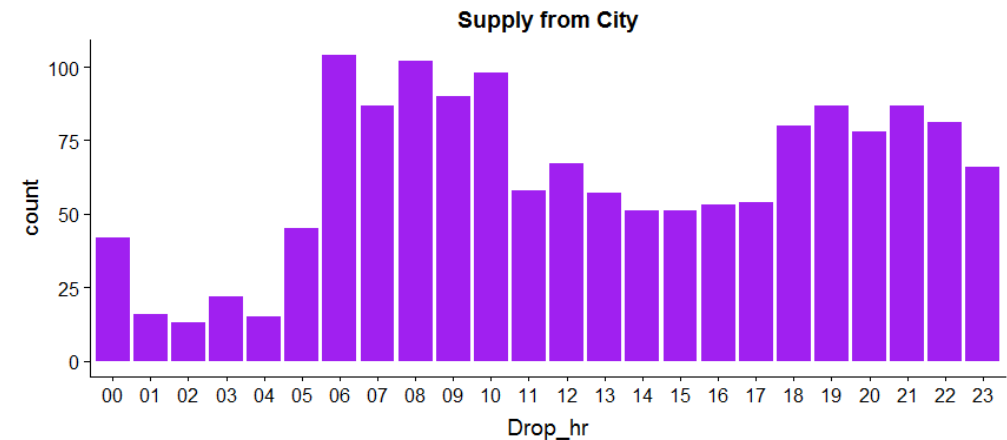
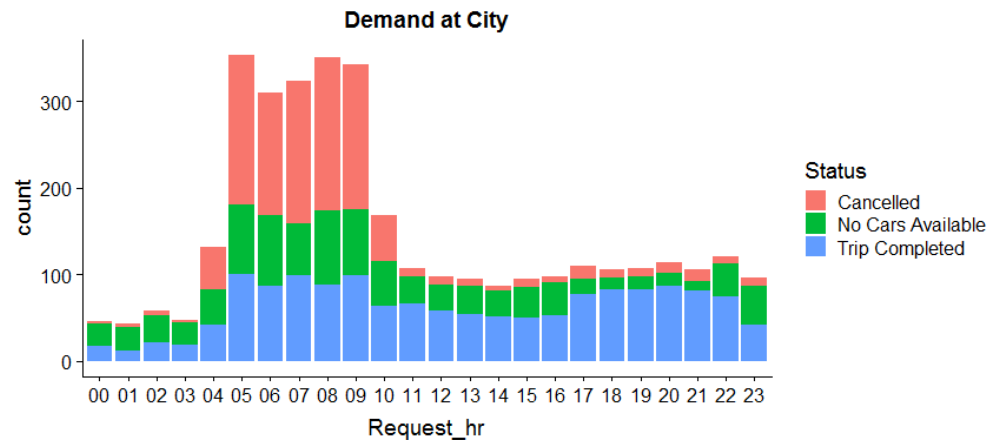
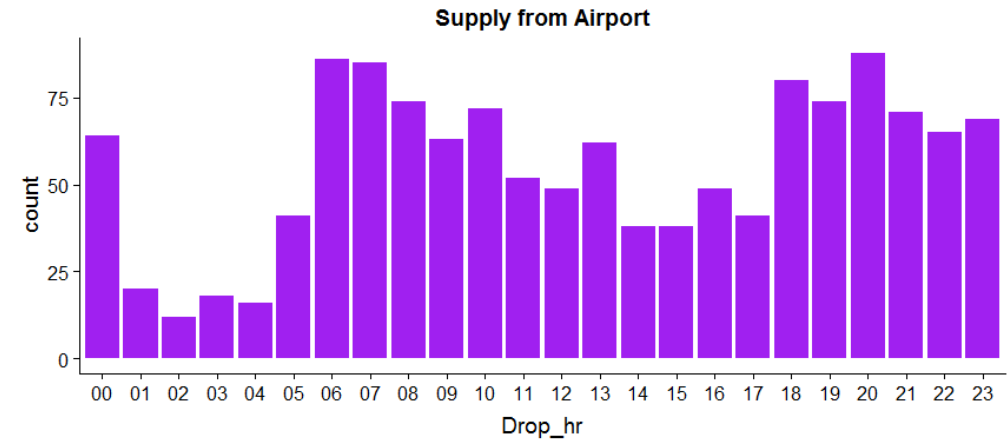
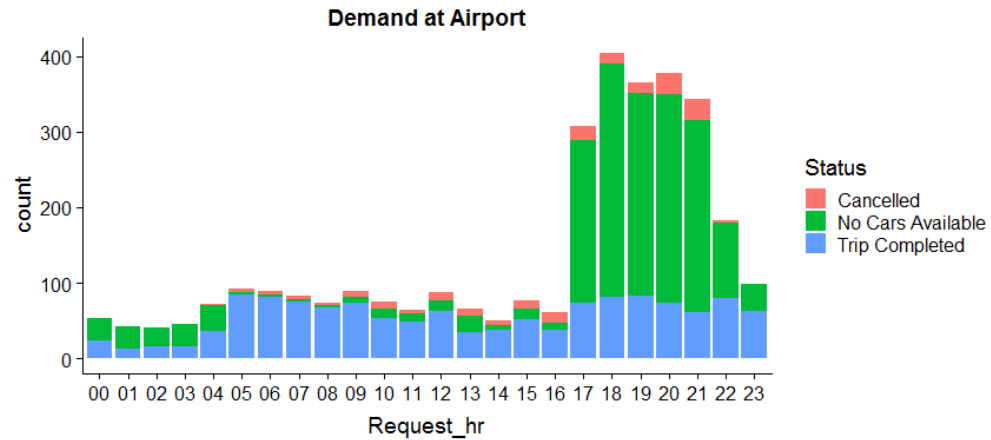
Understanding the Data

- There are six attributes associated with each request made by a customer
 - Request id: A unique identifier of the request
 - Time of request: The date and time at which the customer made the trip request
 - Drop-off time: The drop-off date and time, in case the trip was completed
 - Pick-up point: The point from which the request was made
 - Driver id: The unique identification number of the driver
 - Status of the request: The final status of the trip, that can be either completed, cancelled by the driver or no cars available

Process for Analysis

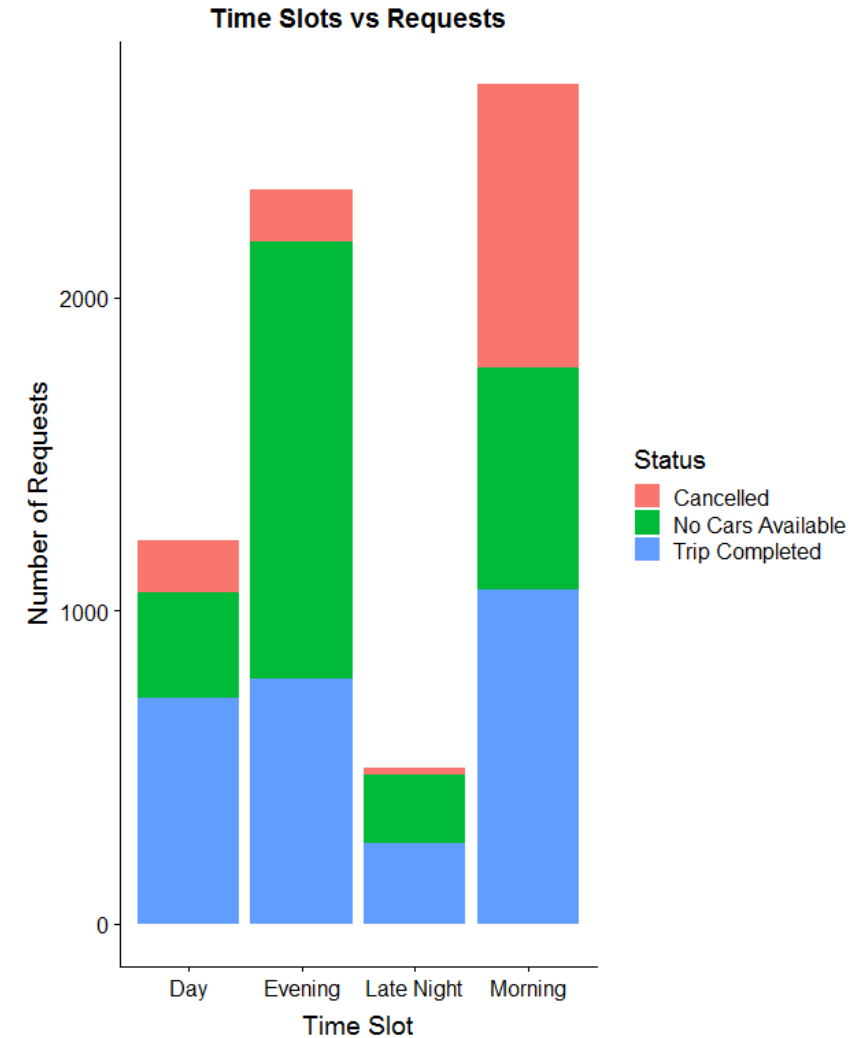
- Import the data set in R
- Clean and Format the data
- Correct the data and time formats
- Derive the new columns using existing date and time column
- Filter the data set with Trip Status, Pickup point and Time slot
- Analyze the data
- Plot the results and understand the Root cause

Trend in Supply and Demand(With Status) From Airport and City



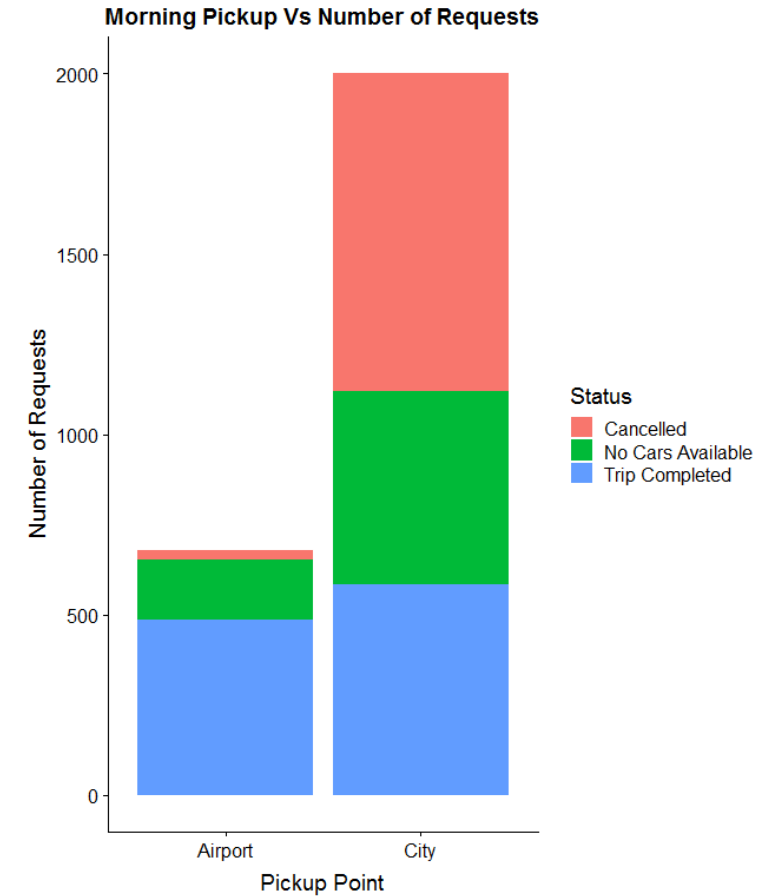
Requests Analysis based on Time Slot

1. Divided the Time slots based on the Hours.
 - <10 AM – Morning
 - <5PM – Day
 - <10PM – Evening
 - >10PM – Late night
2. This Plot shows the number of requests made in each Time Slot
3. **Morning** and **Evening** time slot have more number of requests.



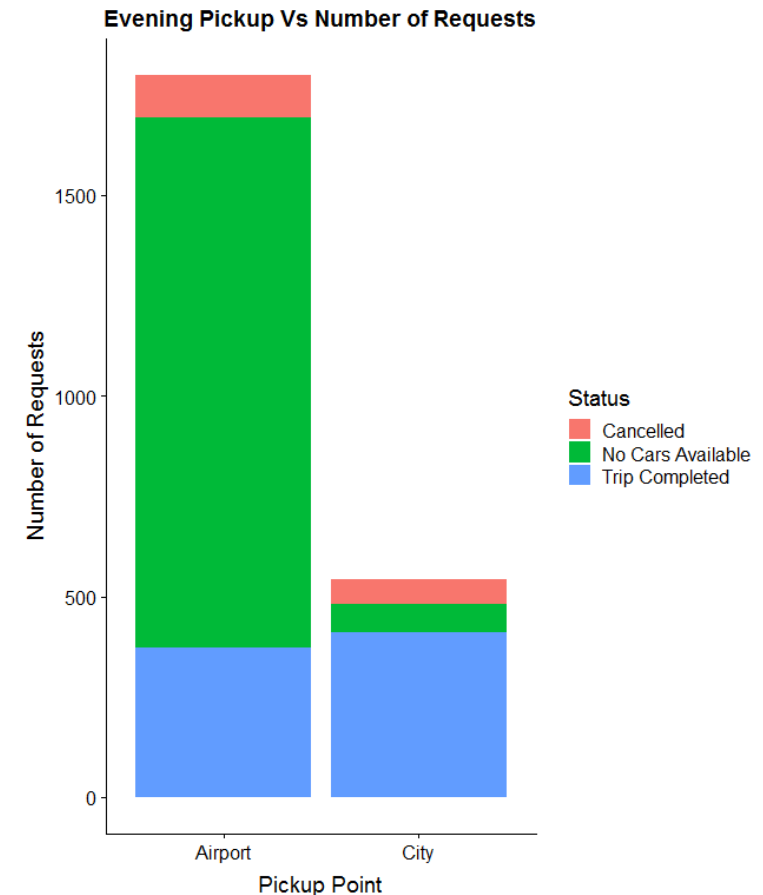
Requests Analysis - Morning Time Slot

1. This plot shows the morning pickup from Airport and City.
2. More number of requests are from City.
3. Cancellation trips are higher in the Morning time slot from City



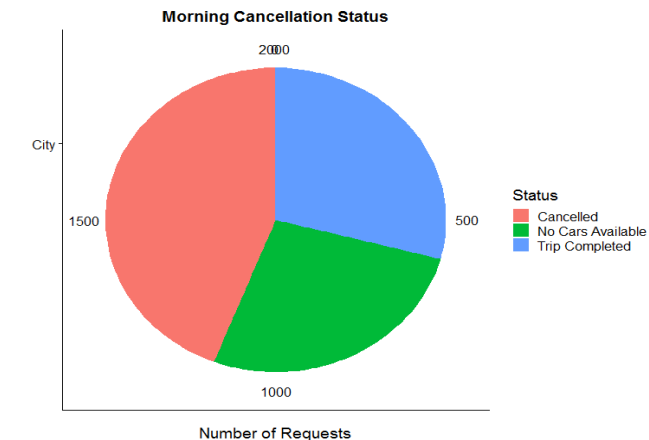
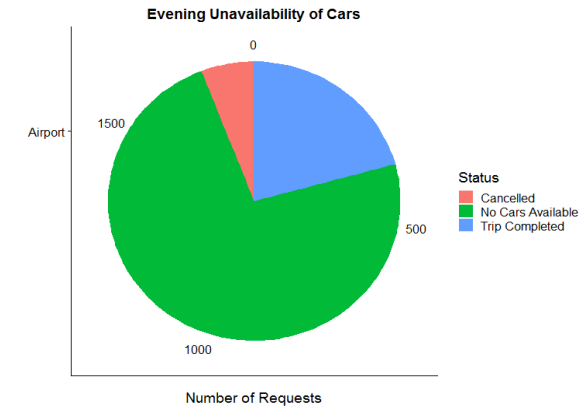
Requests Analysis - Evening Time Slot

1. This plot shows the Evening pickup from Airport and City.
2. More number of requests are from Airport.
3. Unavailability of Cabs are higher from Airport in the Evening time slot.



Supply and Demand Breakup -Airport and City

1. Supply count from Airport(Trips Completed): 373
2. Demand count at Airport(Trips Completed + Cancelled + No cars available): 1800
3. Supply count from City(Trips Completed): 583
4. Demand count at City(Trips Completed + Cancelled + No cars available): 2002



Reasons

1. Reason for Cancellation in the morning could be waiting at the airport for a long period of time. And more demand in city during the morning slot, hence drivers choose to cancel trips to airport in favor of better demand in city.
2. Reason for Unavailability of cars at airport in the evening could be long wait time after completing one trip, hence drivers may choose to leave airport if they get any other trips.

Recommendations

1. Increase the number of cars to or from Airport.
2. Can give some incentives to complete each trip from the city to airport in the morning time slot. This may reduce the number of trips cancelled.
3. Also Compensate for long wait time at Airport, so that more cabs will be available at airport in the Evening time slot.