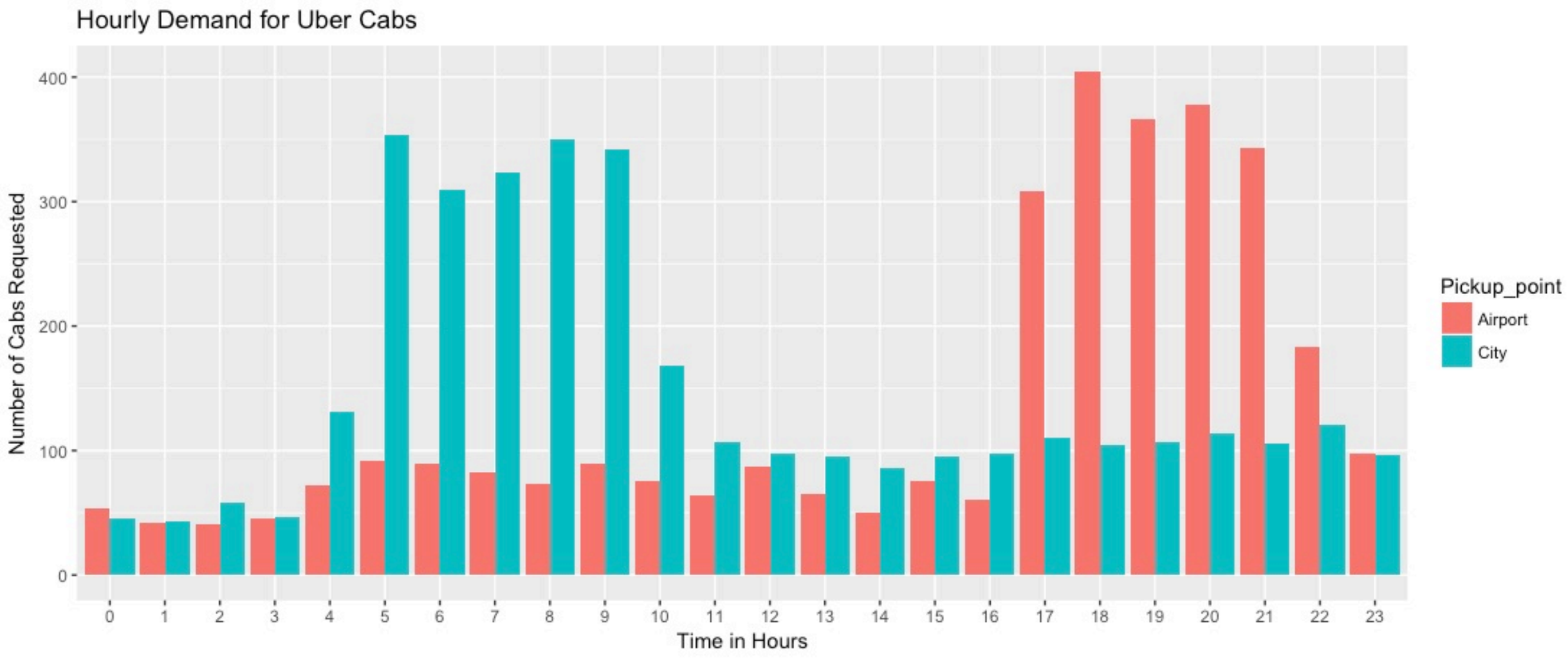
Assignment

Objective:
To identify the key issues that drive the problem of cancellation and non-availability of cars from airport to city and vice versa.

Methodology:
Identifying the key issues by visualising the data, analysing patterns to determine the issue and presenting a solution

ANALYSIS:

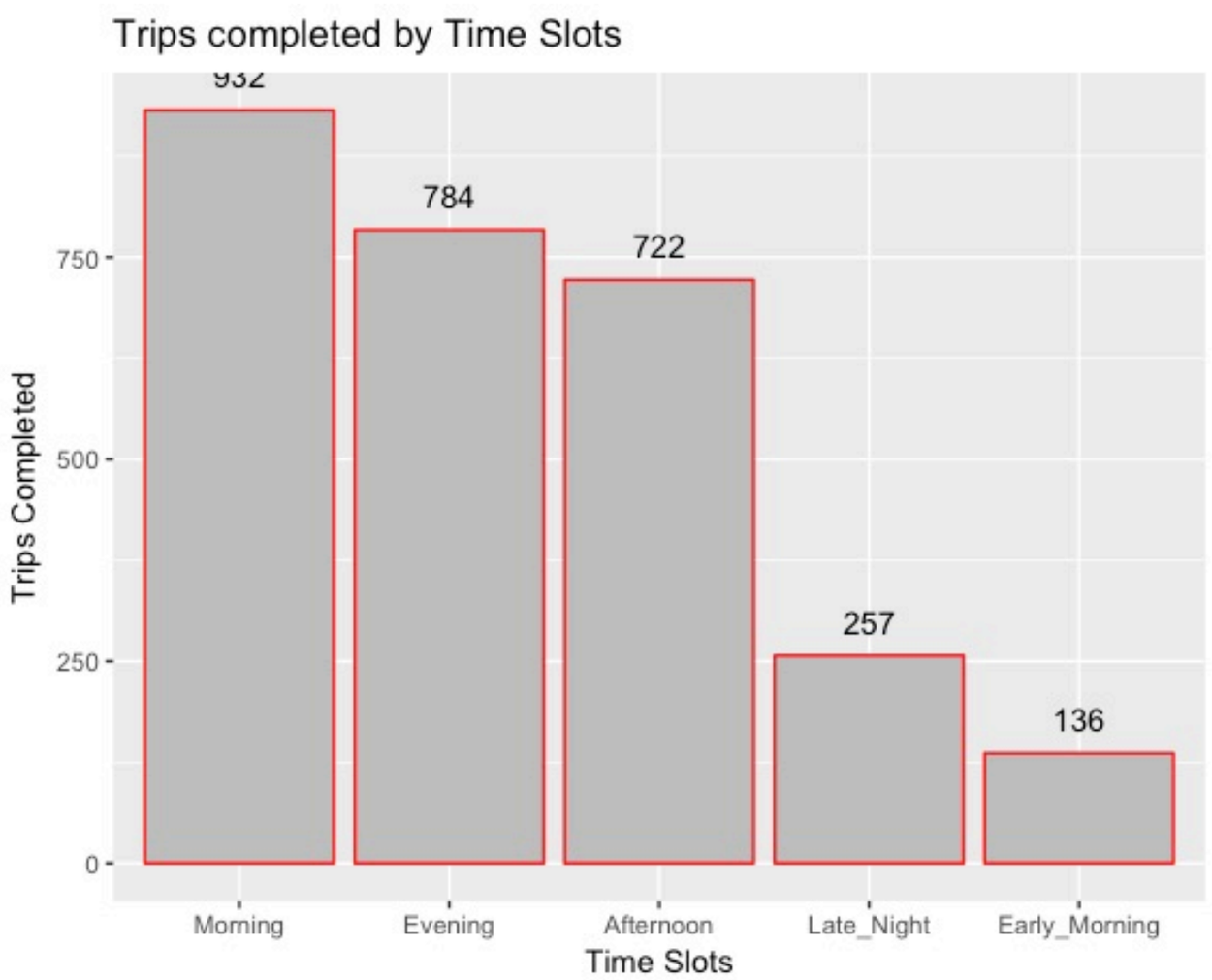
Plot 1: Bar chart depicting the hour-wise trip requests made in the city and the airport. The data is aggregated for all 5 days on the same axis of 24 hours. Each bar should correspond to an hour and pick-up point (city / airport).



In this bar chart, you'll be able to see 5 major time blocks based on the frequency of requests made at the city and airport.

- Early Morning
- Morning
- Afternoon
- Evening
- Late Night

NOTE: The division of time-slots is subjective to my personal choice of creating time parameters. There isn't any standard rule for division.

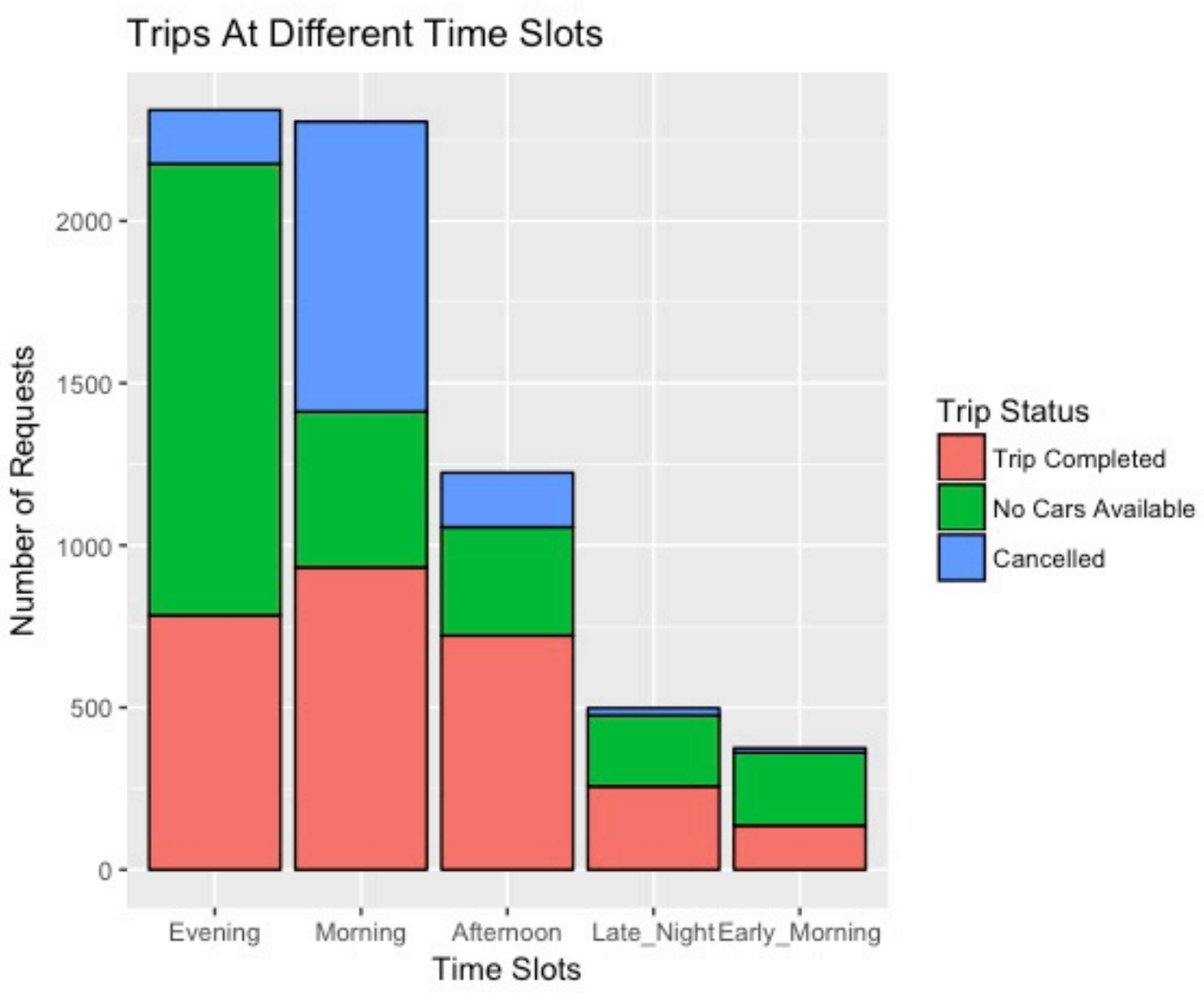


The count of the number of trips made during different time slots you have decided.

- Pre_Morning: 136
- Morning: 932
- Afternoon: 722
- Evening: 784
- Late_Night: 257

Identifying the problem

A stacked bar chart where each bar represents a time slot and y-axis shows the frequency of requests. Different proportions of bars should represent the *complete, cancelled and no cars available* out of the total customer requests.

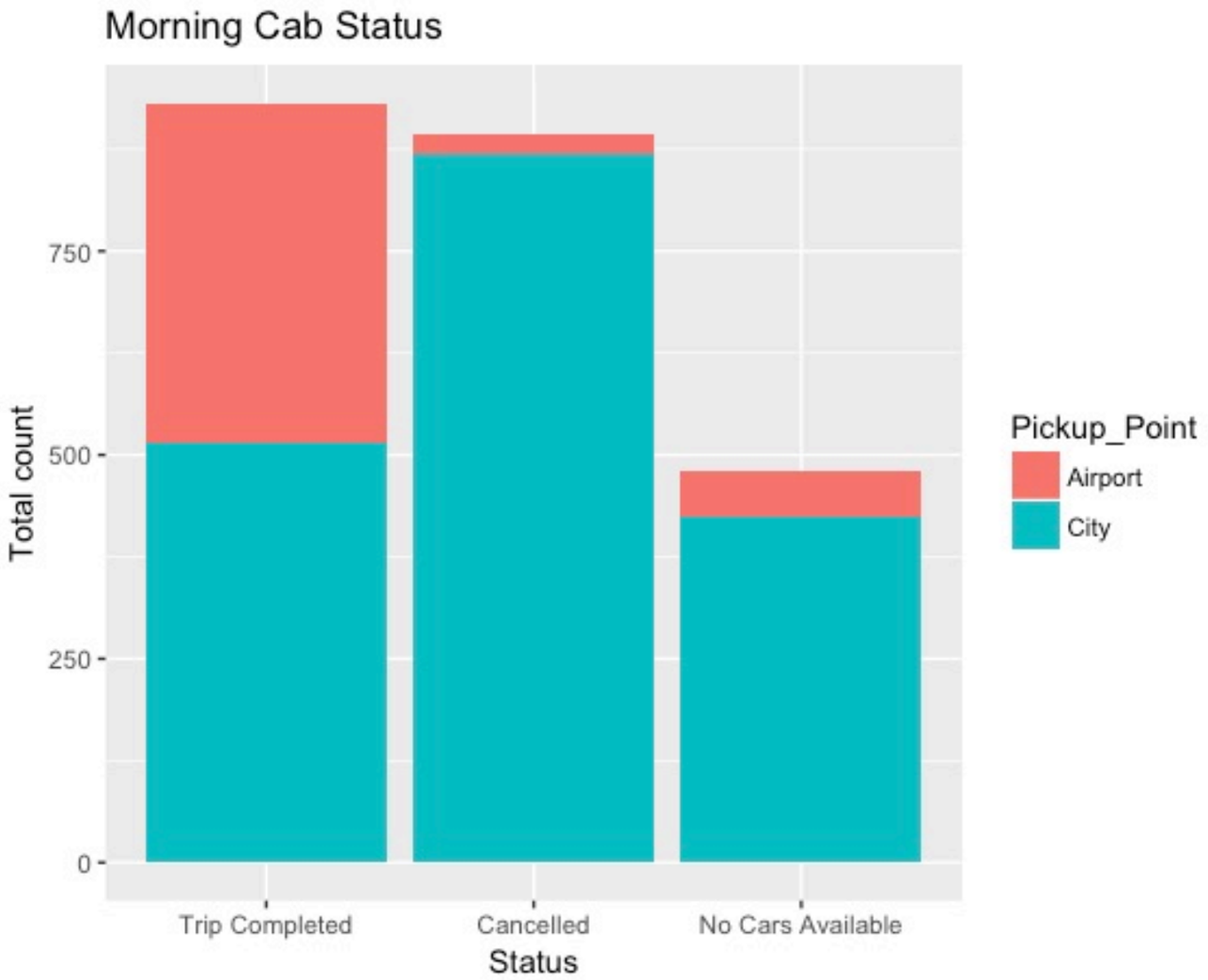


Problem 1: A large number of trips got cancelled during the Morning time slot.

Problem 2: Cabs were not available for a large number of requests during the Evening time slot

Problem 1:
1. Using a stacked bar chart we will determine if the problem is more severe for pick-up requests made at the airport or the city. As a next step, we will determine the number of times this issue exists.

Percentage of total issues:
Airport: 2.796421
City: 97.20358



2. Finding gap between supply and demand. For this case, the demand is the number of trip requests made at the city, whereas the supply is the number of trips completed from city to the airport.

No. of trip requests made in city: 1808
No. of trips completed from city to airport: 514

3. Reason for the issue of supply - demand gap:

A large number of flights leave the airport during Morning time slot. There are very less incoming flights in the Morning.

- *A driver who reaches airport during these hours has to spend idle time for picking a customer back to the city. The driver could utilise this idle time for other trips if he chooses not to go to the airport.*
- *He has to return back empty seated which is a waste of gas mileage for him.*

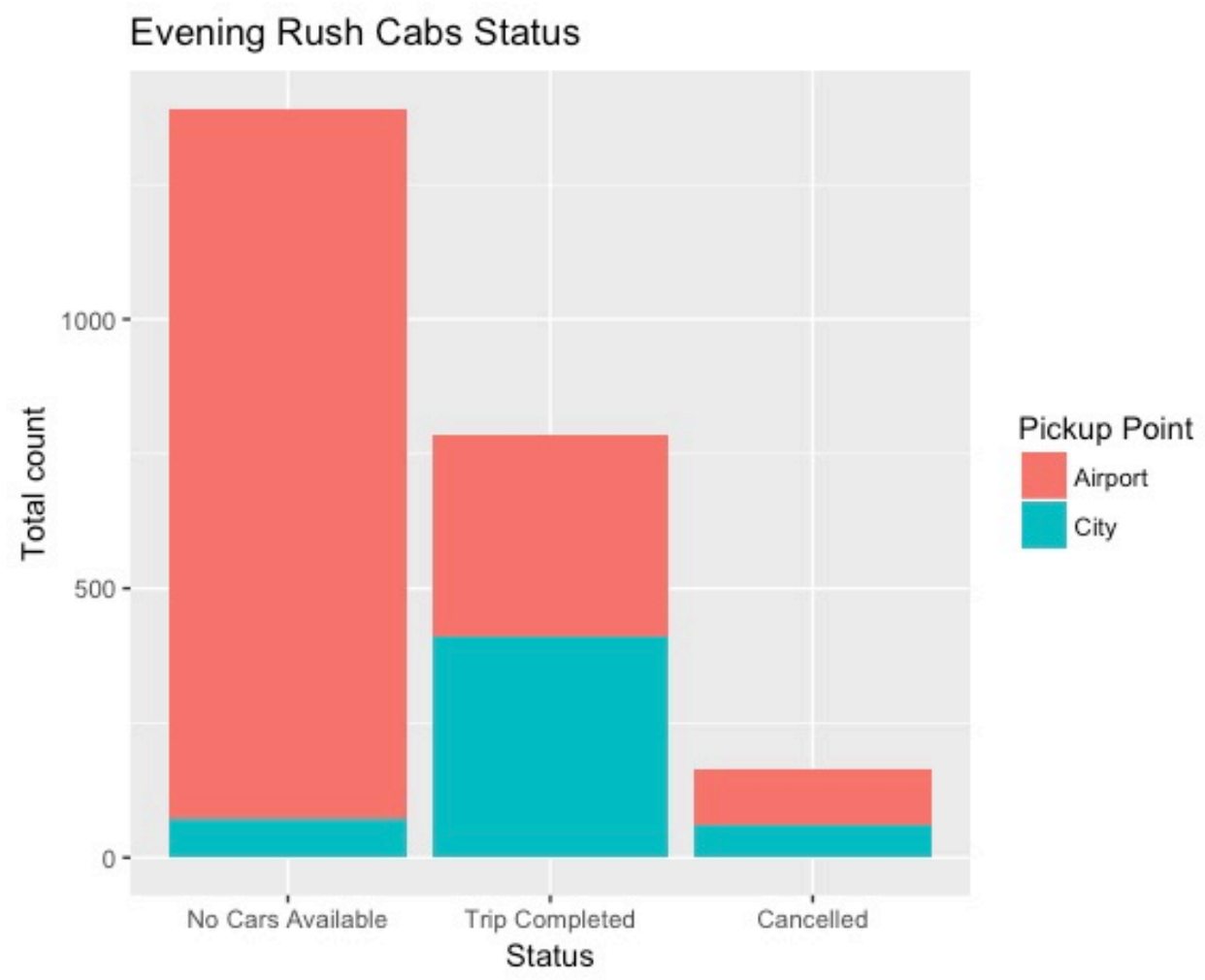
Due to this a large number of service requests were cancelled in morning rush resulting in huge supply demand gap.

Problem 2:

1. Plotting the stacked bar chart to find the issue for pick-up request made at the airport or the city.

Percentage of no cars available at the city: 5.100575%
Percentage of no cars available at the airport: 94.89943%

2. Finding the gap between supply and demand. For this case, the demand is the number of trip requests made at the airport whereas the
supply is the number of trips completed from airport to the city.



Problem identification:

Graph clearly shows that the major problems are:

- Cancelled trips during the morning rush from city to airport resulting in excessive supply of drivers and limited customer assignments
- Unavailability or limited number of car fleets during evening rush at the airport for passenger arrivals from incoming flights resulting in the loss of potential revenue everyday

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Recommendation to Uber:

For the trips in the morning:

- **From city to airport:** Surging the prices for passenger will result in higher income for drivers to complete trips and cancel less frequently
- **From airport to city:** Focus marketing and partnering efforts at the airport to increase the demand for taking Uber rides reducing idle time and driver's opportunity cost

For the trips in the evening:

- **From city to airport:** Charge nominal rates for taking a shared cab or UberGo to the airport with the effort to increase supply
- **From airport to city:** Allowing shared rides resulting in fewer cars to accommodate customers that are high in frequency. This would benefit the customer is cheaper fare and and return higher per passenger ROI for the driver.