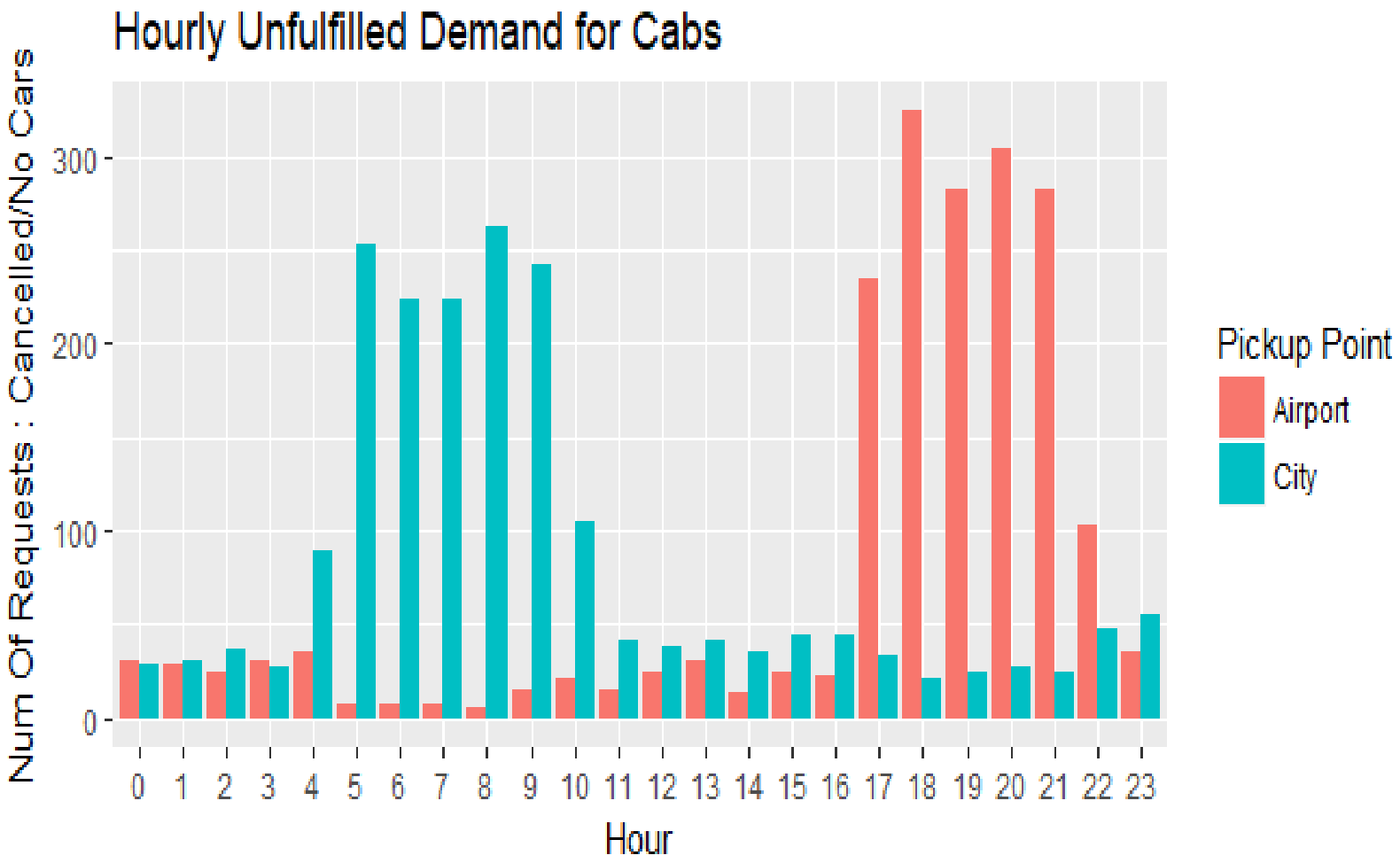
Uber Case Study

Visually identify the most pressing problems for Uber

Hourly Unfulfilled Demand for Cabs

- In the graph it is clearly reflected that most no. of requests with Status : “Cancelled” or “No cars Available” happen :
  - From 5 AM to 10 AM in the morning. (**Pickup is from the City**)
  - From 5 PM to 10 PM in the late evening (**Pickup is from the Airport**)

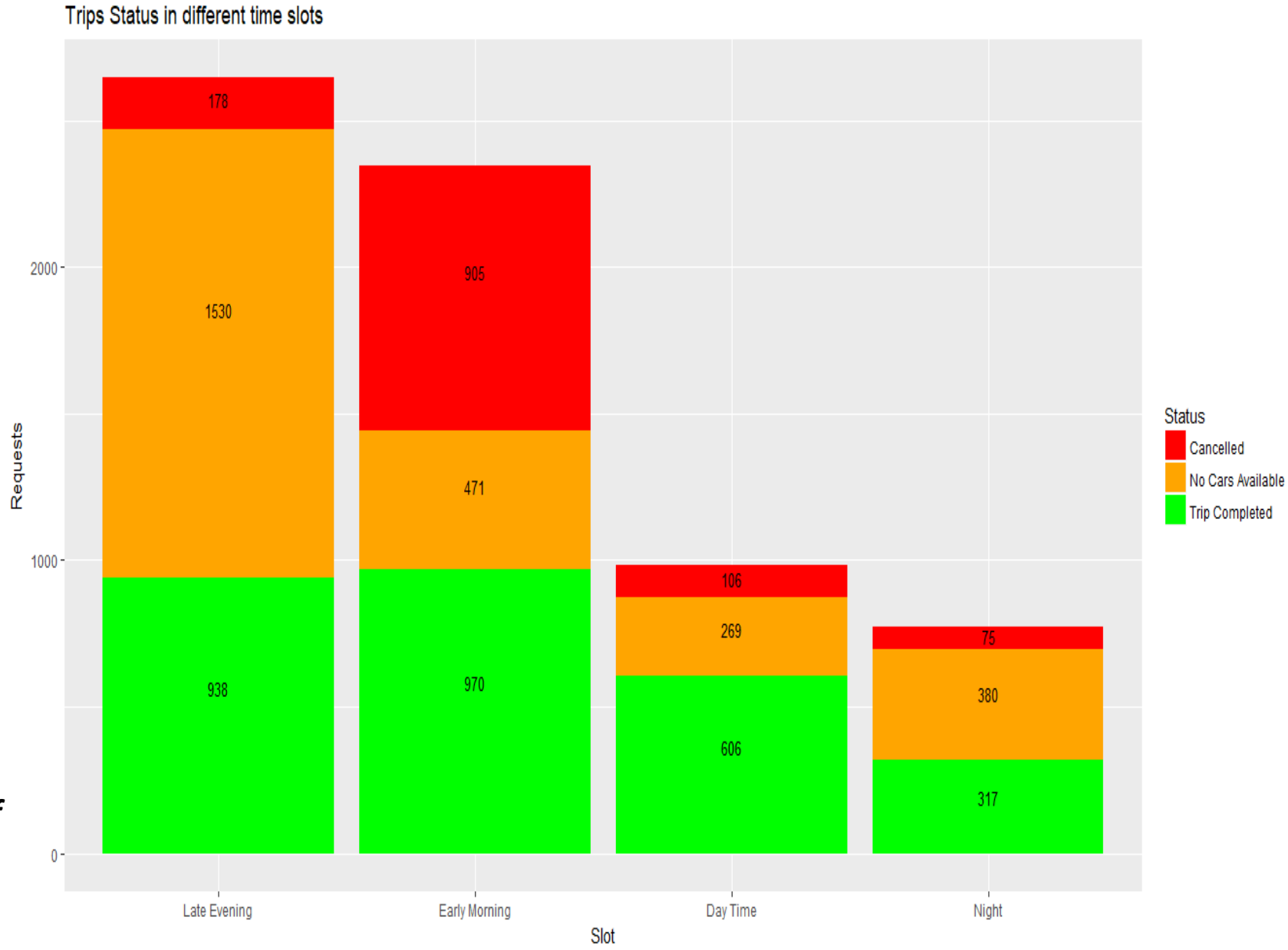


Breakdown of #Requests as per their Status in different Time Slots

- **Created 4 different slots** :
  - Early morning - 5th hour of the day – 10th hour of the day.
  - Day Time – 11th hour of the day – 16th hour of the day.
  - Late Evening – 16th hour of the day – 22nd hour of the day.
  - Night– 23rd hour of the day – 04th hour.
- **Plotted a Stacked bar chart**:
  - X axis - Slot
  - Y axis – No of requests
  - Stacked bar shows the breakdown of requests as per their "Status"
- ***It is clearly visible in the graph that***

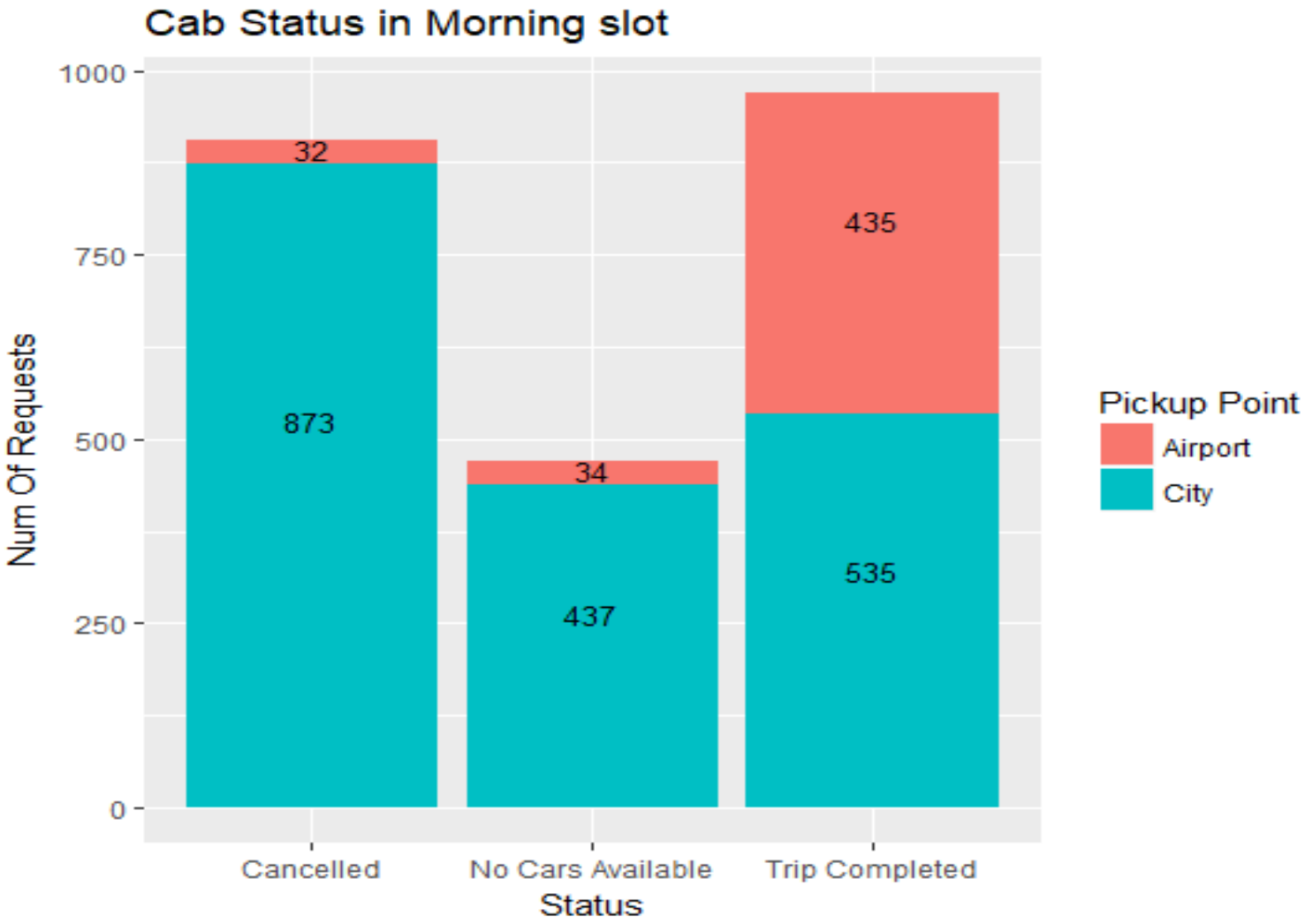
  In the evening slot , most number of requests got the response "cabs not available".

  In the morning slot , most number of requests got "cancelled"



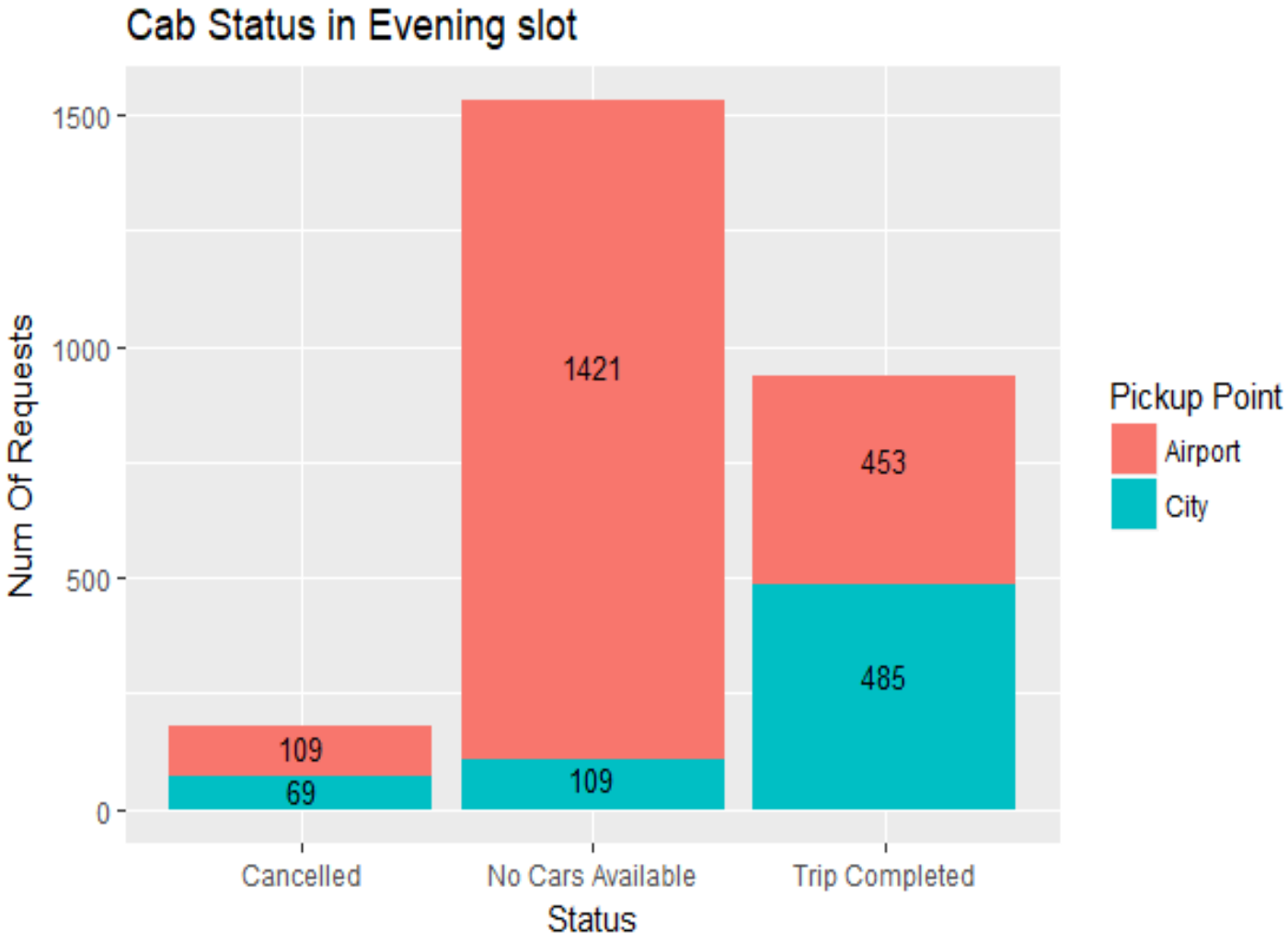
“# of Requests” vs “Status of requests” made in the “Morning Slot” on the basis of Pickup point

- From the graph it is clearly visible that most of requests that were made in the morning slot (Pickup point as “City”) either got “Cancelled” or not accepted due to “No cars available”.



“# of Requests” vs “Status of requests” made in the “Evening Slot” on the basis of Pickup point

- From the graph it is clearly visible that most of requests that were made in the evening slot (Pickup point as “Airport”) either got “Cancelled” or not accepted due to “No cars available”.



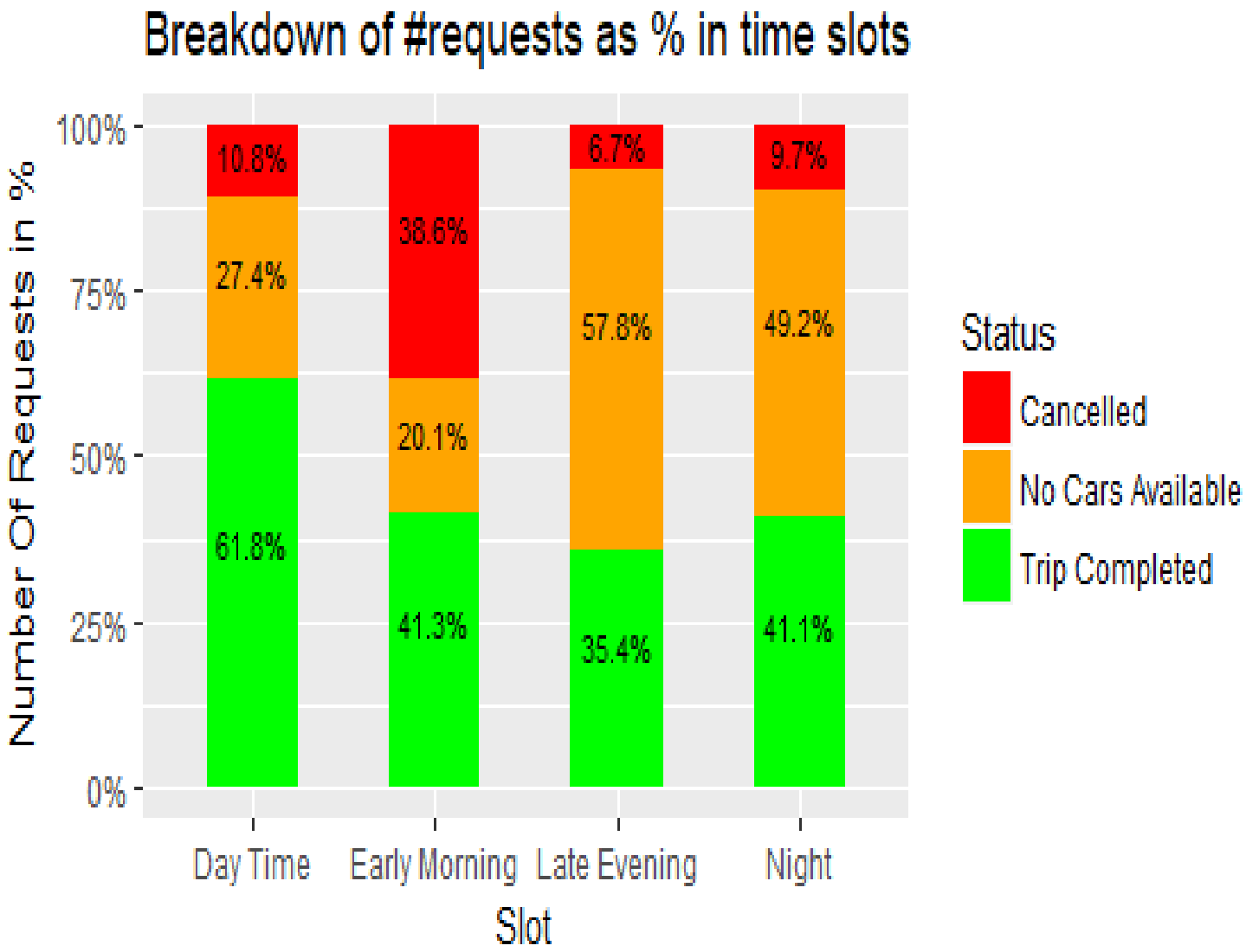
- Hence the conclusion :
  - The most problematic type of requests are:
    - **City to Airport – in Early Morning Slot (5th hour – 10th hour)**
    - **Airport to City – in Late Evening Slot (17th hour – 22nd hour)**

Find out the gap between supply and demand and show the same using plots.

- Find the time slots when the highest gap exists
- Find the types of requests (city-airport or airport-city) for which the gap is the most severe in the identified time slots

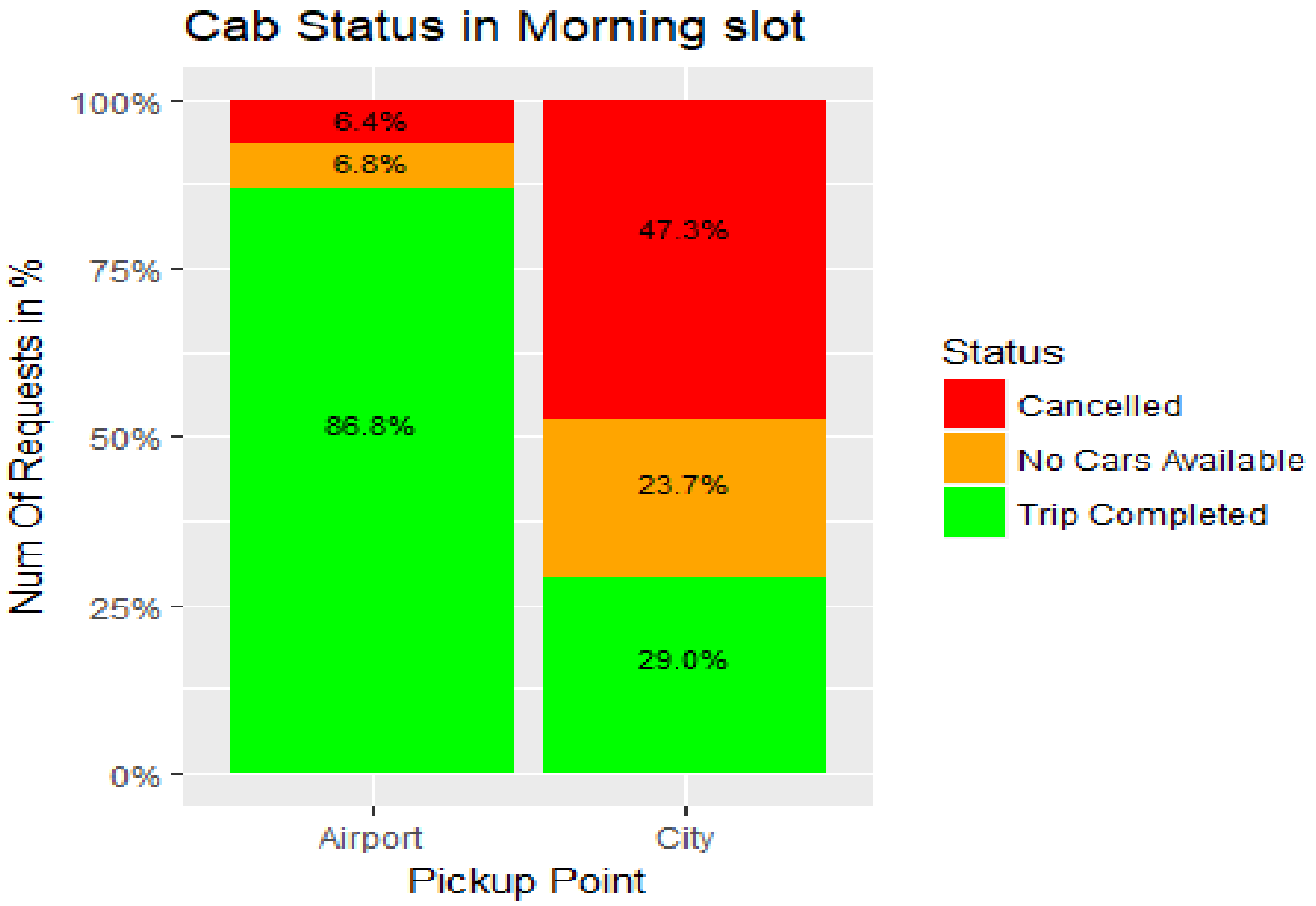
Time Slot when highest gap exists

- As shown in the graph , it is representing the number of requests in % in different time slots:
- In the “Late Evening” slot
  - 57.8% of requests got “NO CARS AVAILABLE”
  - 6.7% of requests got “CANCELLED”
  - Overall - **57.8 + 6.7 = 64.5 %** of requests in the late evening were not fulfilled.
- In the “Early Morning” slot
  - 20.1 % of requests got “NO CARS AVAILABLE”
  - 38.6% of requests got “CANCELLED
  - Overall – **38.6 + 20.1 = 58.7 %** of requests in Early Morning were not fulfilled
- ***Hence the highest gap exist in “Late evening” and “Early Morning slots***
- ***Similar thing is shown in Slide 2 “in numerical terms”***



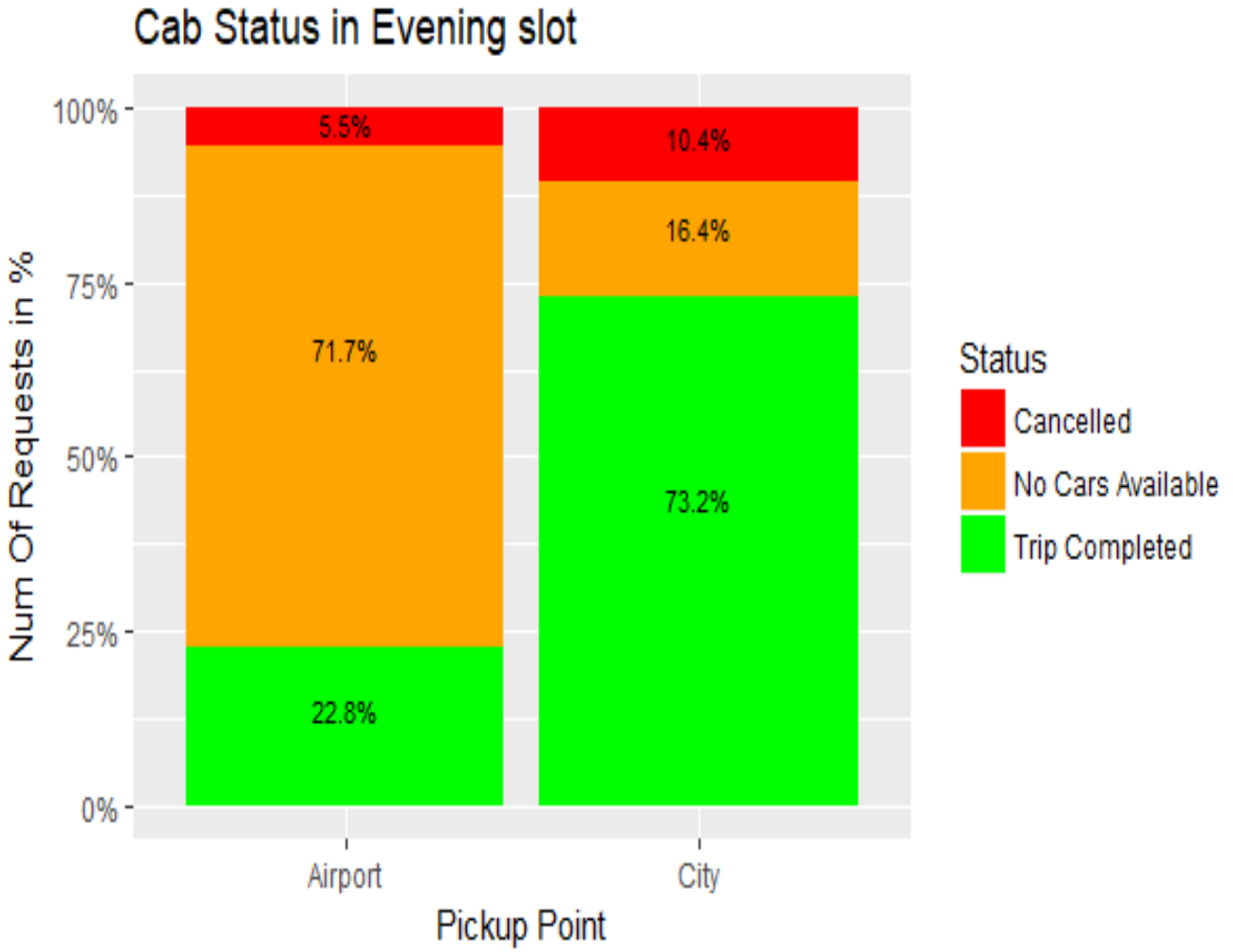
Type of Request for which the gap is most severe in the “Morning Slot”

- In the graph it is clearly shown that in the “Morning Slot” for the request “City – to – Airport” ,
  - 47.3 % of requests in that slot were “Cancelled”
  - 23.7% of requests in that slot were “No Cars”
- **Overall 71% of requests made in the morning slot from City –to – Airport were not fulfilled.**
- **Hence : The gap is most severe for the “City – to – Airport” in the Morning slot**



Type of Request for which the gap is most severe in the “Evening Slot”

- In the graph it is clearly shown that in the “Evening Slot” for the request “Airport – to – City” ,
  - 71.7 % of requests in that slot were “No Cars Available”
  - 5.5 % of requests in that slot were “Cancelled”
- **Overall 77.2% of requests made in the evening slot from Airport –to – City were not fulfilled.**
- **Hence : The gap is most severe for the “Airport – to – City” request in the Evening slot.**

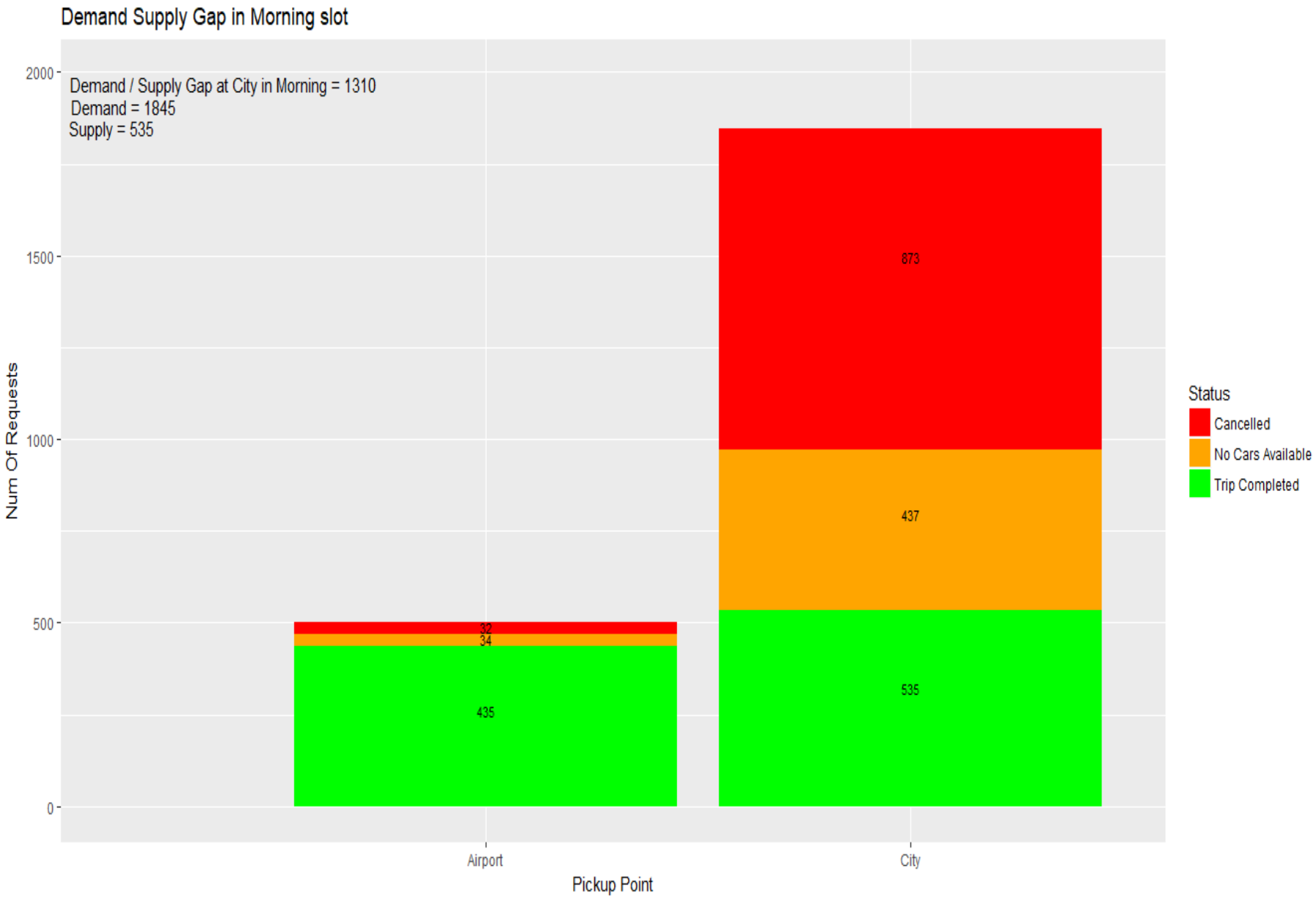


Demand & Supply Gap in “Morning Slot” – Request Type : “City –to – Airport”

- Demand = Total no. of request made in the morning slot , pick up as “City” = 1845
- Supply = No. of trips completed in the morning slot , pick up as “City “ = 535
- Gap = Demand – Supply = 1310
- In percentage = (Gap / Demand)* 100

  = (1310 / 1845) * 100

  = **71 %**

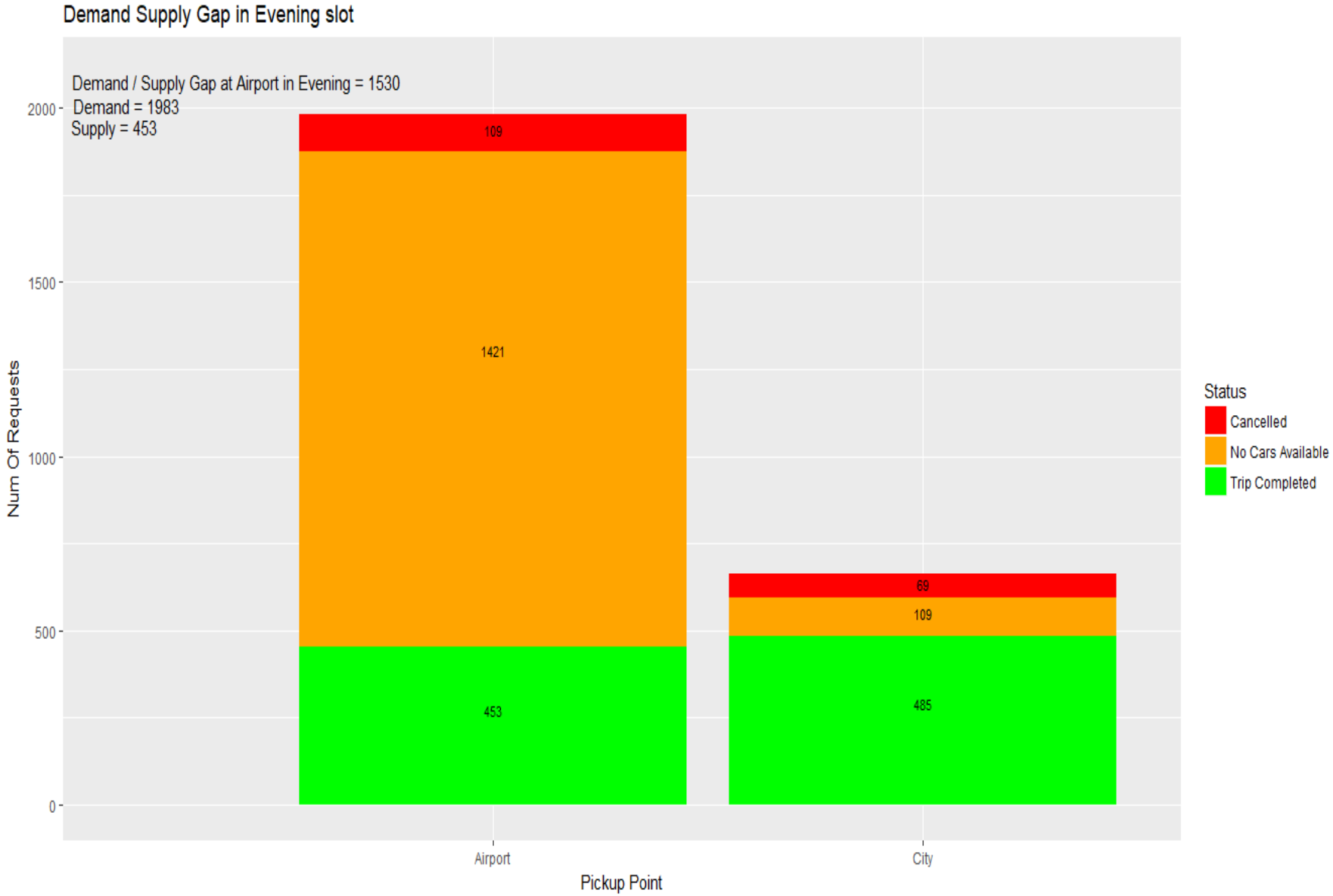


Demand & Supply Gap in “Evening Slot” – Request Type : “Airport –to – City”

- Demand = Total no. of request made in the evening slot , pick up as “Airport” = 1983
- Supply = No. of trips completed in the morning slot , pick up as “Airport” = 453
- Gap = Demand – Supply = 1530
- In percentage = Gap / Demand * 100

  = 1530/ 1983 * 100

  = **77.15%**



Reason for this issue for the supply-demand gap in “Morning Slot” – Request Type : “City –to – Airport”

- It seems that there are many flights that “depart” in the early morning time (5AM – 10 AM) or may be in the night (12 AM – 5 AM) and very less flights “arrive” in the early morning.
- High outgoing flights means less supply at the city but high demand at the city.
- Due to which most of the cabs to go to “Airport” in the “night” or early morning do not return to city and hence there is shortage of cabs in the “early morning” (pickup is from the city).
- If the driver will return from Airport, he has to return “empty” which means loss of business for him.

Recommendations to resolve “Supply Demand Gap in “Morning Slot” – Request Type : “City –to – Airport”

- Ask driver not to wait at the airport for the incoming flights. If the driver has to return idle , reimburse the “fuel” charges to the driver from airport to the city.
- Add extra “airport cess” to the fare when the pickup is from the city in the early morning /late night.
- This extra airport cess will help the company to compensate on the loss that company will bear on the fuel charge (as mentioned in Step 1)

Reason for this issue for the supply-demand gap in “Evening Slot” – Request Type : “Airport – to – City”

- It seems , the outgoing flights are low in the evening and incoming flights are high.
- Since outgoing flights are low , less cabs arriving at the airport (low supply)
- Since incoming flights are high, demand for cabs is high.
- Hence high demand & low supply.

Recommendations to resolve “Supply Demand Gap in “Evening Slot” – Request Type : “Airport – to – City”

- If the driver is in the city and is “idle” , we can ask him to move to the “Airport”
- We can reimburse the “fuel” charges to the driver from the city to the airport.
- Add extra airport cess to the fare when the pickup is from the Airport during late evening.
- This extra airport cess will help company to compensate on the loss due to the fuel charges (as mentioned in Step 2)