Uber Case Study

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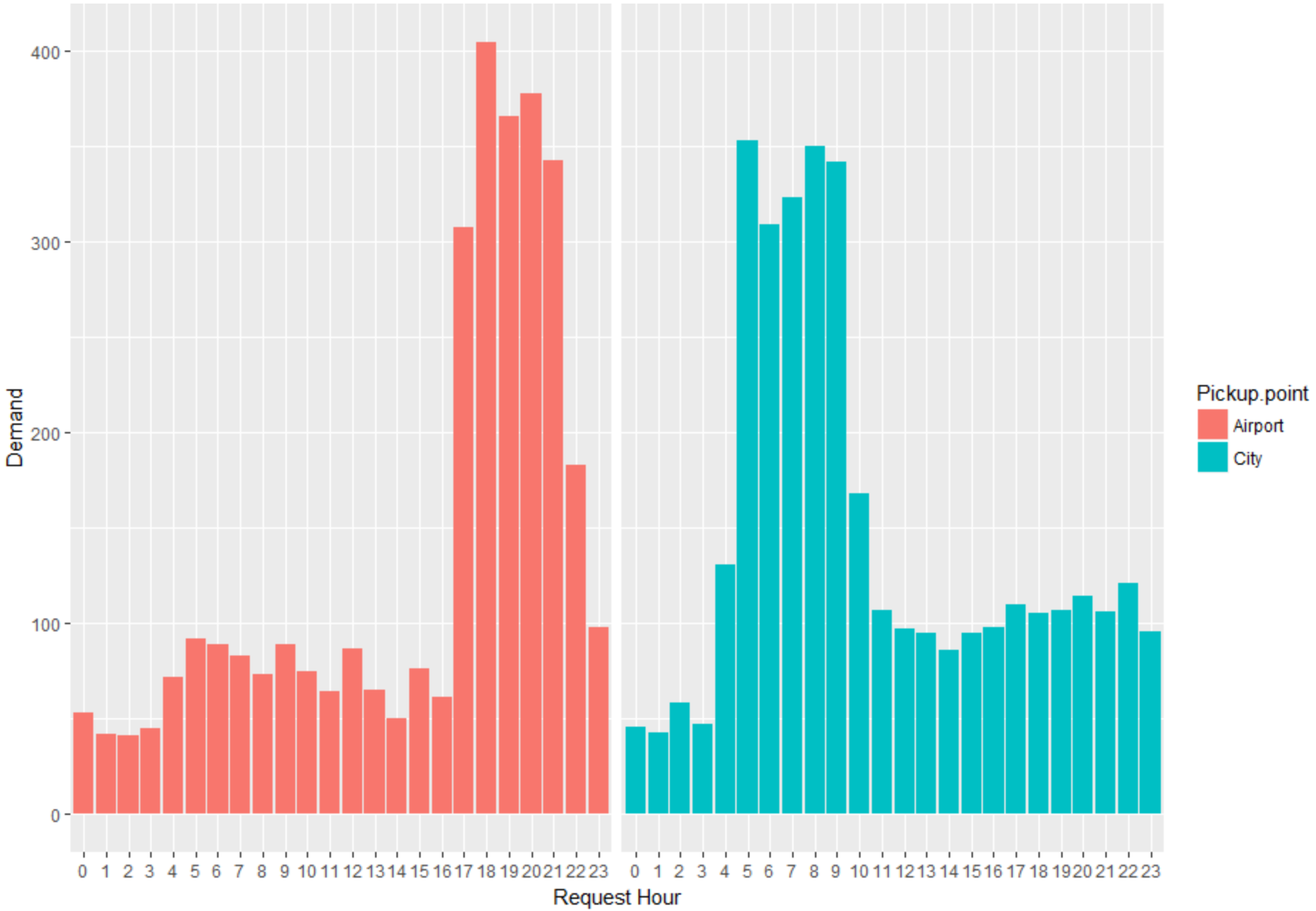
Hourly demand at Airport and at City.

- The two plots shows the demand at Airport and at City for Uber cabs across the day .
- There is a surge in demand at Airport from 17:00 – 22:00 hrs.
- There is a surge in demand at City from 04:00 – 10:00 hrs.



Hourly demand fulfillment at Airport and at City.

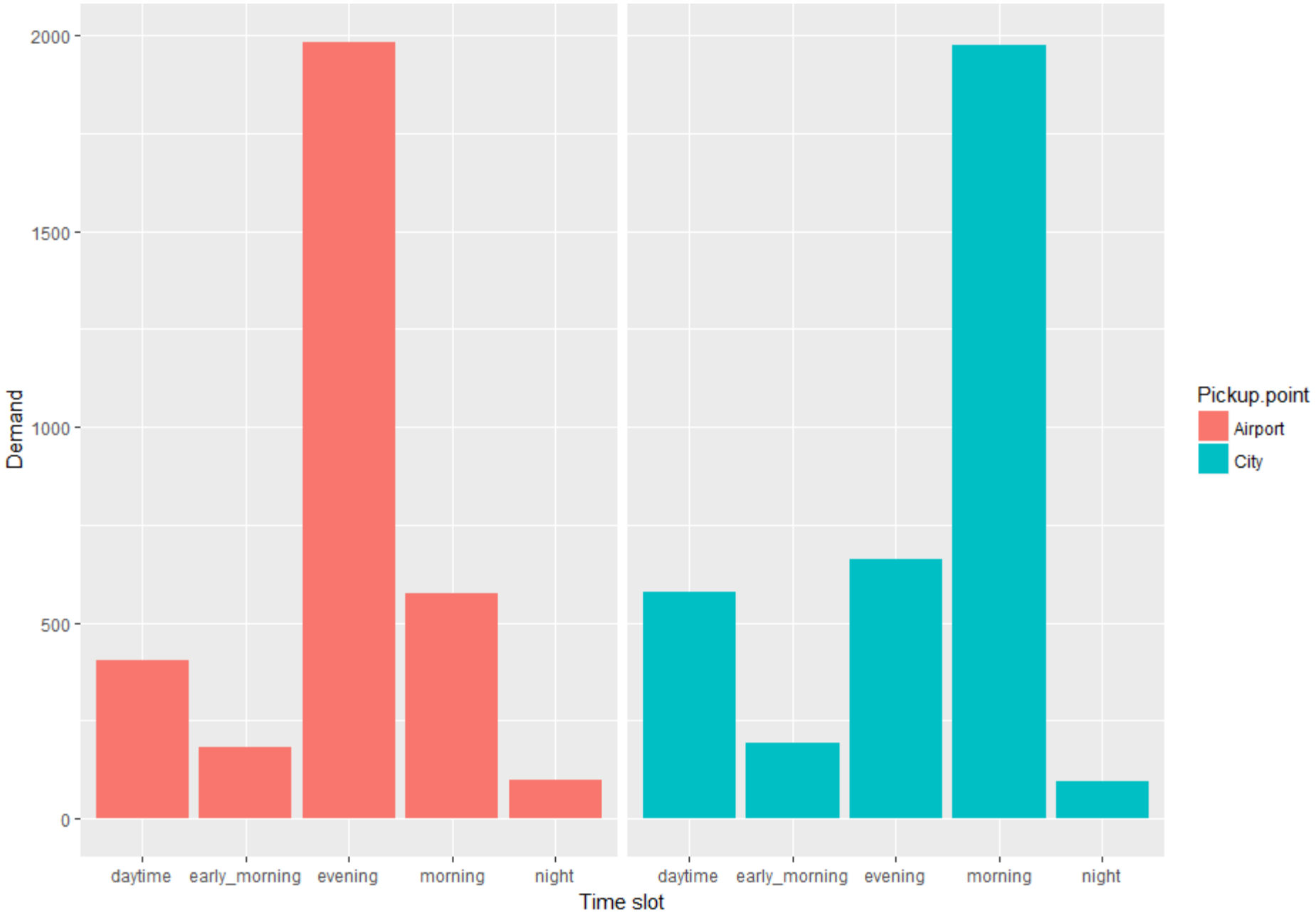
These plots shows the hourly demand fulfillment and we can observe that two time slots 4:00 – 10:00 & 17:00 – 22:00 have maximum number of request denials. This helps us in identifying the time-slots for our analysis

Time Slots

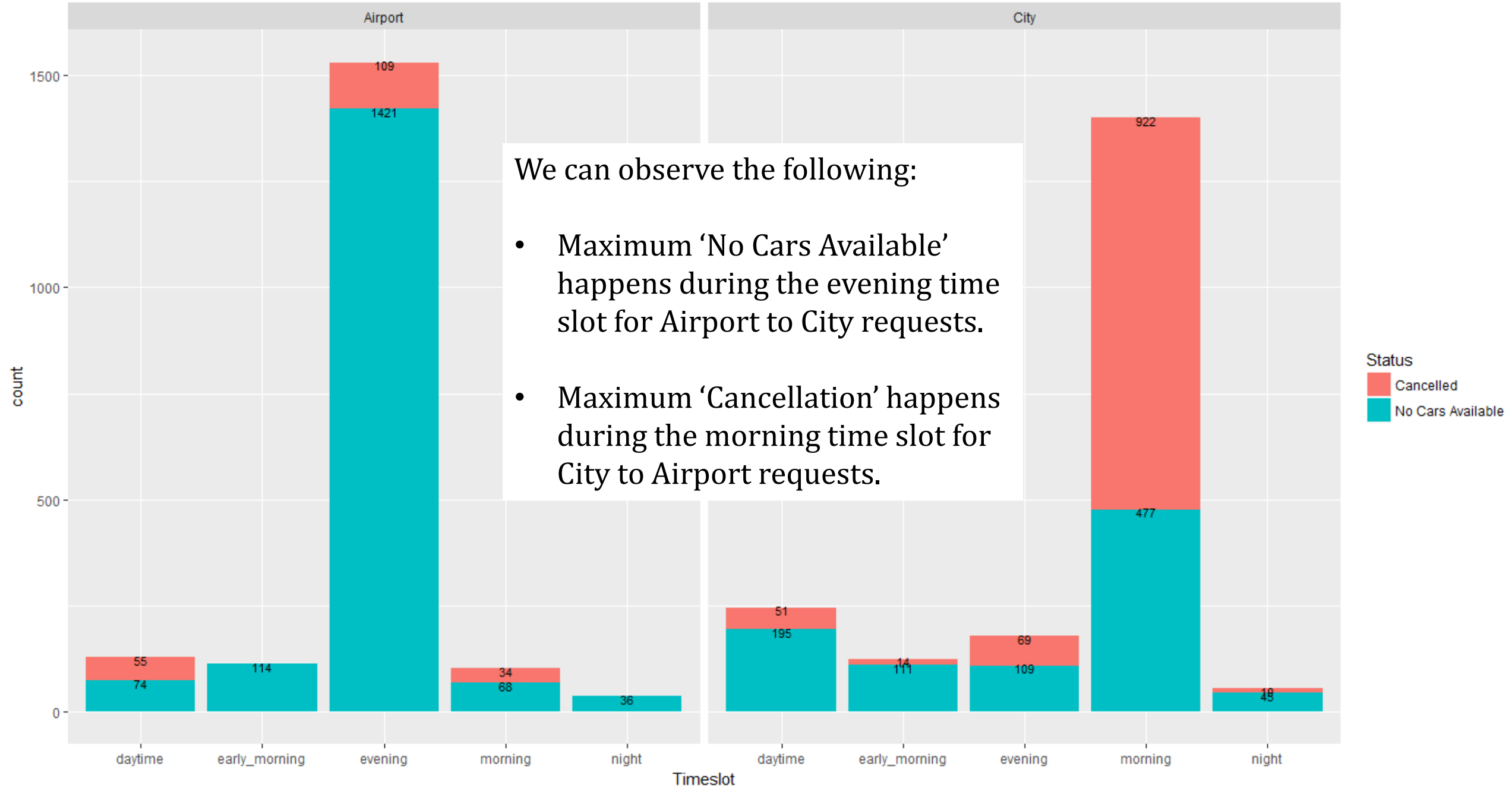
- early_morning 00:00:00 - 03:59:59
- morning 04:00:00 - 10:00
- Daytime : 10:00:01 - 16:59:59
- evening : 17:00:00 - 22:00:00
- night : 22:00:01 - 23:59:59

Demand at Airport & at City across time slots

- The City experiences the maximum demand for Uber cabs during the morning time slot.
- The Airport experiences the maximum demand for Uber cabs during the evening time slot.



1. Cancelled & No Cars Available across the time slots



We can observe the following:

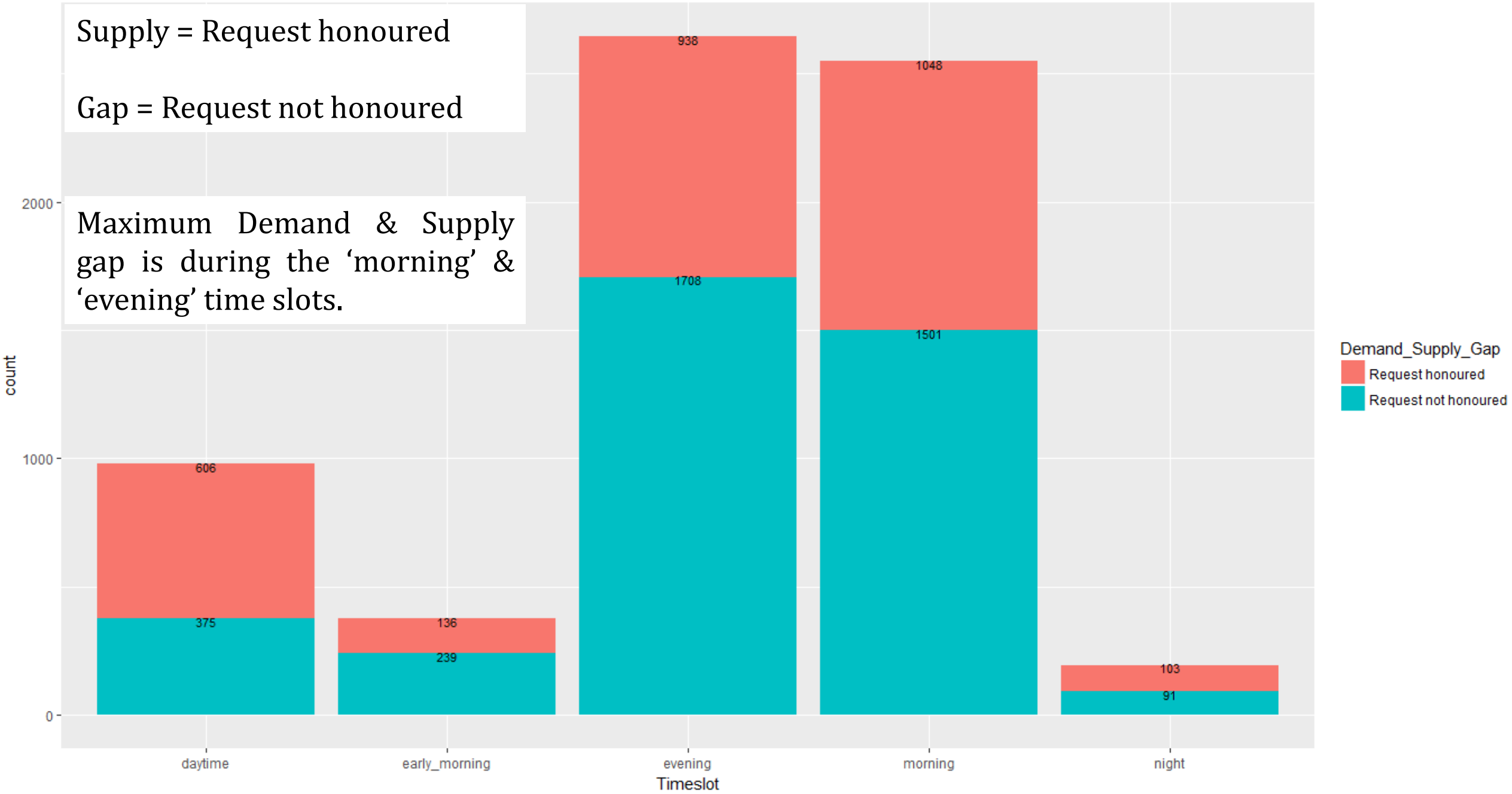
- Maximum 'No Cars Available' happens during the evening time slot for Airport to City requests.
- Maximum 'Cancellation' happens during the morning time slot for City to Airport requests.

2a. Demand & Supply Gap across the time slots

Supply = Request honoured

Gap = Request not honoured

Maximum Demand & Supply gap is during the 'morning' & 'evening' time slots.



2b. Demand-Supply Gap for Morning & Evening time slots

Gap = Request not honoured

We can observe the following:

- The gap is the most severe for Airport to City requests during evening time slot.
- The gap is the most severe for City to Airport requests during morning time slot.

3. Reason for the supply-demand gap

- The City experiences the maximum demand for Uber cabs during the morning time slot, but we also that see maximum cancellation is happening during the same timeslot (slide 5). Following could be the reasons for the same:
  - As it's the start of the day, the drivers are also starting their day and it takes time to build up the supply to take care of the incoming requests.
  - The inbound flights to the Airport may be less in the morning hours and hence the driver will have to wait a long time before getting the return trip and hence the drivers 'cancel' the request.

- The Airport experiences the maximum demand for Uber cabs during the evening time slot, but we also that see maximum 'No Cars Available' is happening during the same timeslot (slide 5). Following could be the reasons for the same:
  - This constitutes the evening rush hour and with all the city traffic along the way, the commute time for the cabs coming from City to Airport increases, hence this results in lesser supply to take care of the Airport pickup requests.
  - The inbound flights to the Airport may be more during the evening hours and hence there will be more pickup requests at the Airport but with limited supply, most of these requests will eventually see 'No Cars Available'

4. Recommendations to resolve the supply-demand gap

- Driver Perspective:
  - For the morning time slot where in maximum cancellation happens for City to Airport requests. Uber can incentivize the drivers for the waiting time they might have to experience to get a return trip. This will encourage them to start their day early and also not to cancel pickup requests from the City.

- Customer Perspective:
  - Uber can offer customers incentives to avoid the morning timeslot and to travel in non-peak hours. Though this is constraint by the flight timings but still a few customers might choose to travel early if they get a better deal.

- Uber Perspective:
  - Uber can also think of partnering with popular airlines and can leverage the booking data from them. This will help them to get a better estimate of the demand from City to Airport and vice-versa. Also this will also enable them to identify the specific localities within the city where the demand and supply can be predicted.