Traveling with Uber

By Matthew Byam, Emma Pullen, Vincent Manna and Matthew Spirio

Introduction

- Our goal it to optimize ridesharing, based on several variables
    - Company
    - Time of Day
    - Time of Year (month)
    - Zones created by the company (bases)

- To achieve this we will start by compare prices within companies (Uber & Lyft) to determine which is better overall

- From there we will take a deep dive into the best company and provide a comprehensive understanding of the specifics of their ridesharing

⬢ Dataset A

Uber and Lyft trip data from the following source:
https://www.kaggle.com/ravi72munde/uber-lyft-cab-prices

- ● 'distance': The distance between source and destination.
- ● 'cab_type': Whether the trip was provided by Uber or Lyft.
- ● 'time_stamp': Epoch time when data was queried (converted).
- ● 'destination': The destination of the trip.
- ● 'source': The starting point of the ride.
- ● 'price': The estimated price for the trip in United States Dollars.
- ● 'surge_multiplier': The multiplier by which price was increased.
- ● 'id': The unique identifier number of the trip.
- ● 'product_id': The identifier number for the provider.
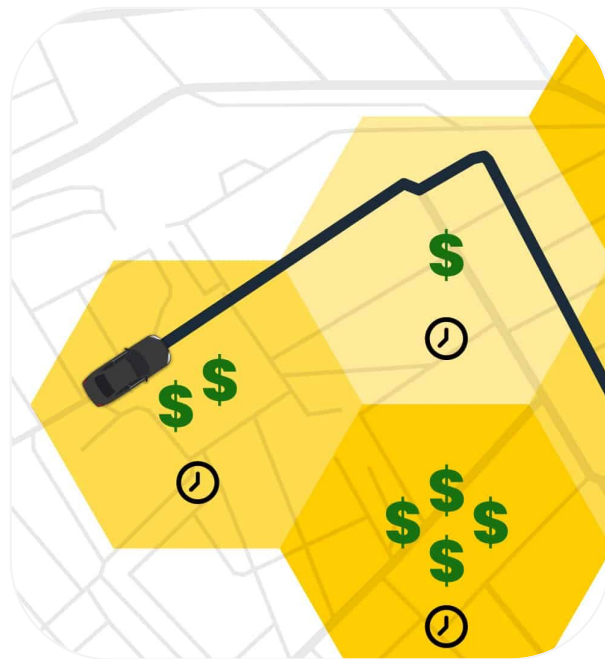- ● 'name': Visible type of cab.

Dataset B

We have collected 2014 Uber location and timestamp data from the following source:
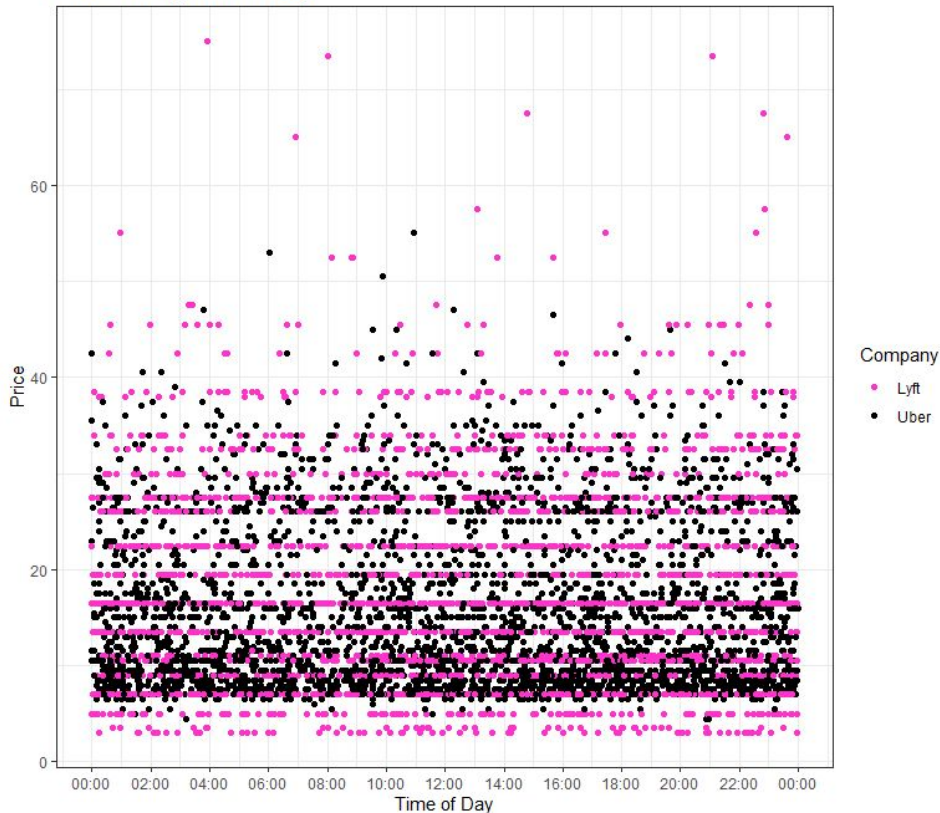https://drive.google.com/file/d/1emopjfEkTt59jJoBH9L9bSd mlDC4AR87/view

- 'Date/Time': The date and time when the uber trip took place.
- 'Lat': The latitude of the location where the uber trip took place.
- 'Lon': The longitude of the location where the uber trip took place.
- 'Base': Prescribed regions by Uber.
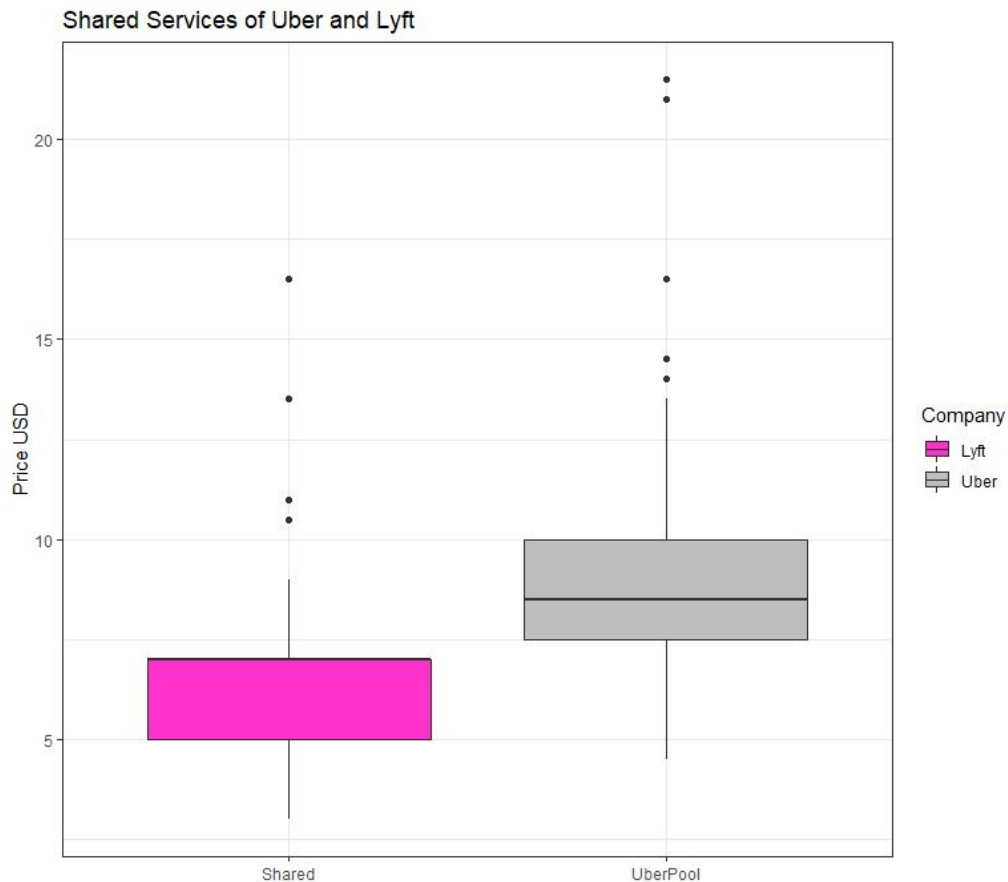
How do ⬛ and 🅛 Prices Change During the Day

Price Throughout the Day

- Does either company have changing prices during the day?
- Which company shows more price consistency?
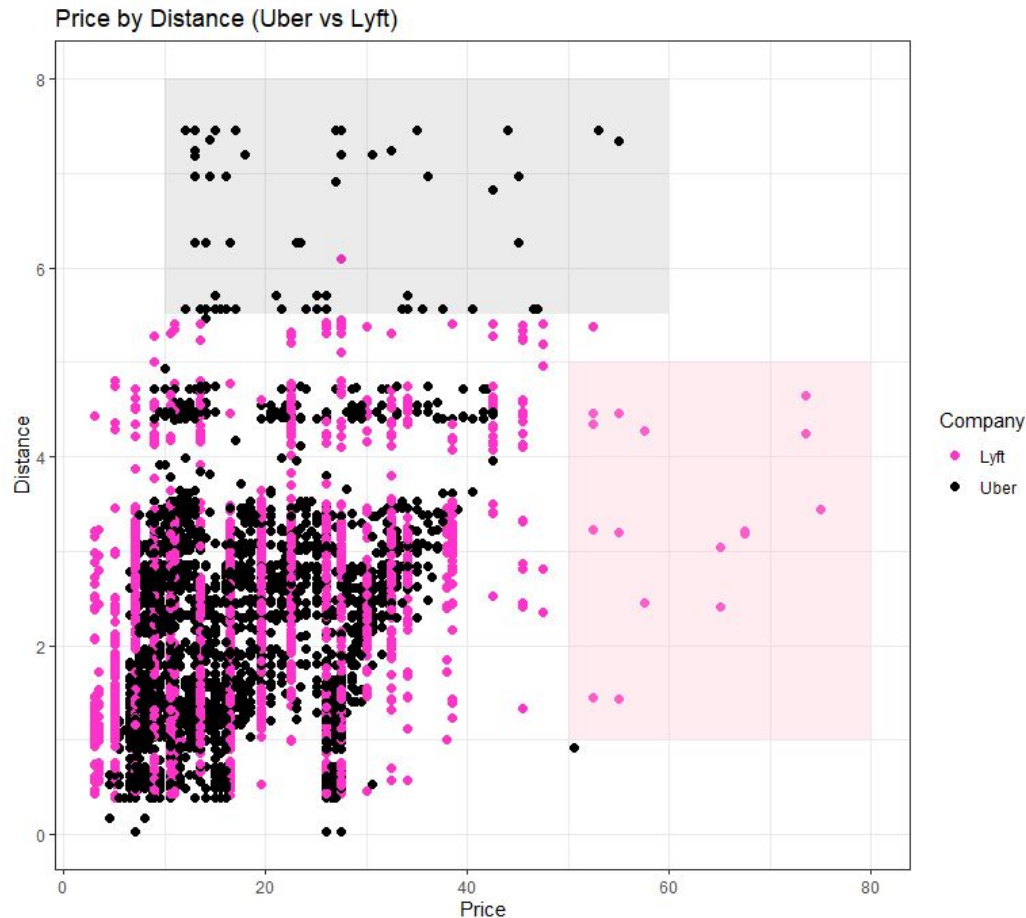- What are the overall price trends?
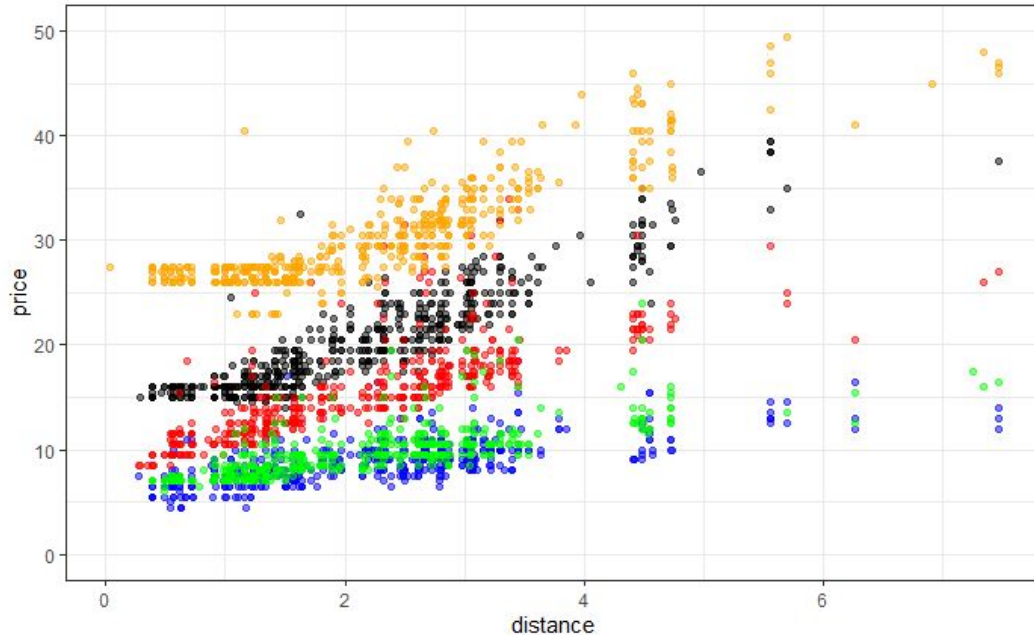
Sharing Rides With Other Users

Shared Services of Uber and Lyft

- Advantages in riding with other people

- Which company has better shared ride prices?

- Is this consistent for Lyft across all rides?

Comparing ⬛ and 🅛 Prices by Distance


Price by Distance (Uber vs Lyft)

- Do Uber and Lyft charge the same prices?

- Are longer trips priced the same?

Price vs. Distance by Uber Type **&** Correlation

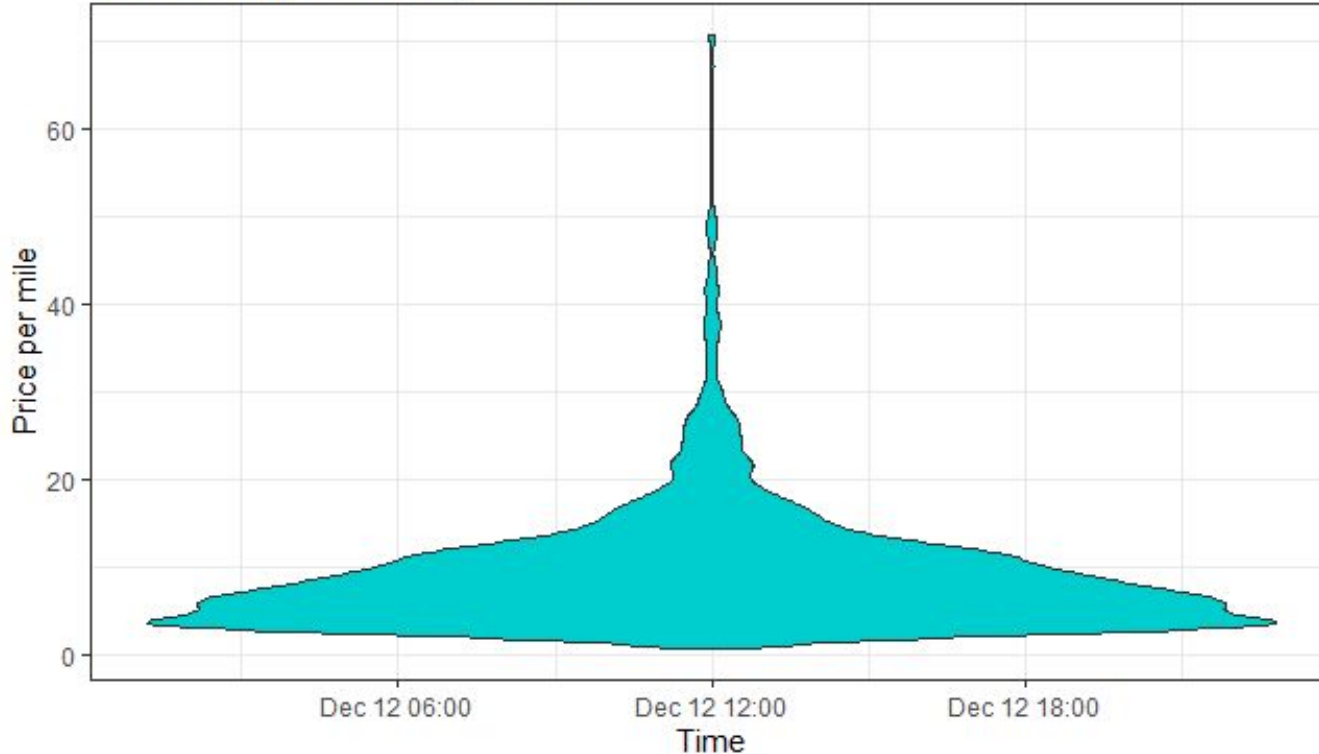- Which type of Uber is most cost efficient per distance?
- Is price consistent per ride?

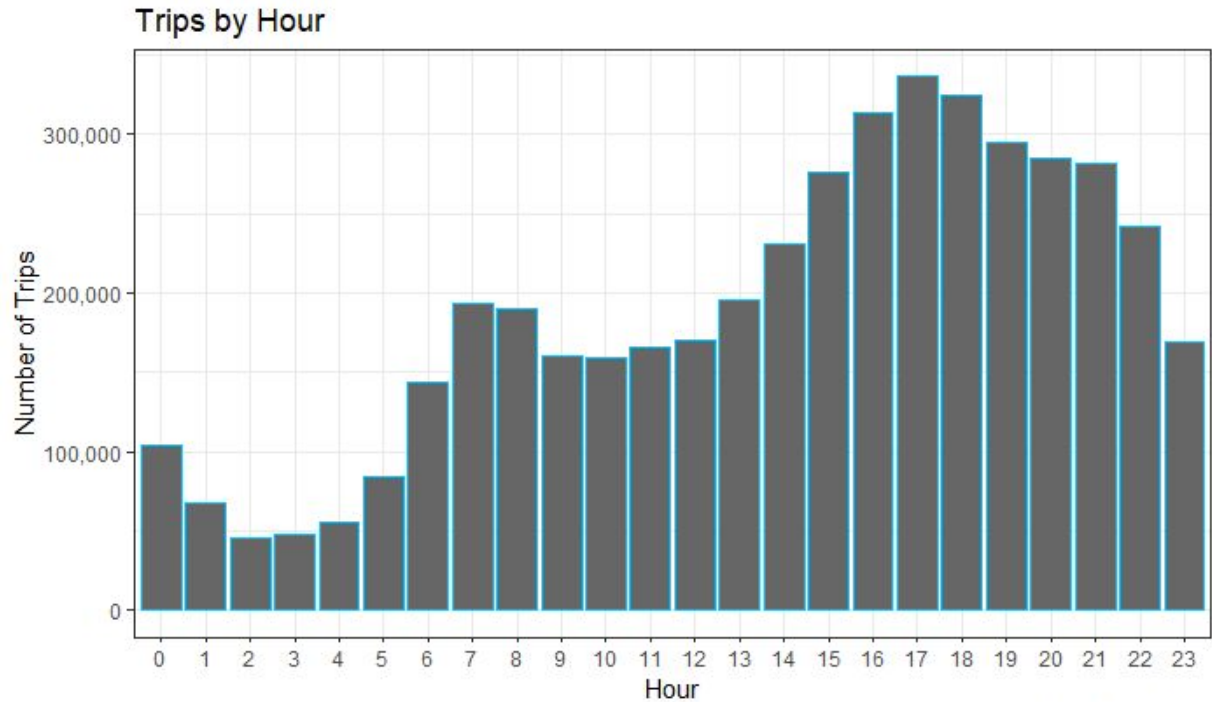| Uber Type	R-squared Value
Uber SUV	**0.6777**
Uber Black	**0.8402**
Uber XL	**0.6039**
Uber WAV	**0.5233**
Uber Pool	**0.4798**

Trips by Hour

Time of Day vs. Price per Mile

- Highest price/ mile at noon

- Other times of day remain consistent with price

Daily Rides Per Hour

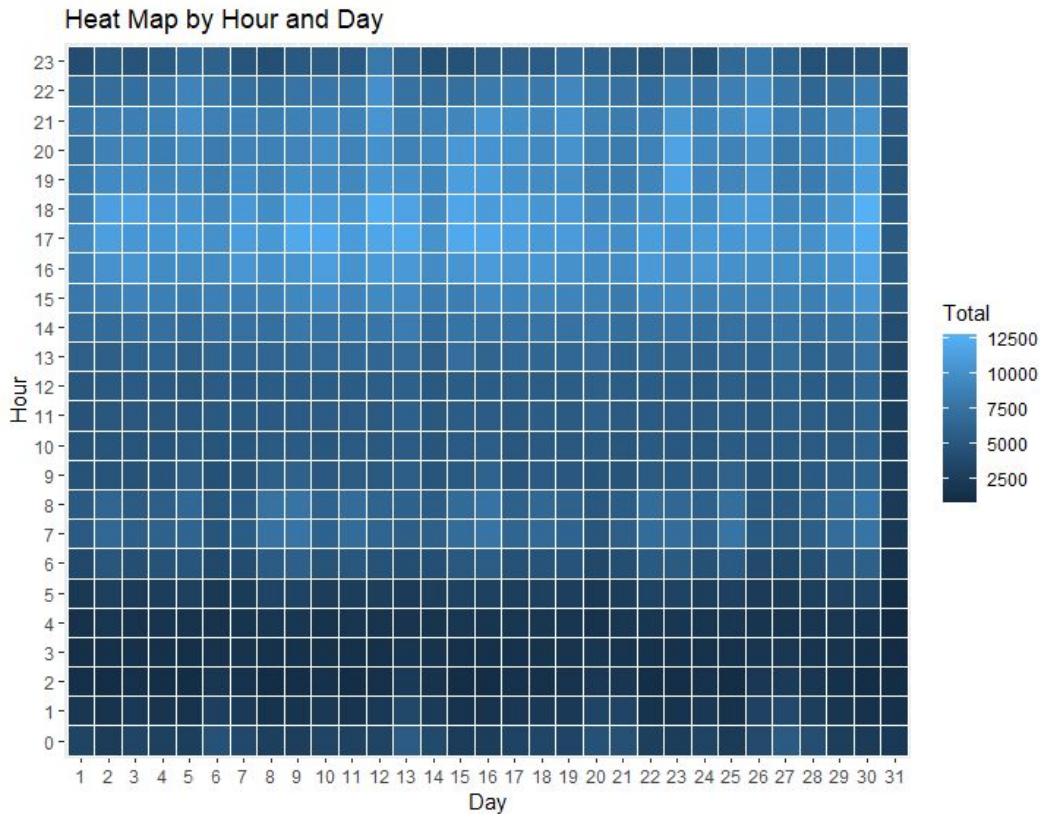**Trips by Hour**

DataFlair.training

- Trip Activity over Span of 24 Hours
- Peak times are easily distinguished
- Activity can be traced to normal movement of peoples travel throughout the day.
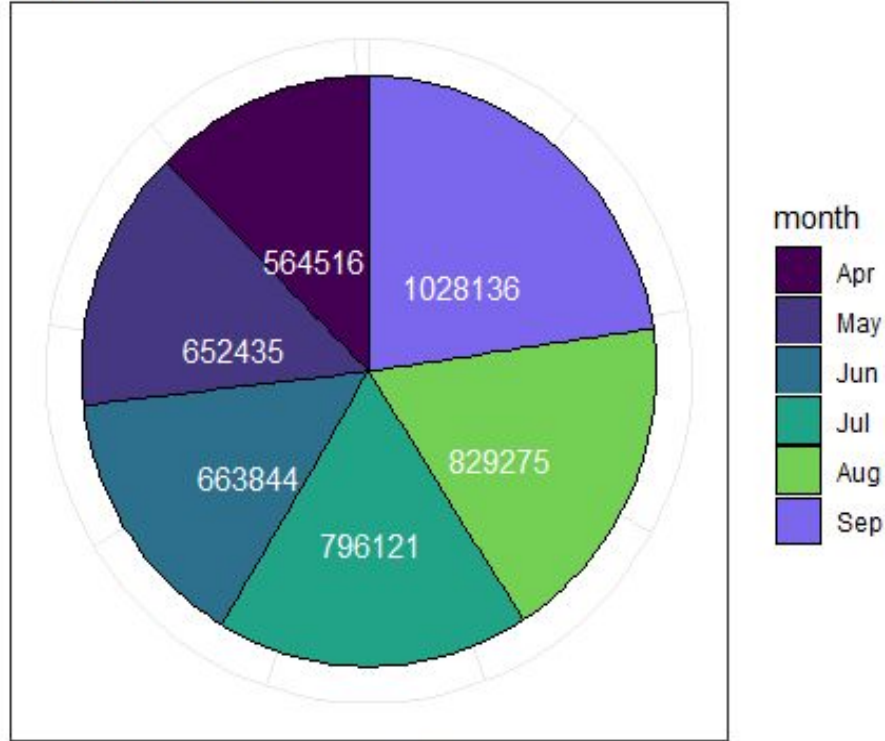
Day by Hour for Total Trips

Heat Map by Hour and Day

- Heat Map distinguishes Peak activity hours along with a correlation to days in a month.
- Are there correlations in seven day cycles?

Trips by Month

Trips by Month

564516
1028136
652435
663844
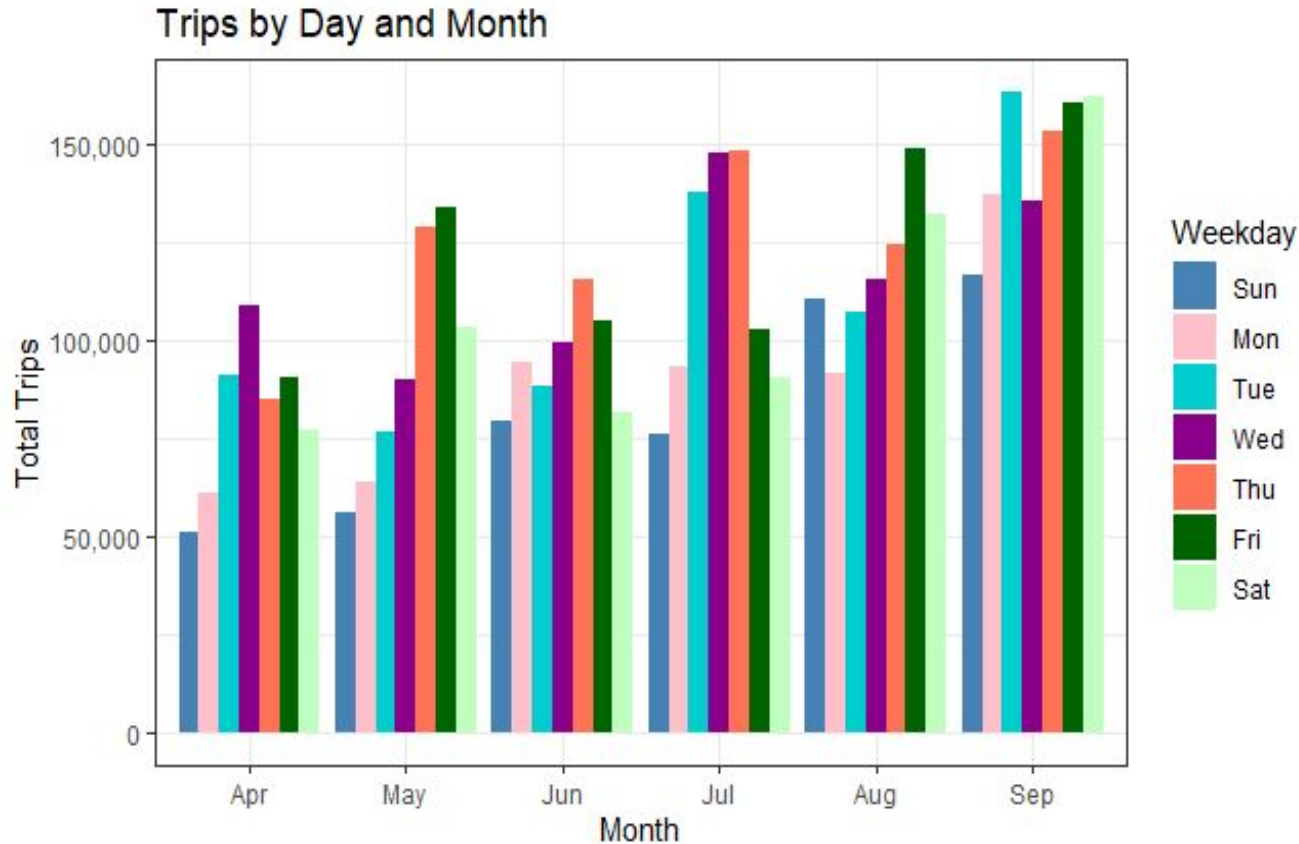829275
796121

month
- Apr
- May
- Jun
- Jul
- Aug
- Sep

Number of Trips

Data Flair.training

- Pie Chart shows 6 Months of the year and the total number of rides that are given each month.
- Does the time of year provide any context to when the number of rides might be higher?

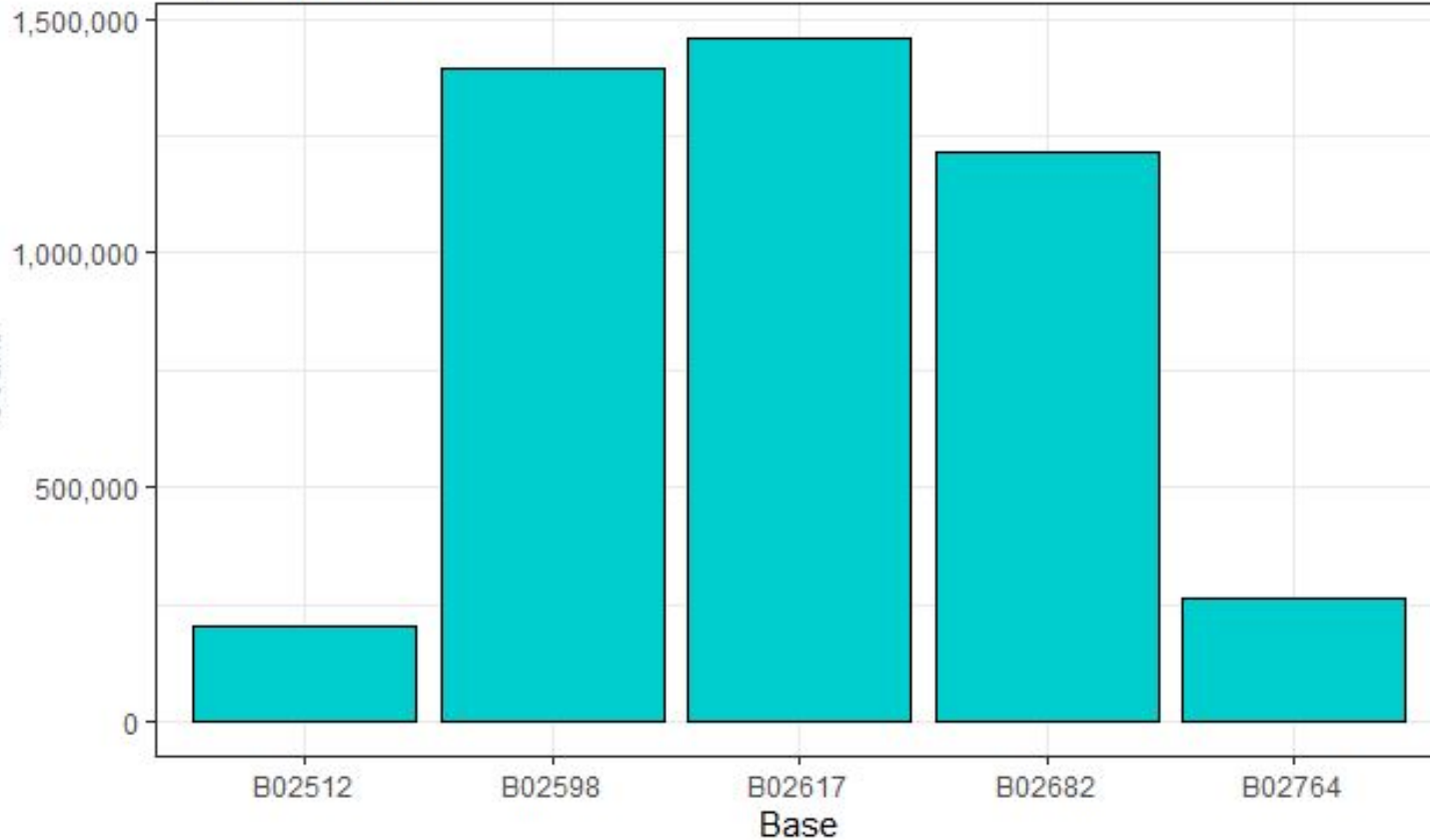# Trips by Day and Month

Trips by Day and Month

- Total number of Trips based on Month and Day of the week

- Are certain months or weekdays busier For Uber?

Trips by Bases

Trips by Bases

- Total number of Trips based on the Base (Uber Zones based on location)

- Base B02617 located in high Populated area of city (Times Square)

⊖ Conclusion

- Lyft is more expensive than Uber overall
  - Lyft Shared rides cheaper than Uber pooled rides
  - But Uber has overall better prices for individual riders

- Uber rides are more common around dinner time/ early evening near the weekends, which can make them more expensive during "off-peak" times (noon)

- Uber Pool is the most cost efficient Uber type per distance.

- More Uber rides are ordered in highly populated areas

Thank You!

References

- Chang, W. (2021, September 23). *13.17 Creating a Map | R Graphics Cookbook, 2nd edition*. R Graphics Cookbook, 2nd Edition. https://r-graphics.org/recipe-miscgraph-map
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