CUSTOMER PROFILE ANALYSIS

A case study to explore customer behaviour in a fictitious bike-share company looking to increase their memberships.

(Part of Capstone project for Google Data Analytics course offered by Coursera)

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INTRODUCTION

Cyclistic is a fictitious bike-share company based in the city of Chicago, Illinois, USA.

The director of marketing (DOM) at Cyclistic believes the company's future success depends on maximizing the number of annual memberships. This claim is also backed by the finance team. The DOM needs the internal marketing analyst team to provide data insights and compelling visualizations to convince the executive team of Cyclistic to approve the marketing strategy to convert casual riders into annual members.

The DOM has posited below three questions which would guide the future marketing program:

1. How do annual members and casual riders use Cyclistic bikes differently?

2. Why would casual riders buy Cyclistic annual memberships?

3. How can Cyclistic use digital media to influence casual riders to become members

My role : *Junior data analyst working as part of the marketing analyst team.*

Task assigned : *To understand and communicate "How annual members and casual riders use Cyclistic bikes differently."*

EXECUTIVE SUMMARY

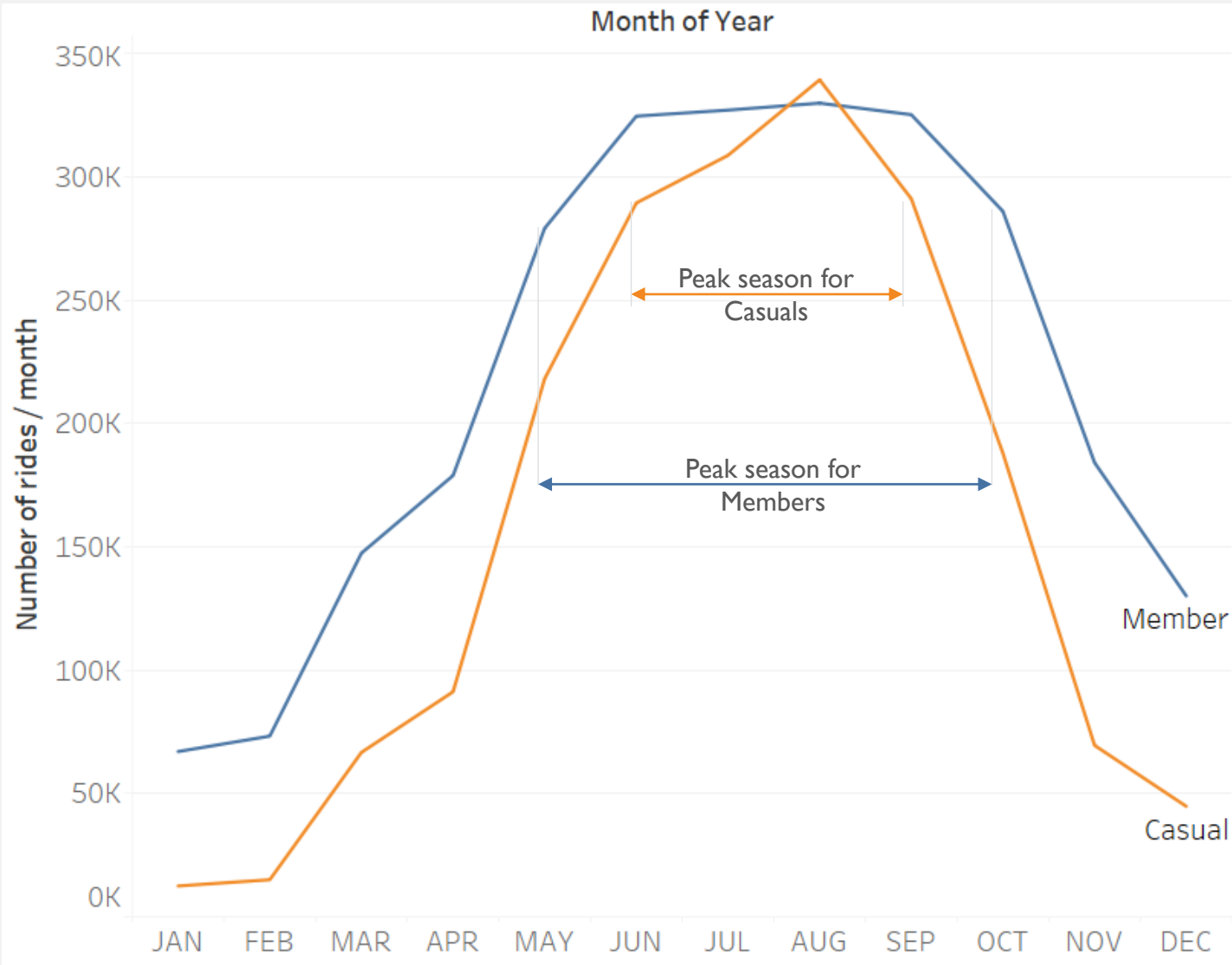The differences in customer behavior between annual members and casual riders have been summarized below.

1. The number of rides booked by annual members are almost 35% more than casual members over the year with higher activity in the weekdays in comparison to the weekends.

2. Duration per ride is a metric that clearly differentiates casual riders from annual members.

Annual members	Casual riders
25.08 min / ride	12.66 min/ride

3. The (Frequency of rides) x (Ride duration) metric adds another dimension to the above two metrics. For instance, this metric shows that the highest frequency of casual rider bookings probably occurred in the past year on a Saturday at 17:00 hrs in the month of August for a ride duration of 8 minutes.

4. Both casual riders and annual members show a higher preference for a classic bike. Docked bikes are exclusively used by casual riders for ride durations that are on average three times greater than classic or electric bikes.

5. Casual riders have a higher preference for stations closer to the harbor while annual members have a more uniform demand for stations closer to the business areas which are slightly away from the harbor.
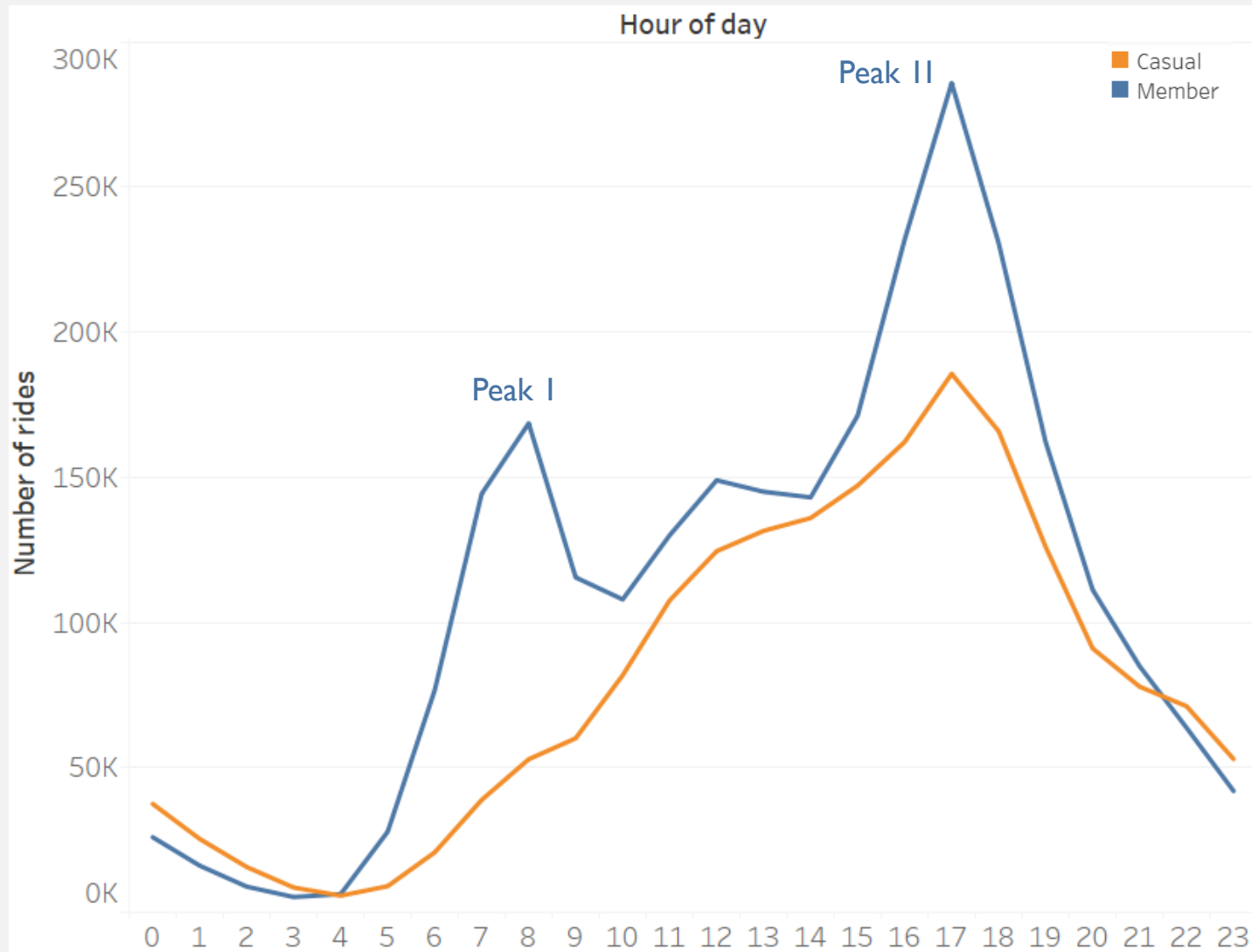
These are the key differences in customer behavior which would help customize the marketing approach and campaign.
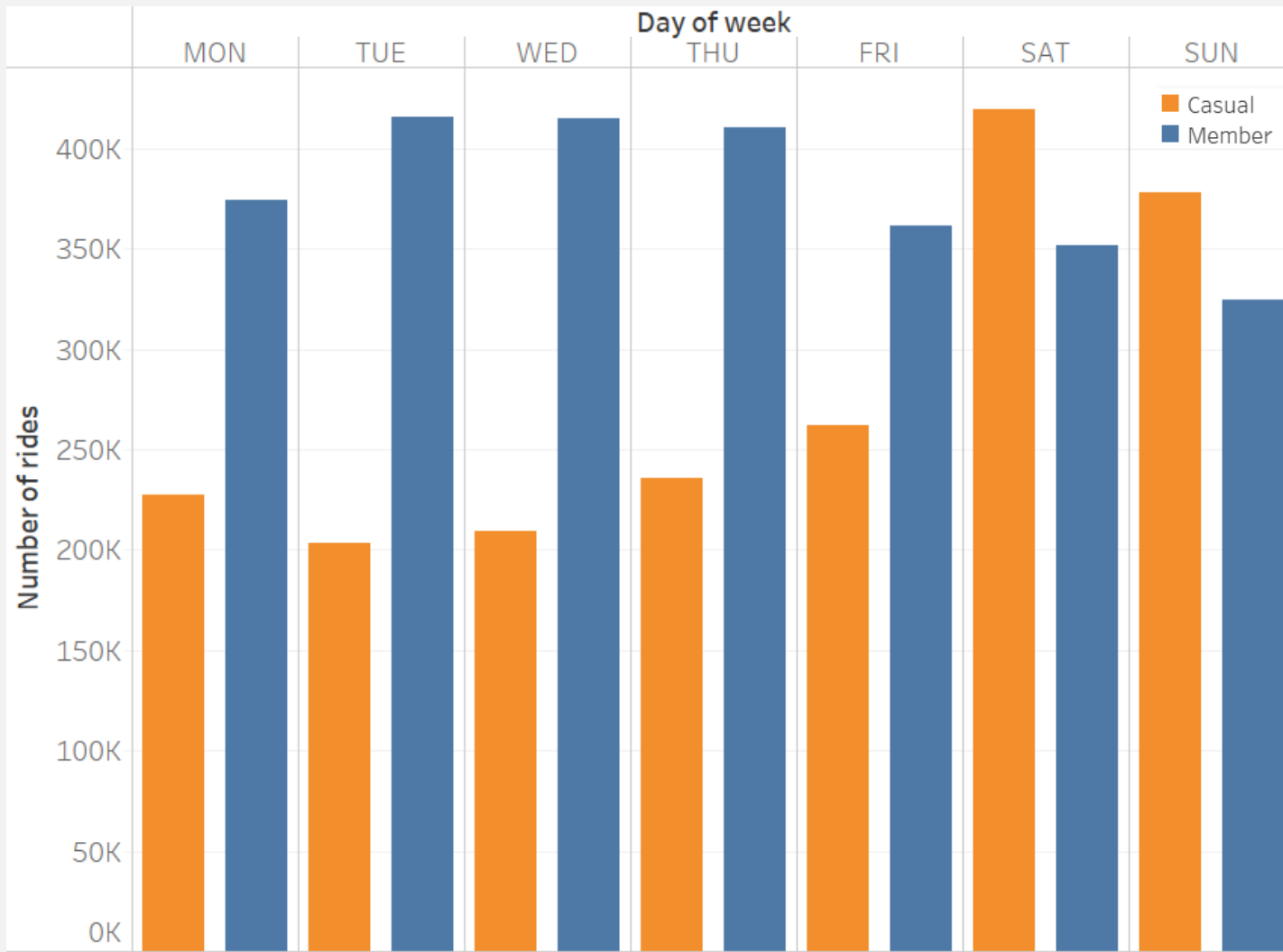
1. METRIC: NUMBER OF RIDES

Month of Year

- **Casual riders have a shorter peak season in comparison to annual members.**

- **The Annual members consistently have more number of rides in comparison to Casual riders throughout the year.**

- The annual members have two peaks in a day for booking rides for starting /ending at 08:00 hrs and 17:00 hrs which coincides with standard office start and end hours.

- Casual riders have a normal peak activity around 5 P.M. however, the annual members book almost 50% higher in the same time period.

- Casual riders prefer to use Cyclistic in the weekends i.e. 17% higher than members peaking on Saturday.

- Annual members use ~90% more number of rides compared to casual riders during the middle of the work week i.e. Tuesday to Thursday of every week.

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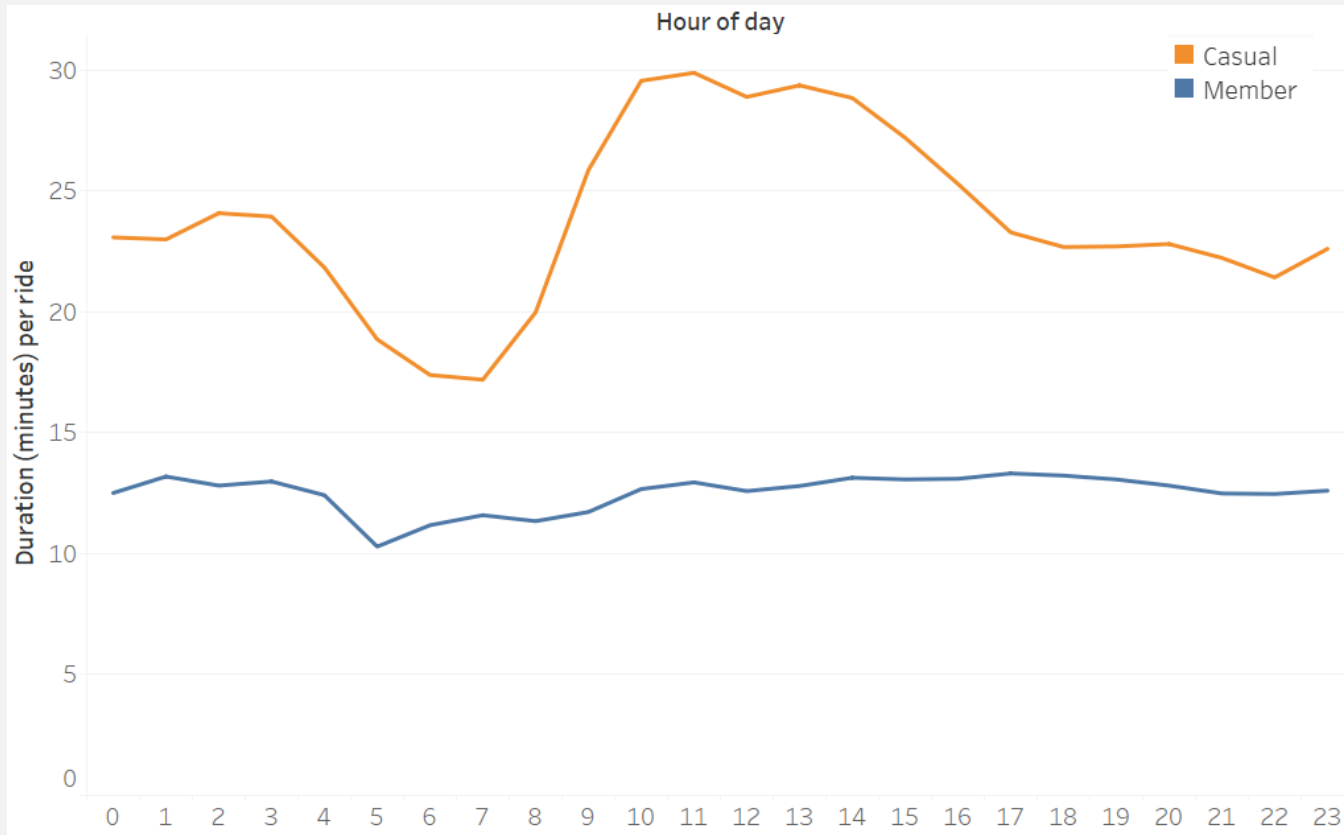
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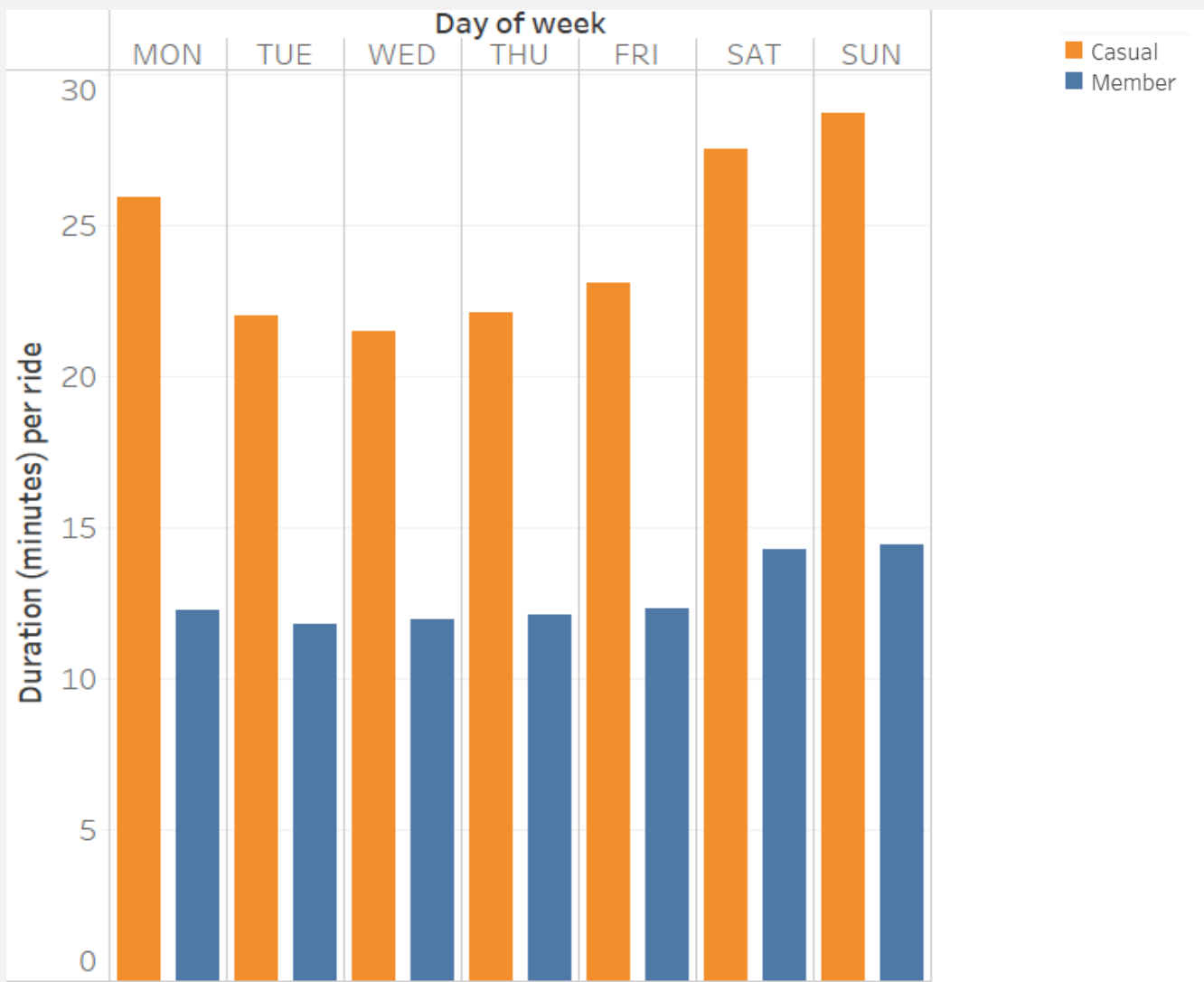
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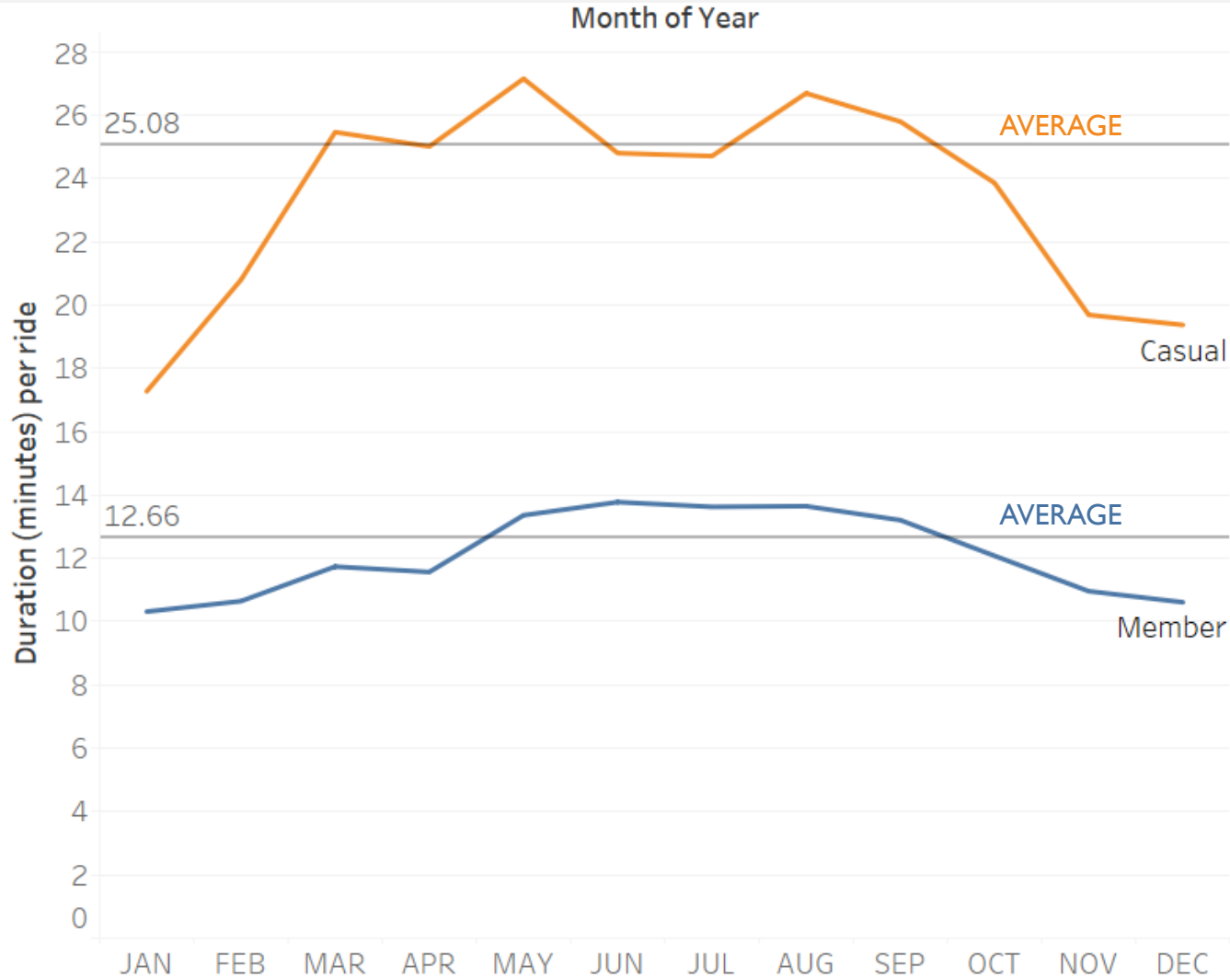
- Over the entire year, the casual riders spend almost twice the duration per ride in comparison to the annual members.

- Both Annual Members & Casual riders have peak duration per ride between the months of May and September.

- Annual members have a more uniform demand compared to Casual riders throughout the year probably because they use Cyclistic services for their work commutes.

- For casual riders, the peak duration per ride occurs for rides booked around 9AM and 4 PM.

- Duration per ride for the casual riders is ~50% higher than annual members throughout the week. .

- Casual riders have a duration per ride which is 20% higher on weekends in comparison to weekdays.
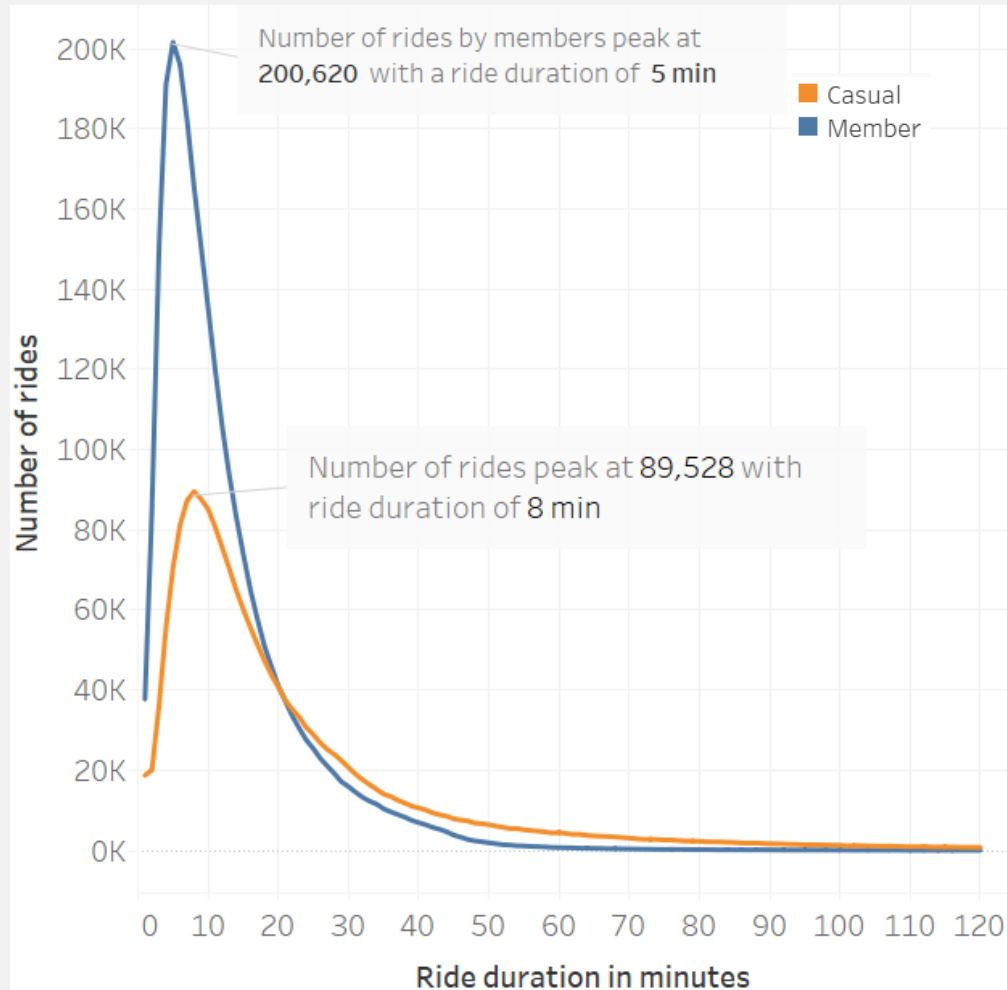
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- Over the entire year, the casual riders spend almost 98% more time per ride in comparison to the annual members.

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3. METRIC: (FREQUENCY OF RIDES) x (RIDE DURATION)

This graphs shows the frequency of ride over ride duration for the entire year.

Maximum frequency of rides occurs at

- 5 minutes for annual members and
- 8 minutes for casual riders

which ties in with the claim that most annual members have shorter ride durations but higher number of rides compared to casual riders.

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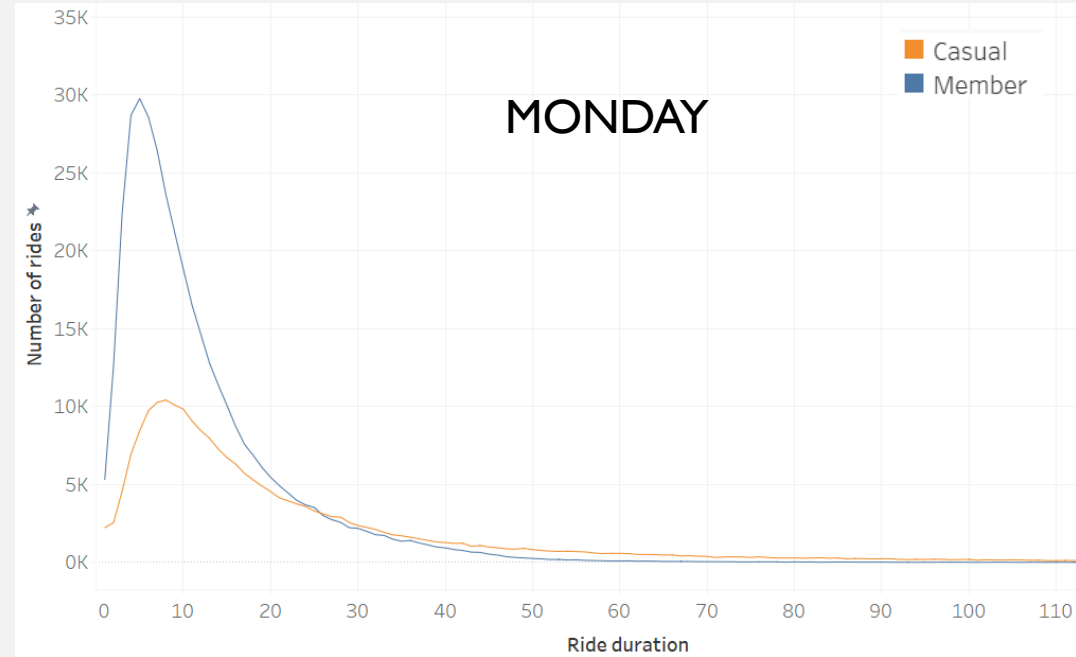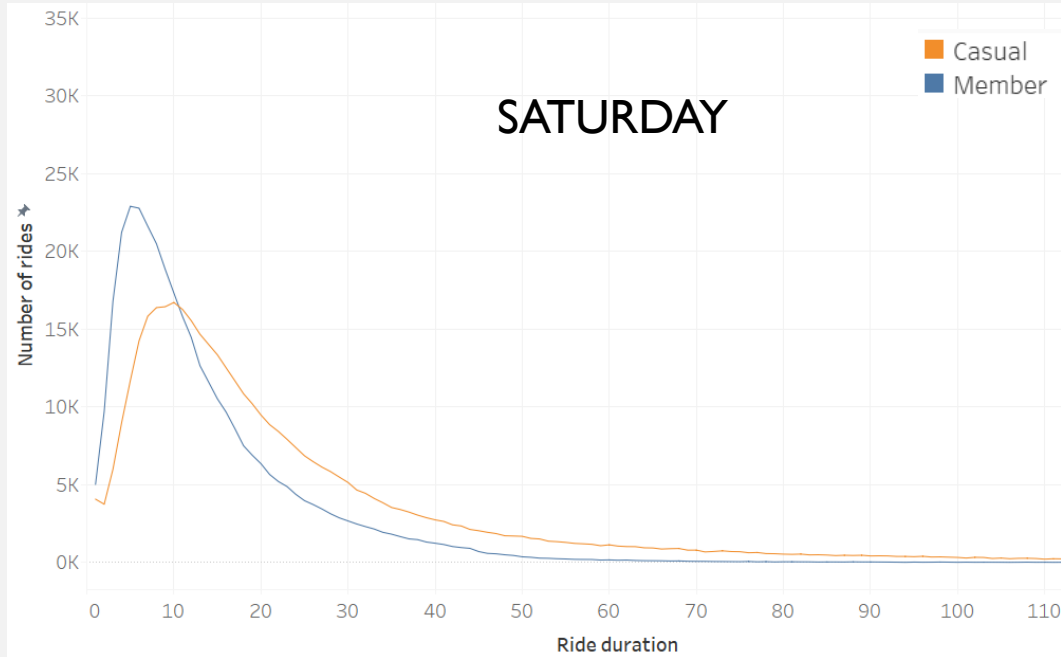
MONTH OF YEAR BASIS
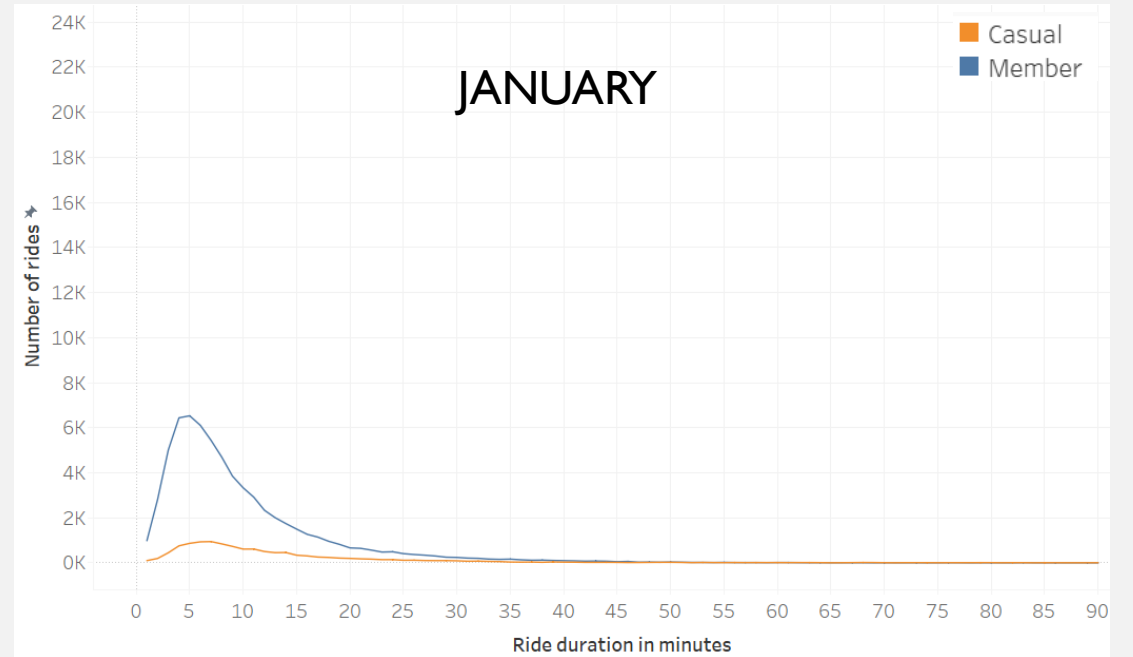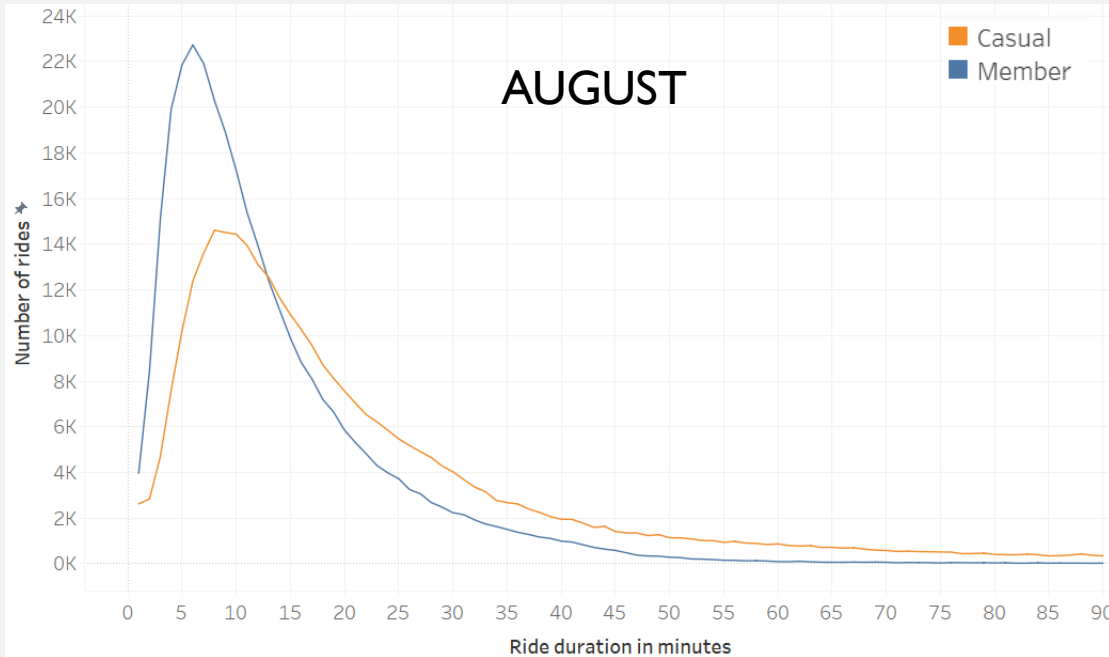
AUGUST

JANUARY

Graphs shown only for casual riders

	Annual members		Casual riders	
	HIGH on September	LOW on January	HIGH on August	LOW on January
Frequency	23,500	6,500	14,600	940
Ride duration	5	5	8	7

3. METRIC: (FREQUENCY OF RIDES) × (RIDE DURATION)

DAY OF WEEK BASIS

SATURDAY

MONDAY

Graphs shown only for casual riders

	Annual members		Casual riders	
	HIGH on Tuesday	LOW on Sunday	HIGH on Saturday	LOW on Monday
Frequency	34,200	21,300	16,700	10,400
Ride duration	5	5	10	8

3. METRIC: (FREQUENCY OF RIDES) x (RIDE DURATION)

HOUR OF DAY BASIS

08:00 hrs (8 A.M.)

17:00 hrs (5 P.M.)
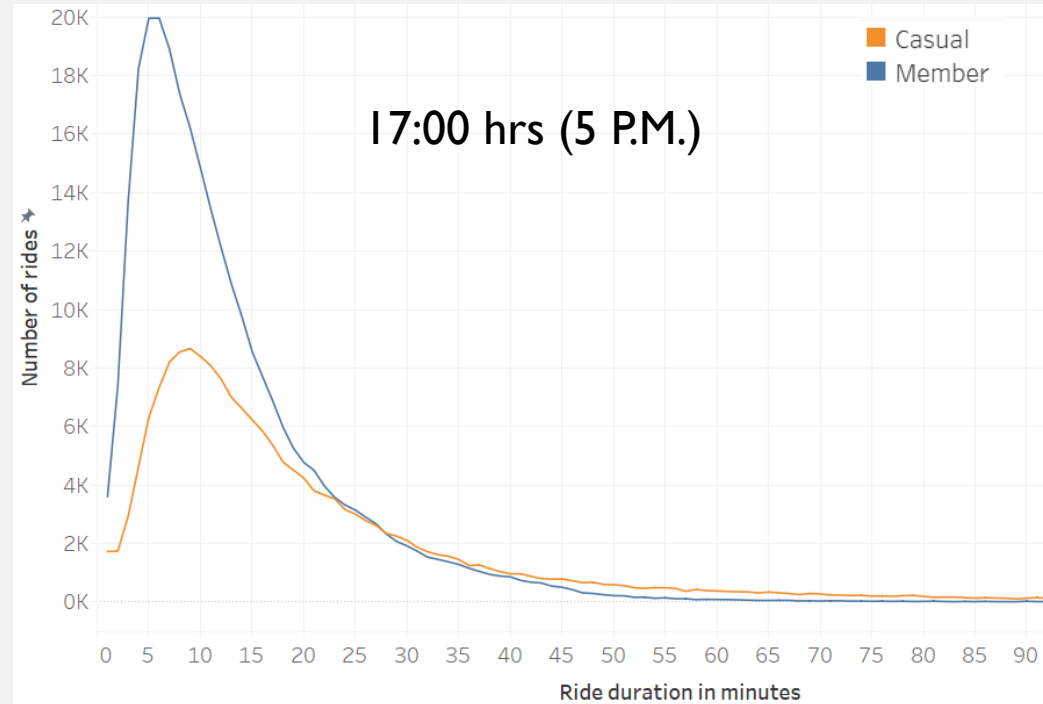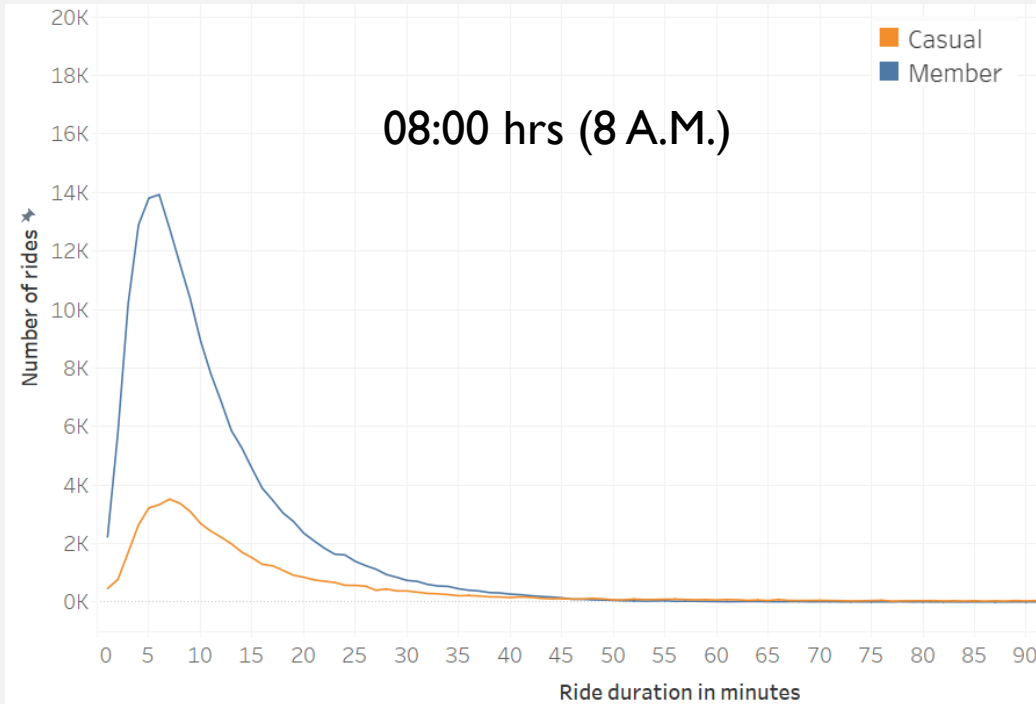
Graphs shown only for casual riders

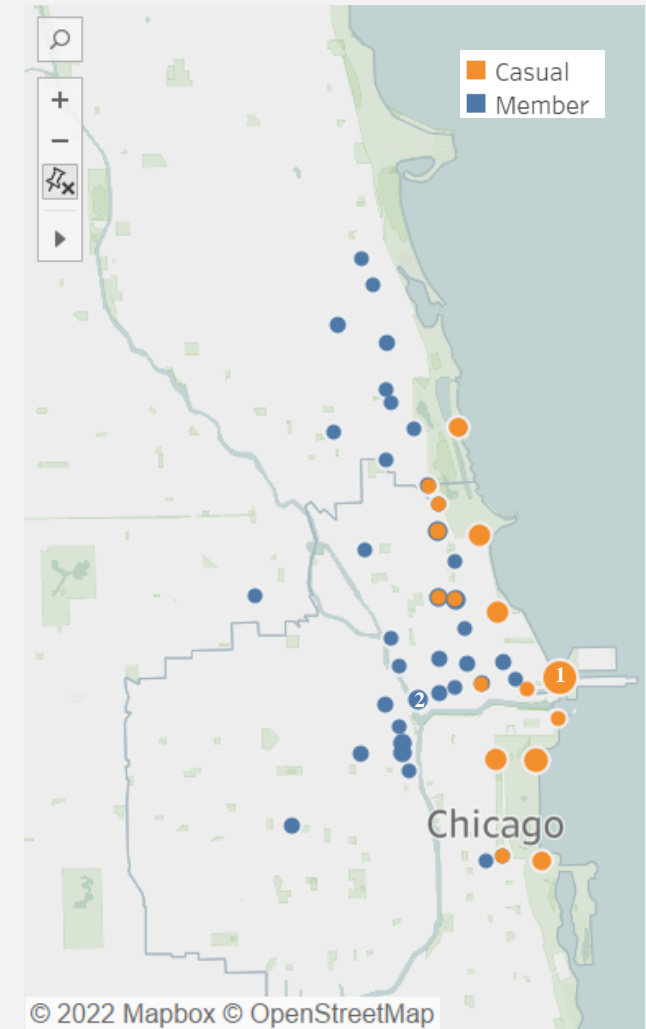|	Annual members		Casual riders	
	HIGH at 17:00 hrs	2nd HIGH at 08:00 hrs	HIGH at 17:00 hrs	2nd HIGH at 08:00 hrs
Frequency	19,900	13,900	8,664	3,500
Ride duration	5.5	6	9	7

4. BIKE TYPE PREFERENCE
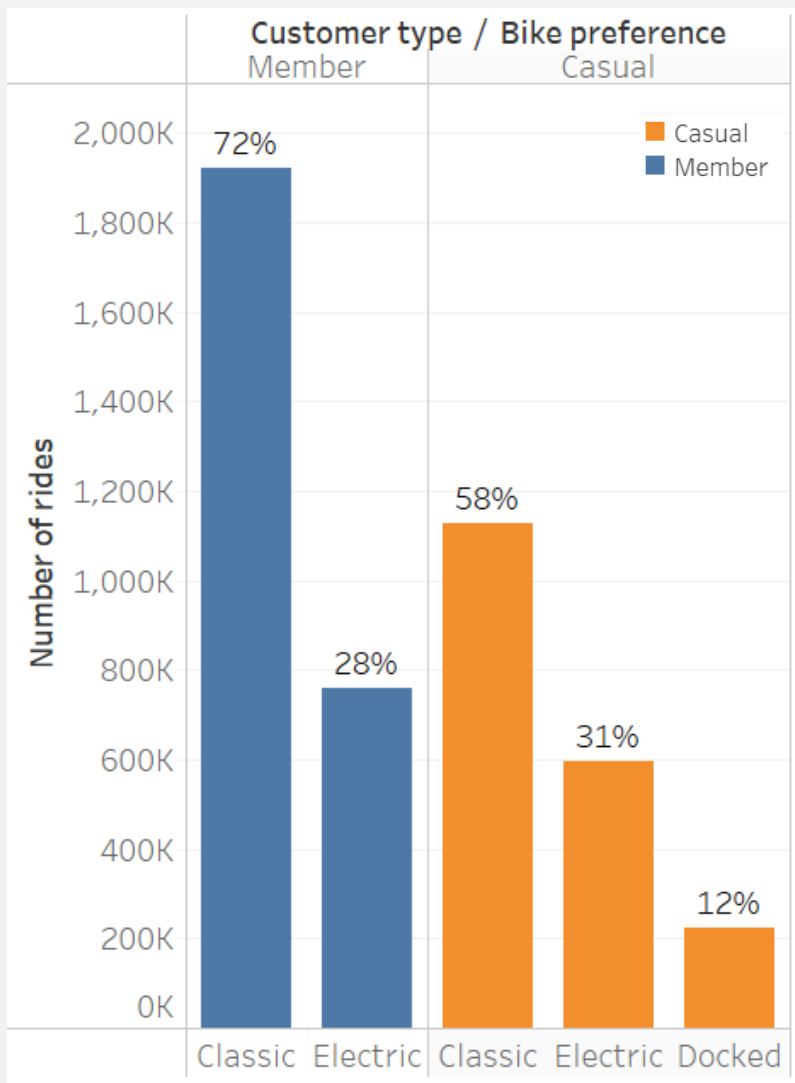
- Member riders take 70% more number of rides in Classic bikes in comparison to casual riders.

- Casual riders use a mix of Classic, Electric and Docked bikes unlike members who prefer a classic.

- Casual riders spend 10% more time than annual members on classic bikes annually.

- Casual riders spend 25% more time than annual members on electric bikes annually.

- Docked bikes are used exclusively by casual members and have an average ride duration of ~45 minutes which is three times that of the other bike types.

5. LOCATION PREFERENCE
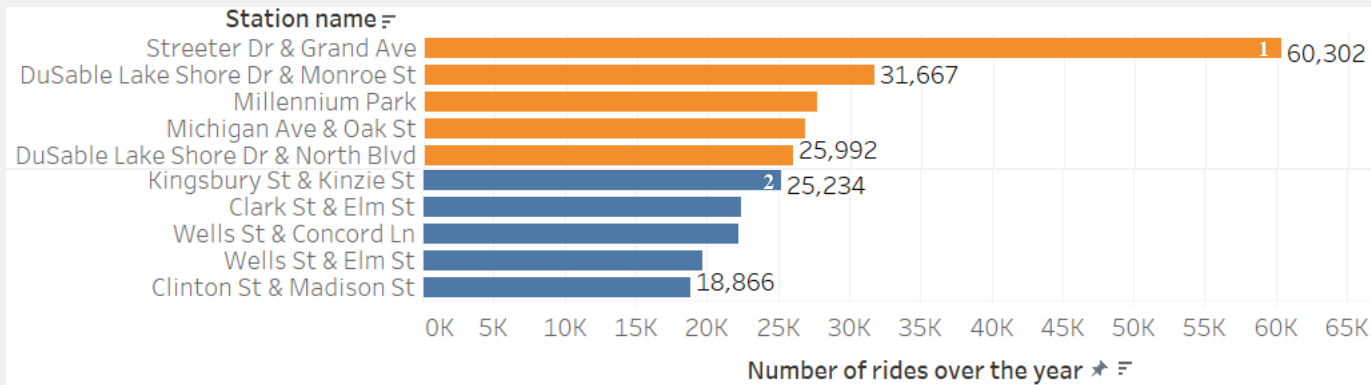
- Top 10 stations shown here shows that there is a huge volume of traffic at Streeter Dr. & Grand avenue station which is the clear favorite for casual riders.

- All the major stations popular with casual riders stick to the harbor.

- Annual members tend to use stations slightly away from the main harbor area which coincides with the commercial office locations.

NEXT STEPS

Recommendations

- The marketing plan needs to be targeted at casual riders with focus on top stations close to the harbour during the peak months (June to September) on Saturdays at 4 pm to 6 pm ideally.

- Special annual memberships can be offered to regular casual members that bike on weekends.

- A survey needs to be designed in order to address information gaps in rider data which could potentially throw light on more possible interdependencies.

Possible information gap that needs to be addressed.

- How many distinct users are using the service in a day? This detail even if anonymised but with unique identifiers will give more insights of customer behaviour.

- Customer age group, sex, occupation and other demographic details could help enrich the data set which could lead to more insights.

- How many casual members have converted to annual memberships in the past will shed more light on customer behaviour.
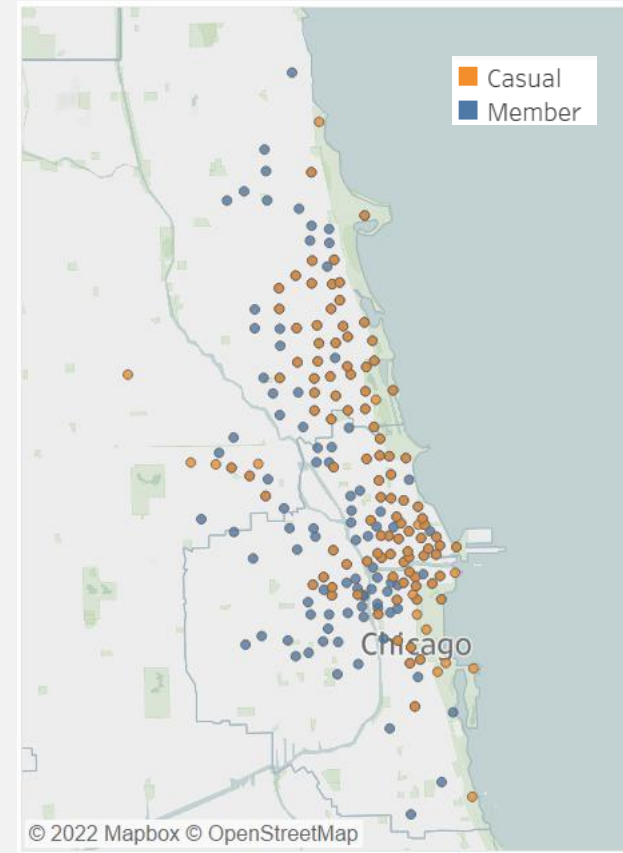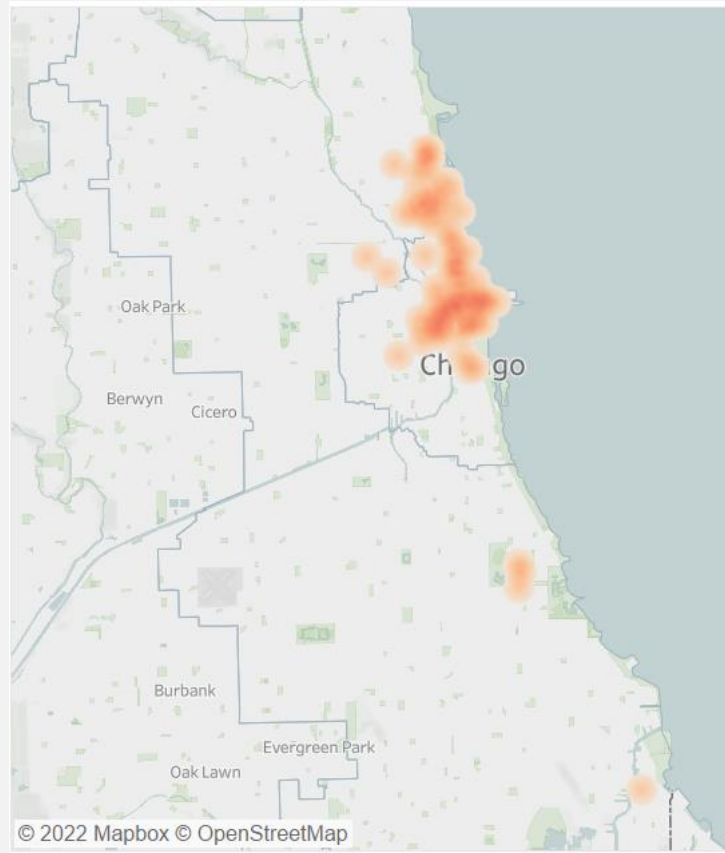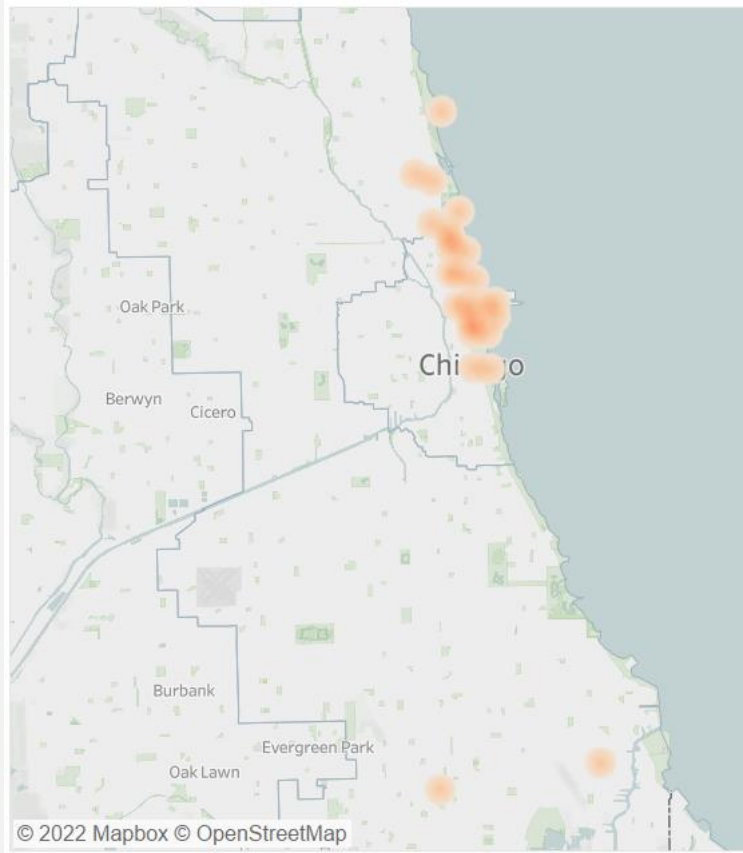
A successful conversion of a casual rider to a happy annual member will depend on making the best offer at the right time in the right location.
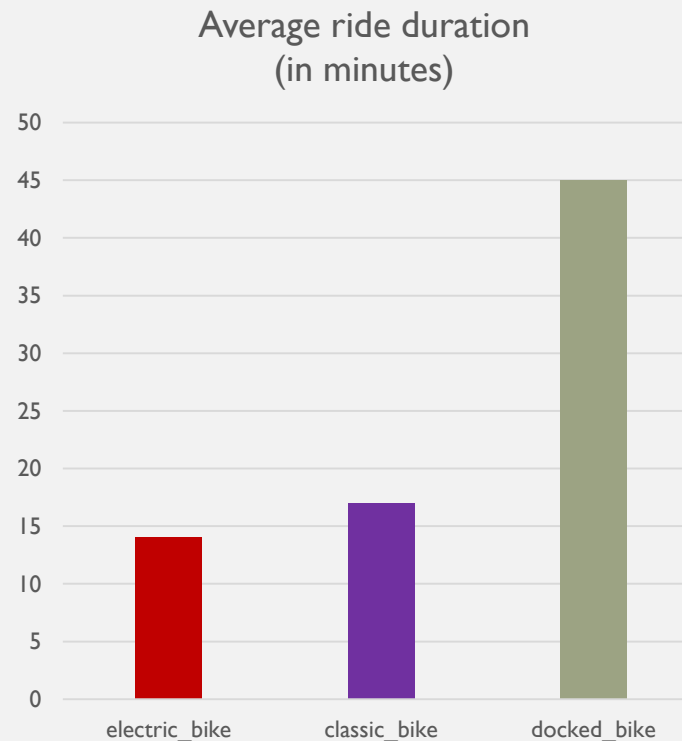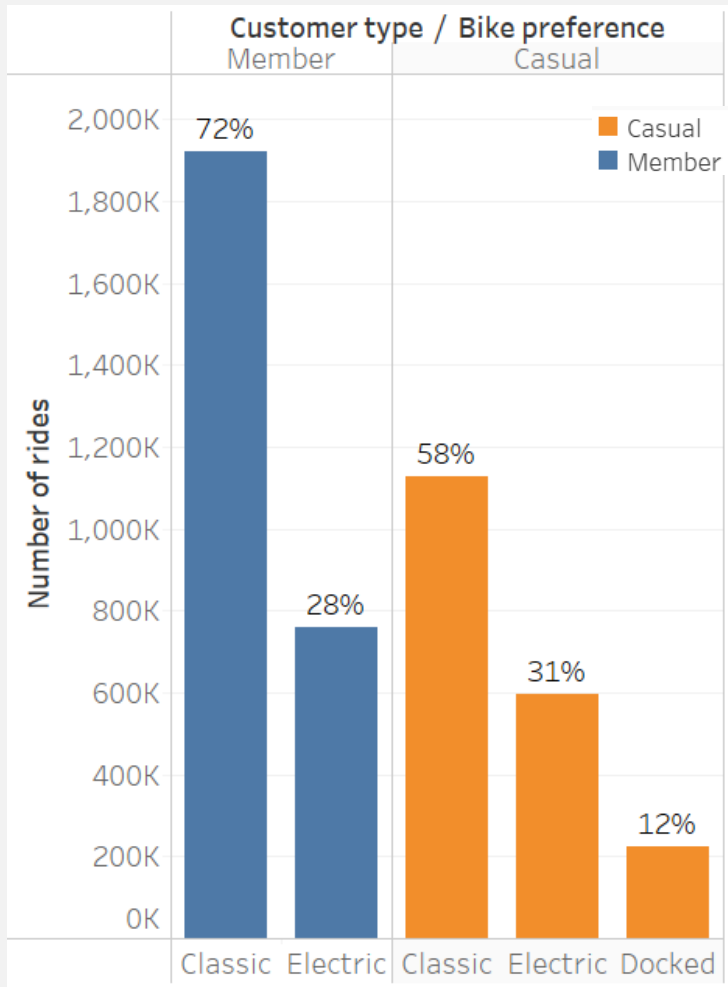
THANK YOU

BACK UP DATA

LOCATION PREFERENCE

ADDITIONAL

Customer type / Bike preference

Number of rides by Member and Casual for Classic, Electric, and Docked bikes:
- Member: Classic 72%, Electric 28%
- Casual: Classic 58%, Electric 31%, Docked 12%

Average ride duration (in minutes)
- electric_bike: ~14
- classic_bike: ~17
- docked_bike: ~45

- Docked bike are the clear favourites for casual members for ride duration.

Total number of rides: 46,27,592
- Member: 58% — 26,79,660
- Casual: 42% — 19,47,932