Cyclistic Bike Share Analysis

Guvi Capstone: 2

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Introduction

In this case study, you will perform many real-world tasks of a junior data analyst. You will work for a fictional company, Cyclistic, and meet different characters and team members. In order to answer the key business questions, you will follow the steps of the data analysis process: ask, prepare, process, analyze, share, and act.

Scenario

I’m a junior data analyst working in the marketing analyst team at Cyclistic, a bike-share company in Chicago. The director of marketing believes the company’s future success depends on maximizing the number of annual memberships. Therefore, our team wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, our team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve our recommendations, so we must be backed up with compelling data insights and professional data visualizations.

Phase: 1 Ask

Business Task - The company wants to improve their earnings by reaching out to their casual riders, and for that, they have to analyze in what aspects the casual users and the annual customers differ, to be able to create a focused and successful marketing message for the casual customers that makes them change to the annual subscription.

Business Questions:

1. How do annual members and causal riders use cyclistic bikes differently?
2. Why would casual riders buy the annual membership?

Phase 2: Prepare

To find out user behavior between these two types of casual users and members. It needs to identify the time they use, their site, and the kinds of bikes they ride in the data. Gain insight into user behavior patterns; the marketing can follow up to make suitable promotions and marketing campaigns.

The data that I used is public data from a bike-share company and is kept regularly updated by Google. For this analysis, I used the last 12 months' data **(April 2020 – March 2021)**.

Phase 3: Process

In the data clean phase, I used Tableau to clean up the null values and unnecessary data and I created a single data frame for all 12 months by using union option in Tableau.

Phase 4: Analyze

In the analysis phase, I used Tableau to create some custom columns like fix_start_station_name, fix_end_station_name, start_date, end_date, trip_duration, start_hour, end_hour. Calculated the ride length for every ride. Converted the raw data into convenient data frames for further analysis. Then creating visualization in Tableau for further detailed analysis.

start_date

```
DATE([Started At])
```

end_date

```
DATE([Ended At])
```

trip_duration

```
ABS(DATEDIFF('minute', [Started At], [Ended At]))
```

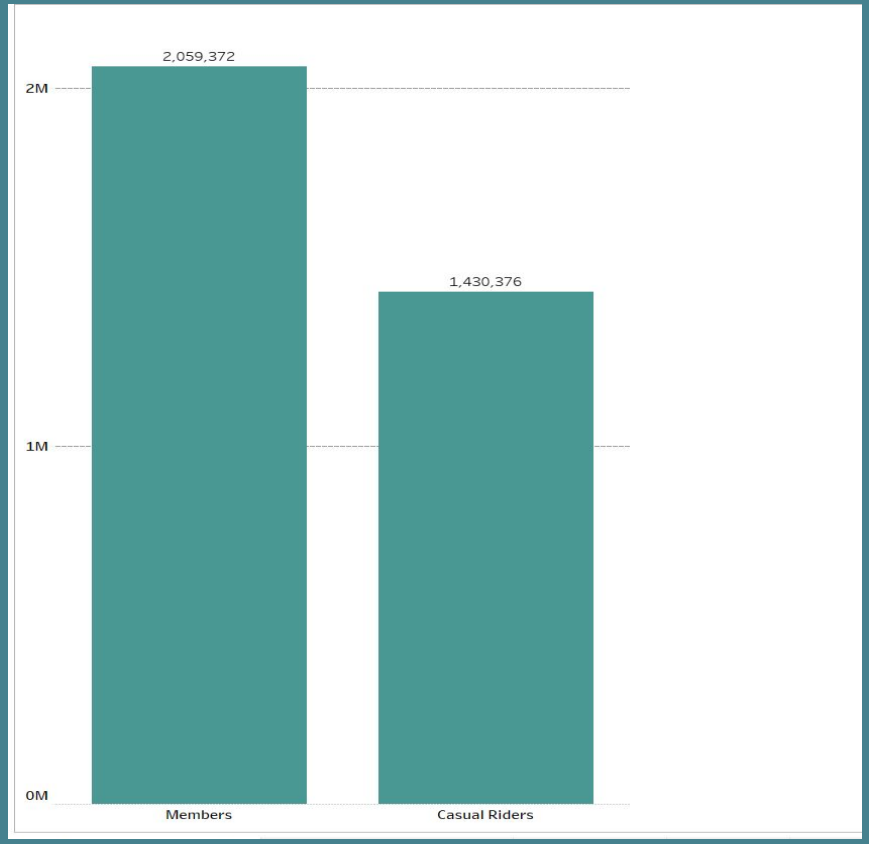
start_hour

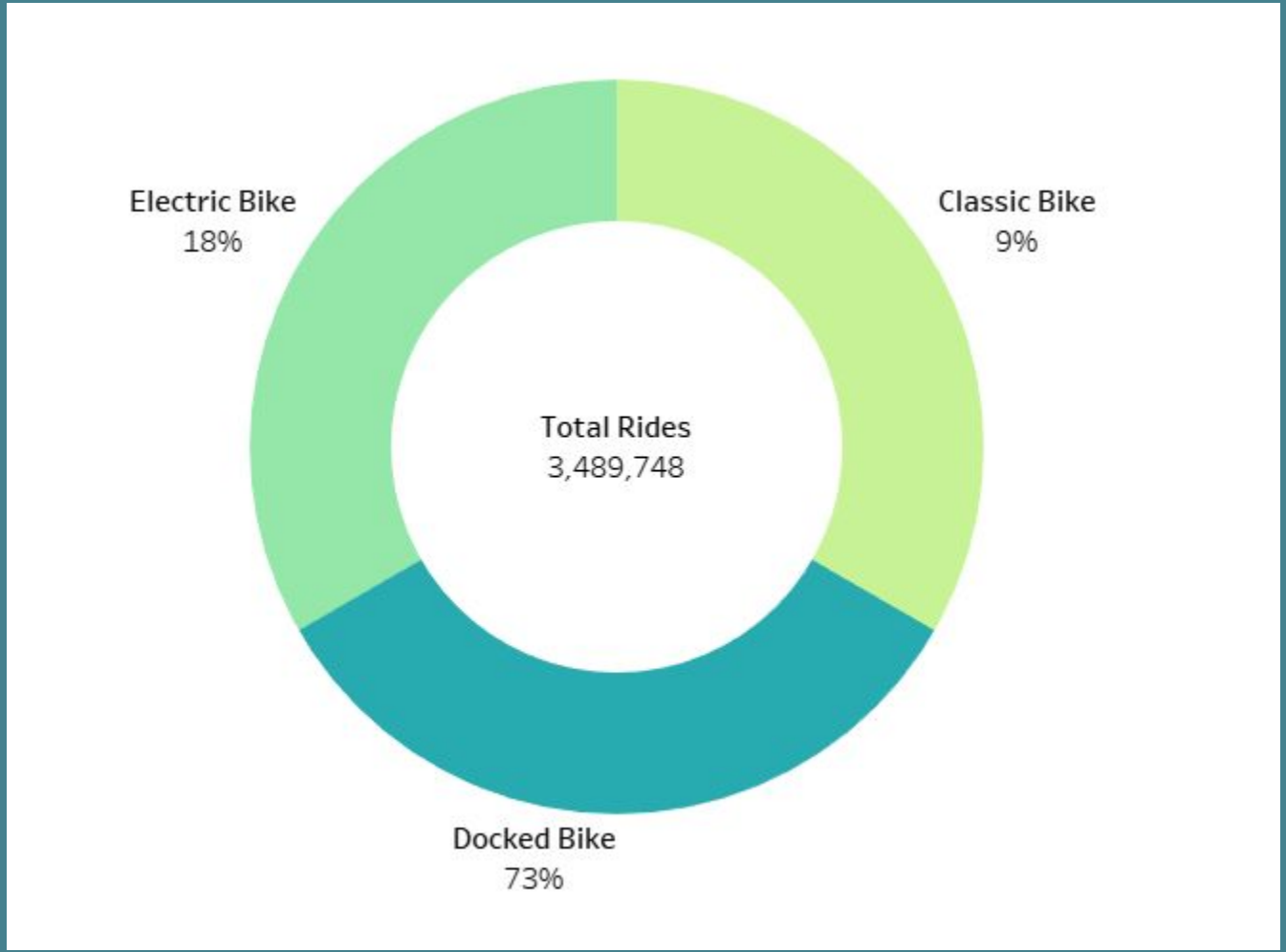
```
DATEPART('hour', [Started At])
```

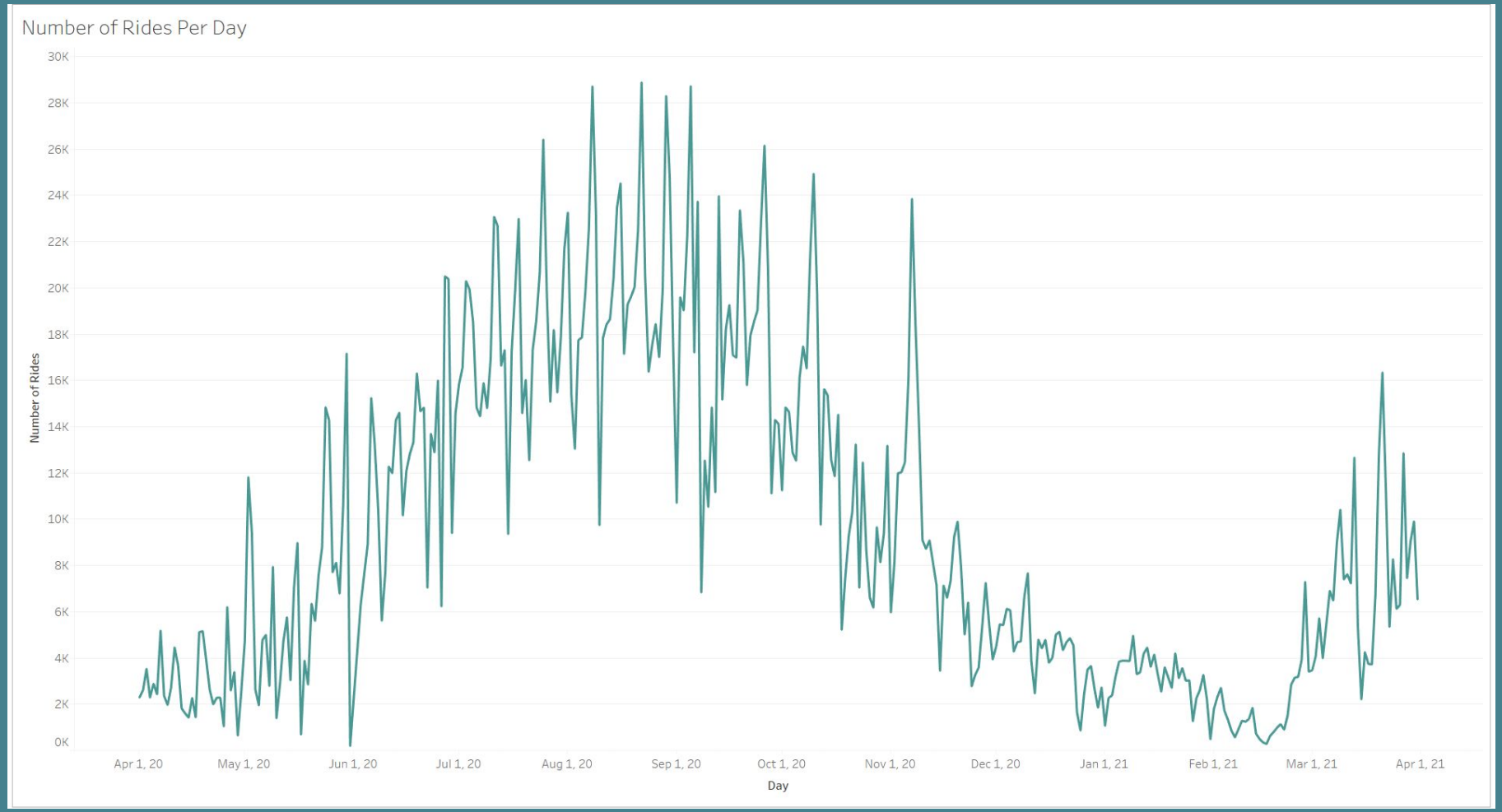
end_hour

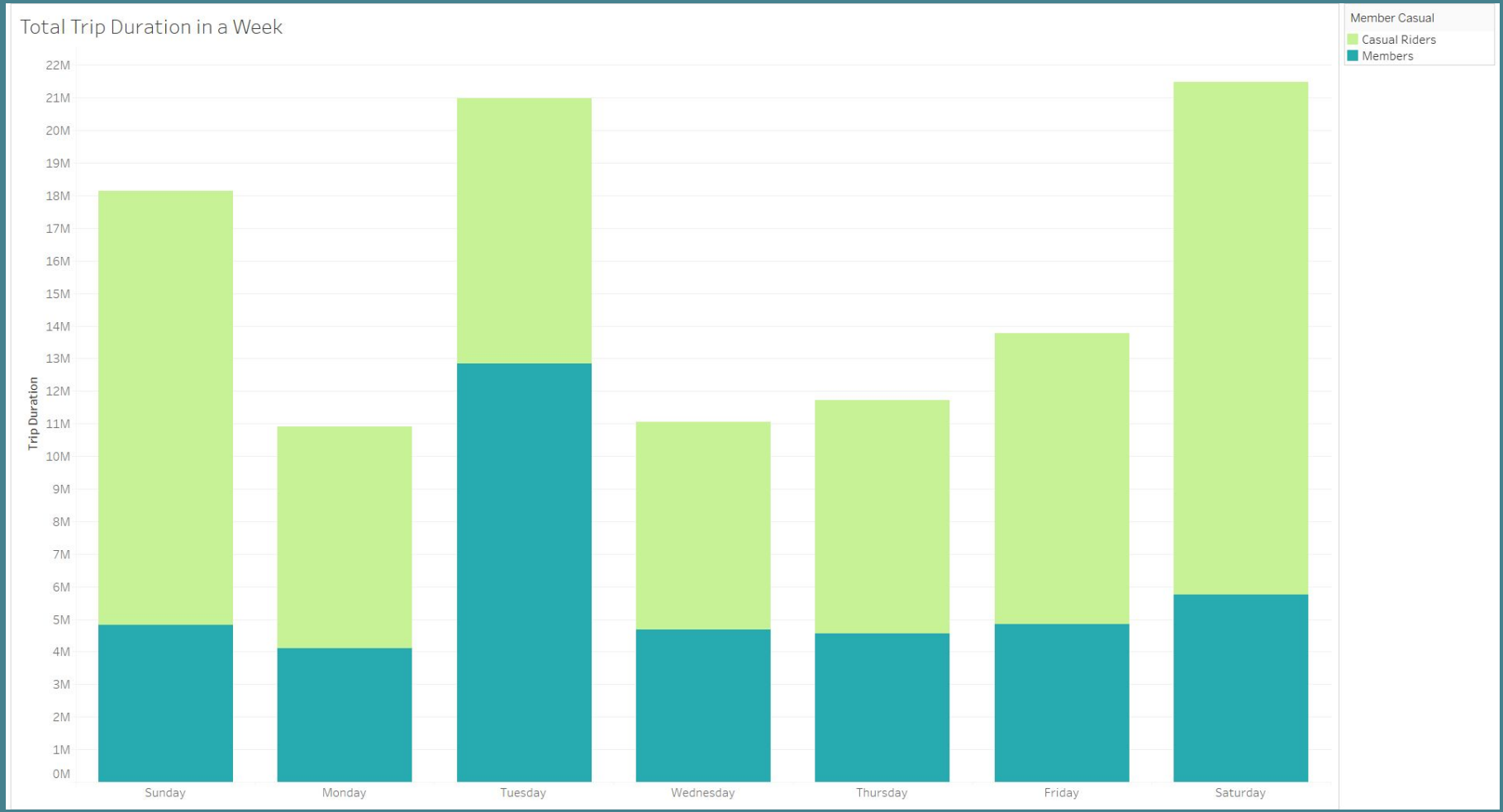
```
DATEPART('hour', [Ended At])
```

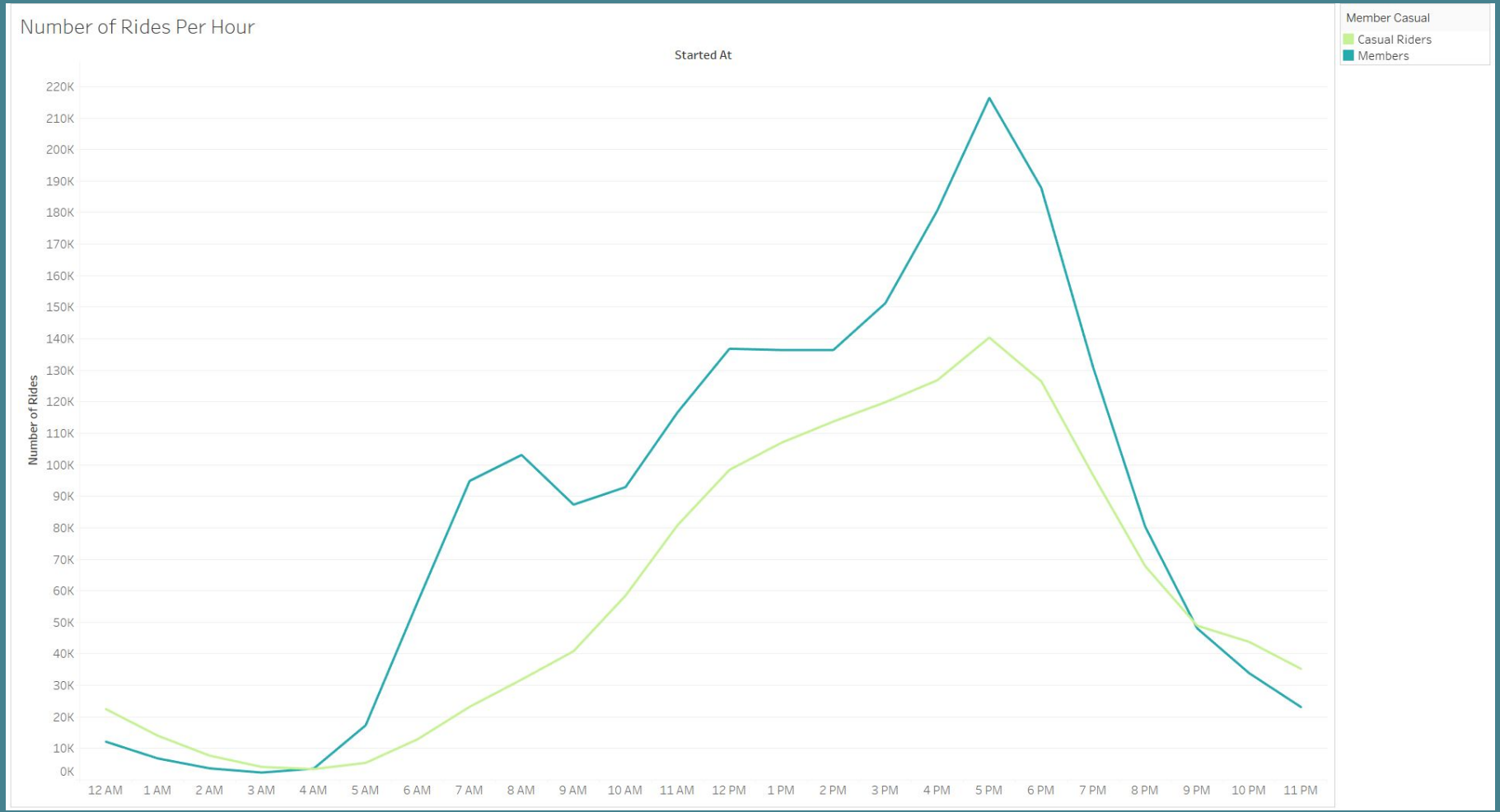
Phase 5: Share

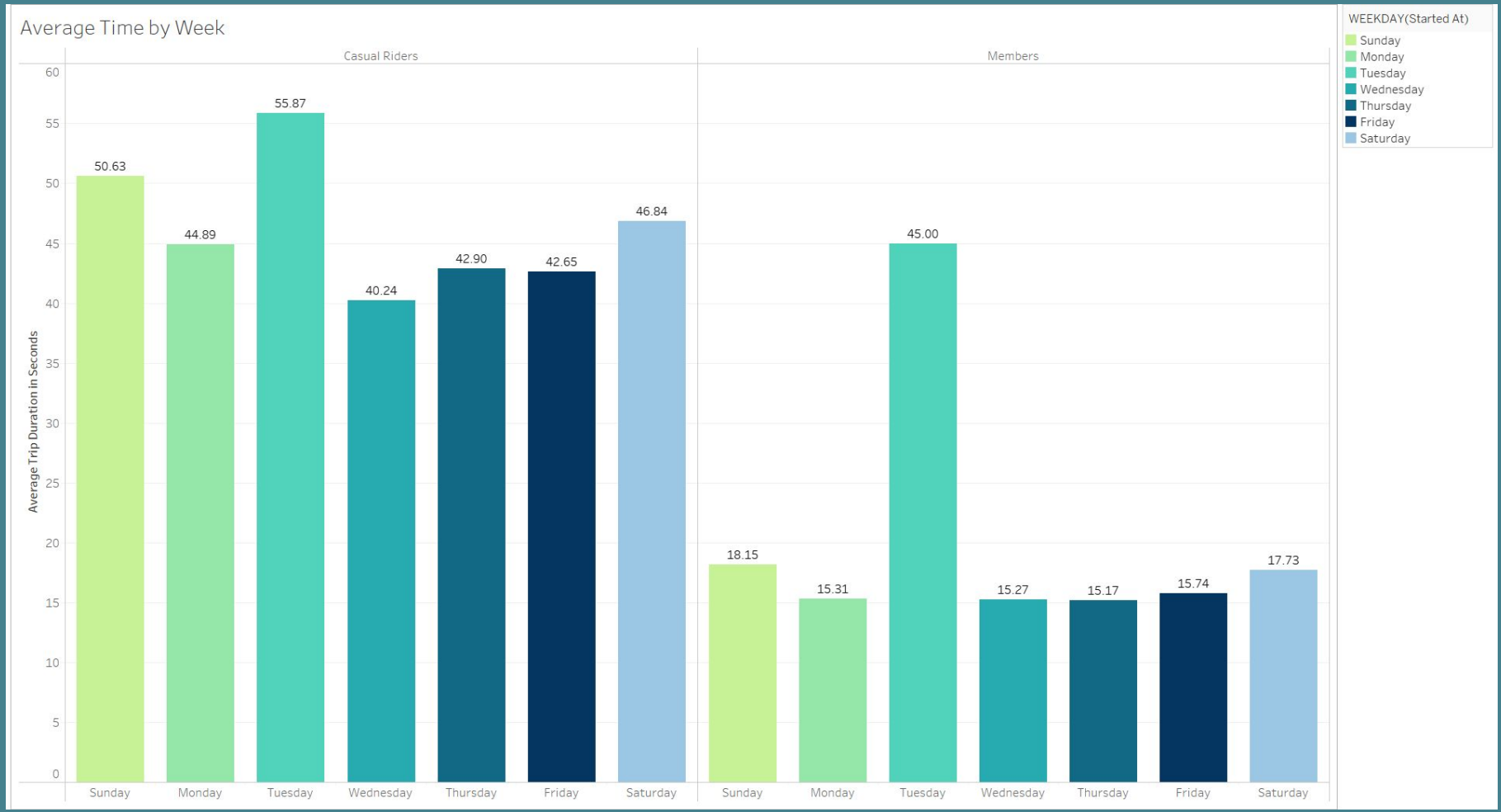



Electric Bike
18%
Classic Bike
9%
Total Rides
3,489,748
Docked Bike
73%


Number of Rides Per Day
30K
28K
26K
24K
22K
20K
18K
16K
14K
12K
10K
8K
6K
4K
2K
0K
Number of Rides
Apr 1, 20
May 1, 20
Jun 1, 20
Jul 1, 20
Aug 1, 20
Sep 1, 20
Oct 1, 20
Nov 1, 20
Dec 1, 20
Jan 1, 21
Feb 1, 21
Mar 1, 21
Apr 1, 21
Day


Total Trip Duration in a Week
Member Casual
Casual Riders
Members
Trip Duration
22M
21M
20M
19M
18M
17M
16M
15M
14M
13M
12M
11M
10M
9M
8M
7M
6M
5M
4M
3M
2M
1M
0M
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday


Number of Rides Per Hour
Started At
Number of Rides
220K
210K
200K
190K
180K
170K
160K
150K
140K
130K
120K
110K
100K
90K
80K
70K
60K
50K
40K
30K
20K
10K
0K
12 AM
1 AM
2 AM
3 AM
4 AM
5 AM
6 AM
7 AM
8 AM
9 AM
10 AM
11 AM
12 PM
1 PM
2 PM
3 PM
4 PM
5 PM
6 PM
7 PM
8 PM
9 PM
10 PM
11 PM
Member Casual
Casual Riders
Members


Average Time by Week
Casual Riders
Members
Average Trip Duration in Seconds
0
5
10
15
20
25
30
35
40
45
50
55
60
50.63
44.89
55.87
40.24
42.90
42.65
46.84
18.15
15.31
45.00
15.27
15.17
15.74
17.73
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
WEEKDAY(Started At)
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday


Number of Rides Per Month
Member ..
Month of Started At
Member Casual
Casual Riders
Members
Casual Riders
Members
No. of Rides
350K
300K
250K
200K
150K
100K
50K
0K
23,628
86,909
154,718
269,296
289,661
230,692
145,012
88,099
30,080
18,117
10,131
84,033
61,148
113,365
188,287
282,184
332,700
302,266
243,641
171,617
101,493
78,717
39,491
144,463
April 2020
May 2020
June 2020
July 2020
August 2020
September 2020
October 2020
November 2020
December 2020
January 2021
February 2021
March 2021

Business Questions:

1. **How do annual members and causal riders use cyclistic bikes differently?**

- Cyclistic bikes are predominantly utilized by Annual Members for local, educational, and conventional 9-to-5 commuting purposes. In contrast, Casual riders tend to use Cyclistic bikes more frequently for mid-day, late evening, and weekend rides, surpassing the usage by Annual Members. This inclination among Casual riders is likely driven by a desire for leisure, light exercise, or short errands, serving as a means of general transportation for both locals and tourists.
- While Members exhibit no discernible preference between the two types of bikes, Casual riders demonstrate a preference for Docked bikes over classic bikes.

Business Questions:

2. Why would casual riders buy the annual membership?

- If Casual Riders were informed about the potential savings and additional ride time they are currently foregoing, there's a likelihood that they would suit for the more advantageous option of acquiring an annual membership. Despite Docked bikes being the preferred choice among Casual Riders, they tend to have the shortest average ride durations on them. A plausible explanation for this could be that Casual Riders may not be using electric bikes for as long as they would like due to the associated costs and fees.
- By transitioning to an Annual Membership, Casual Riders could save approximately 60% of what they currently spend on their favorite bikes. This financial benefit serves as one of the compelling reasons for them to switch to an annual membership.

- Since Casual Riders do not seems to need Cyclistic bikes as primary transportation for daily 9 to 5 commute, Casual Riders gravitate toward Cyclistic mainly for non-primary transportation needs and leisure activities. In order for Casual Riders to feel inclined to buy annual memberships, the perks would have align with Casual Riders preferences such as Electric Bikes, Summertime Rides, Noon to Evening rides and Weekend rides.

Phase 6: Act

- Summer and Winter promotions - Run marketing campaigns April and May for Summer promotion. And in August and September for Winter promotion.
- Pre-Purchase Upsell Prompt - Offer E-Bike savings with the annual membership discount. Show before and after price comparison of a E-Bike ride.
- Casual Riders Survey - Use Survey Monkey, offer a free day pass to Casual Riders for survey response.
- User ID - Tracking casual individual activities by tracking casual riders information for marketing engagement.

- Implement Seasonal Memberships - Fractionalize the price of an annual membership. 4 seasonal subscribers is equal to a full membership plus 5% premium.
- Include a membership plan of weekends only for casual users.

Thanks for Reading