CYCLISTIC BIKE SHARE

How a bike-share navigate speedy success

Scenario

I am a junior data analyst working on 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, my team and I wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, we will design a new marketing strategy to convert casual riders into annual members and backed it up with compelling data insights and professional data visualizations.

About the company

In 2016, a company called Cyclistic launched a successful bike-share offering app. Since then, the program has grown to a fleet of 5,824 bicycles that are geotracked and locked into a network of 692 stations across Chicago. The bikes can be unlocked from one station and returned to any other station in the system anytime. The company's marketing strategy relied on building general awareness and appealing to broad consumer segments. One approach that helped make these things possible was the flexibility of its pricing plans: single-ride passes, full-day passes, and annual memberships. Customers who purchase single-ride or full-day passes are referred to as casual riders. Customers who purchase annual memberships are Cyclistic members.

Business Task

Design marketing strategies aimed at converting casual riders into annual members. Also, we needs to understand how annual members and casual riders differ, and why casual riders would buy a membership. Lastly, how digital media could affect their marketing tactics.

Ask

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?

Prepare

The Cyclistic's historical trip data to analyze and identify trends. The data was collected by amazonaws.com between (January 2023 — December 2023) The said dataset can be found here https://divvy-tripdata.s3.amazonaws.com/index.html (Note: The datasets have a different name because Cyclistic is a fictional company. For the purposes of this case study, the datasets are appropriate and will enable you to answer the business questions.

The data has been made available by Motivate International Inc. under this license https://divvybikes.com/data-license-agreement .

This is public data that you can use to explore how different customer types are using Cyclistic bikes. But note that data-privacy issues prohibit you from using riders' personally identifiable information. This means that you won't be able to connect pass purchases to credit card numbers to determine if casual riders live in the Cyclistic service area or if they have purchased multiple single passes.

Process

For this case study, i will be using Spreadsheet & Tableau. Reason for using spreadsheet is i need to clean and sort the data before analysing it. I also need to check for any duplicate and null values in the dataset before working with it. Finally i will use Tableau to visualize my data and create a dashboard to tell a story for my stakeholders.

The Cleaning Process

I create a column called ride_length. Calculate the length of each ride by subtracting the column started_at from the column ended which is (=D2-C2) and format as HH:MM:SS using Format > Cells > Time .

 I also create a column called day_of_week, and calculate the day of the week that each ride started. I used the WEEKDAY command (which is =WEEKDAY(C2,1))

Format as a number with no decimals, noting that 1 = Sunday and 7 = Saturday

I did the same thing for the rest of the dataset

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O:O ▾ | fx day_of_week

	J	K	L	M	N	O
1	start_lng	end_lat	end_lng	member_casual	ride_length	day_of_week
2	665	-87.6884	41.9671	-87.6674	member	00:07:31	3
3	616	-87.666	41.9542	-87.6644	member	00:03:43	5
4	401	-87.6455	41.9402	-87.653	member	00:02:51	5
5	846	-87.6319	41.8918	-87.6206	member	00:08:49	2
6	856	-87.6418	41.8899	-87.6343	member	00:05:32	5
7	899	-87.6343	41.8846	-87.6446	member	00:04:49	6
8	846	-87.6446	41.8899	-87.6343	member	00:04:49	6

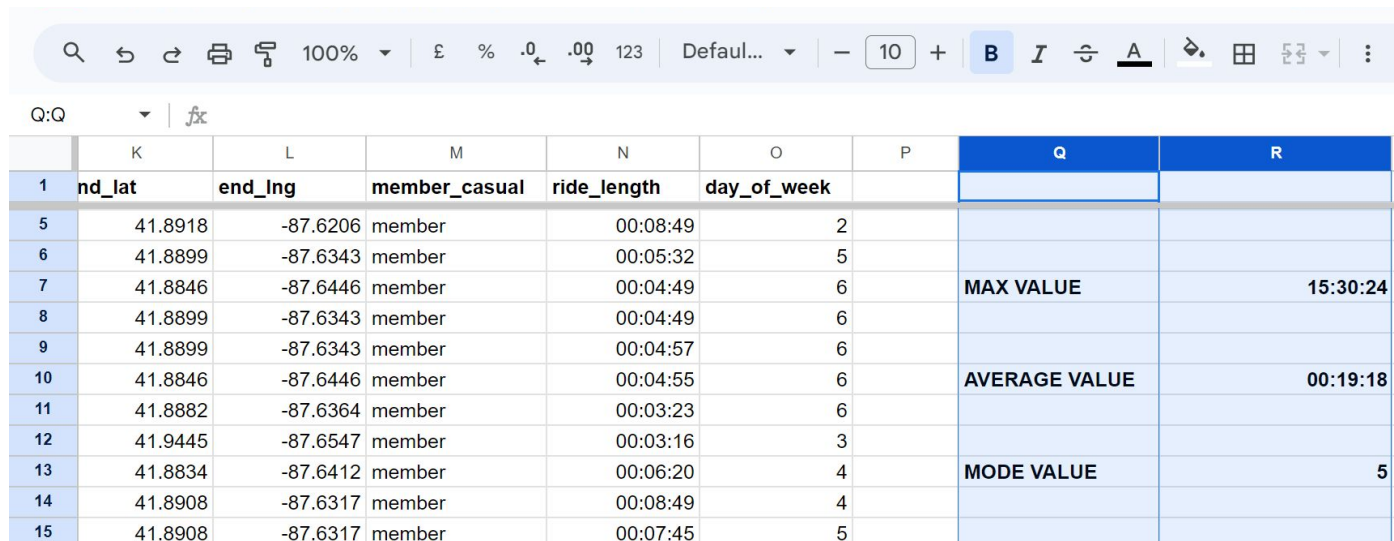+ ≡ **202001-divvy-tripdata** ▾   Count of trips ▾   AVG ride length   ‹ ›

Run a few calculations in one file to get a better sense of the data layout.

Calculate the mean of ride_length, max ride_length and mode of day_of_week

	K	L	M	N	O	P	Q	R
1	nd_lat	end_lng	member_casual	ride_length	day_of_week			
5	41.8918	-87.6206	member	00:08:49	2			
6	41.8899	-87.6343	member	00:05:32	5			
7	41.8846	-87.6446	member	00:04:49	6		MAX VALUE	15:30:24
8	41.8899	-87.6343	member	00:04:49	6			
9	41.8899	-87.6343	member	00:04:57	6			
10	41.8846	-87.6446	member	00:04:55	6		AVERAGE VALUE	00:19:18
11	41.8882	-87.6364	member	00:03:23	6			
12	41.9445	-87.6547	member	00:03:16	3			
13	41.8834	-87.6412	member	00:06:20	4		MODE VALUE	5
14	41.8908	-87.6317	member	00:08:49	4			
15	41.8908	-87.6317	member	00:07:45	5			

For quick analysis I created a pivot table to quickly help me calculate and visualize the data.

● Calculated for the average ride_length for members and casual riders.

   Rows = member_casual, Values = Average of ride_length.

● Calculated for the average ride_length for users by day_of_week.

   Columns = Rows = member_casual, Values = Average of ride_length.

● Calculated for the number of rides for users by day_of_week by adding Count

   of trip_id to Values.

View 1 — Pivot table

member_casual	AVERAGE of ride_length
casual	02:41:39
member	00:11:09
Grand Total	00:19:18

View 2 — AVERAGE of ride_length by day_of_week

AVERAGE of ride_length	day_of_week							
member_casual	1	2	3	4	5	6	7	Grand Total
casual	03:33:48	03:08:19	01:08:06	02:37:56	03:49:11	01:43:58	02:49:27	02:41:39
member	00:10:48	00:11:20	00:10:57	00:11:01	00:10:51	00:12:07	00:10:01	00:11:09
Grand Total	00:33:28	00:18:07	00:13:17	00:18:10	00:22:43	00:17:09	00:26:34	00:19:18

View 3 — COUNT of ride_id by day_of_week

	day_of_week							
	1	2	3	4	5	6	7	Grand Total
COUNT of ride_id	4	5	7	7	4	2	3	32

Analyze & Share

To analyse the data i had to observe the riders behaviour and rides
performance to enable stakeholders make better decisions, so i created a

dashboard overview to support my findings.

CYCLISTIC BIKE-SHARE, CHICAGO
HOW MEMBERS & CASUAL RIDERS USE CYCLISTIC DIFFERENTLY.
JAN 2020 - DEC 2020

Viz by Michael Kudakpo

RIDE HISTORY: MONTH

There was a significant rise in the count of bike share by consumers in the month between June - September. We could tell there is a peak in bike share by riders in spring and summer.

That means there is a huge decrease in ride share in winter season which start from December all through to April, with the lowest count of bike share.

Total of 3,419,321 rides was recorded with Member subscribers having the largest number of rides and Casual riders with the smallest number of rides. Member riders count up to 2,109,304 (61.69%) and casual riders count up to 1,310,017 (38.31%).
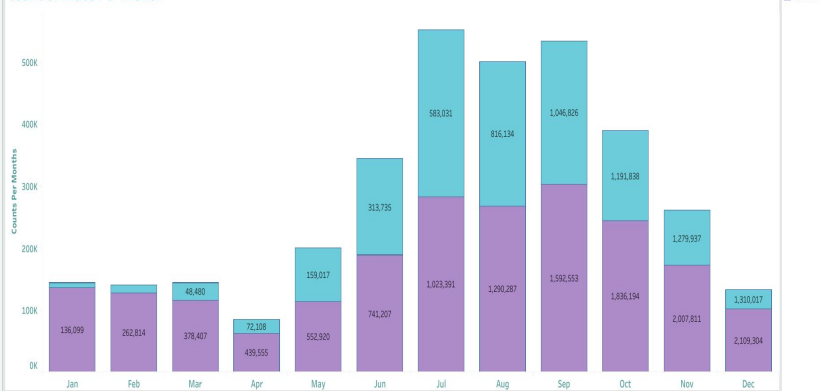
Docked bike had the most count of 2,856,447 occupying 83.54% followed by Electric bike and Classic bike 492,258 (14.40%) and 70,616 (2.07%) respectively.

RIDE HISTORY: MINUTE
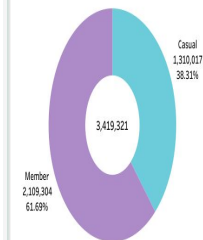
Count of Rides Per Month

CYCLISTIC BIKE-SHARE, CHICAGO
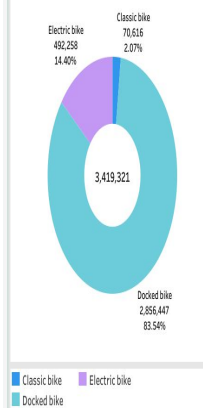## HOW MEMBERS & CASUAL RIDERS USE CYCLISTIC DIFFERENTLY.
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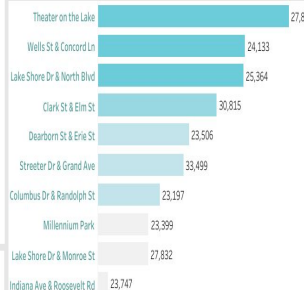Viz by Michael Kudakpo
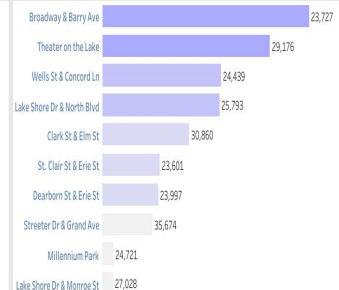
SUBSCRIPTION TYPE

RIDE HISTORY: WEEKDAYS

RIDEABLE BIKE TYPE

DOCK STATIONS

The top 10 start station

Station	Count
Theater on the Lake	27,816
Wells St & Concord Ln	24,133
Lake Shore Dr & North Blvd	25,364
Clark St & Elm St	30,815
Dearborn St & Erie St	23,506
Streeter Dr & Grand Ave	33,499
Columbus Dr & Randolph St	23,197
Millennium Park	23,399
Lake Shore Dr & Monroe St	27,832
Indiana Ave & Roosevelt Rd	23,747

The top 10 end station

Station	Count
Broadway & Barry Ave	23,727
Theater on the Lake	29,176
Wells St & Concord Ln	24,439
Lake Shore Dr & North Blvd	25,793
Clark St & Elm St	30,860
St. Clair St & Erie St	23,601
Dearborn St & Erie St	23,997
Streeter Dr & Grand Ave	35,674
Millennium Park	24,721
Lake Shore Dr & Monroe St	27,028

RIDE HISTORY

Total of 3,419,321 rides was recorded with Member subscribers having the largest number of rides and Casual riders with the smallest number of rides. Member riders count up to 2,109,304 with the percentage of 61.69% and casual riders count up to 1,310,017 with the percentage of 38.31%.

Docked bike had the most of count of 2,856,447 occupying 83.54% followed by Electric bike and Classic bike 492,258 (14.40%) and 70,616 (2.07%) respectively.

The Dock station with the highest start station and the highest end station name is Streeter Dr & Grand Ave. With ride count of 33.5k and 35.7k respectively.

RIDE HISTORY: MONTH

We see a significant rise in the count of bike share by consumers in the month between June - September. We could tell there is a peak in bike share by riders in spring and summer.

That means there is a huge decrease in ride share in winter season which start from December all through to April, with the lowest count of bike share.

During the peak season of the rideshare there is a balance between both member and casual riders. Bothe turn to have the same percentage in rides during the month of (July - September) and have a decrease between (April and December).

RIDE HISTORY: WEEKDAYS

Member riders turn to have the most rides in weekdays having Wednesday, Thursday and Friday as the highest days while on weekends it a balance for both member and casual having Saturday as the highest peak. In terms of minutes rides, member subscribers has the most minute rides compared to casual riders.

Act

Here are some major insight obtain from the data and visualization collected, in the month June - September is where most rides occurs so packages and incentives should to allocated to riders during those month.

Member riders are more than casual riders, however casual riders tend to ride more during weekends, so in order to convert them to members discounts should be given to them to motivate them to sign up for a membership.

Riders prefer the use of docked bikes compared to the rest of the bikes, therefore production of docked bikes should be more to services the riders

Conclusion

The marketing team should campaign through these two station with the highest counts of rides by placing billboard, advertising screens and posters at these stations.

Also by converting casual riders to member, bonus and incentives should be given to them to motivate them to register to member.

Campaigns and advertising should be all year round but strong traffic ads should be done during summer where more riders rides during those period.

Some additional data like gender, age, location, and contact details can help can expand the scope of the company.