

# ANALYSING BIKE RENTING DATA

BY

Adarshram Nair



This analysis is performed as  
a part of

**Google Data Analytics  
Professional Certificate -  
Capstone Project**



# THE TASK

**A bike renting company, Cyclistic has two types of riders - Casual users and Annual Members**

The task is to find out:

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?

# THE DATA

12 months data (Dec 2020 to Nov 2021) is collected from [here](#) under this [license](#).

# THE TOOLS

1. PostgreSQL & PgAdmin4
2. Tableau
3. Presentation

# THE PROCESS

## 1. Importing Data To PostgreSQL:

New tables were created and .csv files were imported using the SQL code for each file.

Code for one of the files is shown below:

```
CREATE TABLE bike_rental_data."2020_12"  
    ride_id text,  
    rideable_type text,  
    started_at timestamp,  
    ended_at timestamp,  
    start_station_name text,  
    start_station_id text,  
    end_station_name text,  
    end_station_id text,  
    start_lat real,  
    start_lng real,  
    end_lat real,  
    end_lng real,  
    member_casual text  
);  
  
COPY bike_rental_data."2020_12"  
FROM 'E:\Data Analytics\Course 8\Capstone\202012-divvy-tripdata.csv' CSV HEADER;
```

# THE PROCESS

## 2. Cleaning Data

Rows where ride ending time was before ride starting time were deleted as it consisted of very less rows compared to the whole data (Total 581 rows deleted from 5,479,096 rows)

Code for one of the files is shown below:

This Process was repeated for every file

```
DELETE FROM bike_rental_data."2020_12"  
WHERE ended_at < started_at
```

# THE PROCESSES

## 3. Summarizing Data into One Table

A new table with Important columns and new columns (ride duration and day of week the journey started) was made and the data from each table was summarized to the new table.

Code for one of the files is shown below:

This Process was repeated for every file

```
CREATE TABLE IF NOT EXISTS bike_rental_data.basic_summary
(
    ride_id text, rideable_type text, user_type text,
    day_of_week integer, ride_duration interval
);

INSERT INTO bike_rental_data.basic_summary(
    ride_id, rideable_type, user_type,
    day_of_week, ride_duration
)
SELECT ride_id, rideable_type, member_casual AS user_type,
    extract(dow FROM "2020_12".started_at) AS day_of_week,
    (ended_at - started_at) AS ride_duration
FROM bike_rental_data."2020_12";
```

# THE PROCESS

## 4. Converting To .csv file

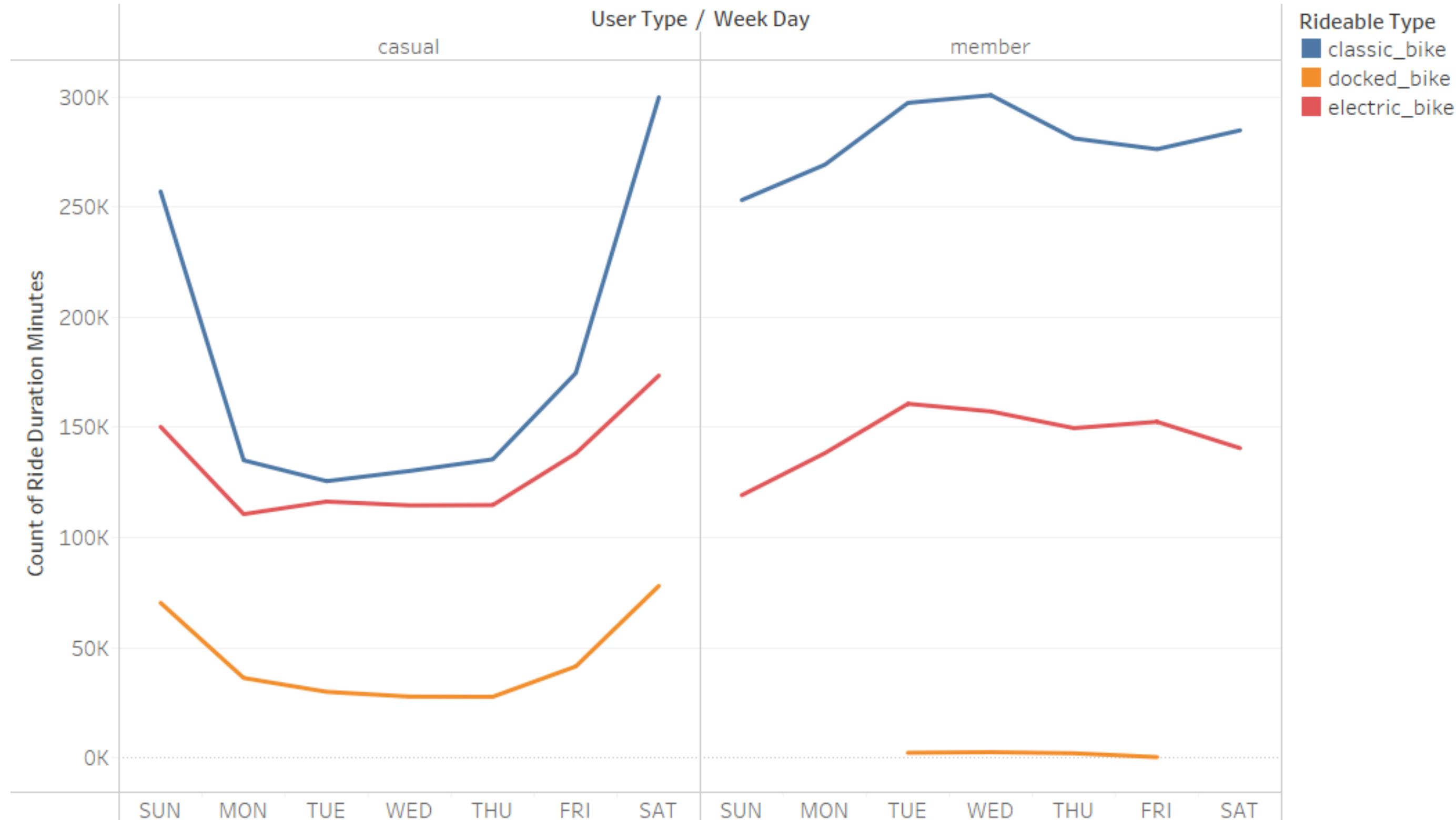
The summarized table was saved as .csv file for analysing the data using Tableau

Code for one of the files is shown below:

```
COPY bike_rental_data.basic_summary_new TO 'E:\Data  
Analytics\Course 8\bike_rental_basic summary.csv' CSV HEADER
```

# THE ANALYSIS

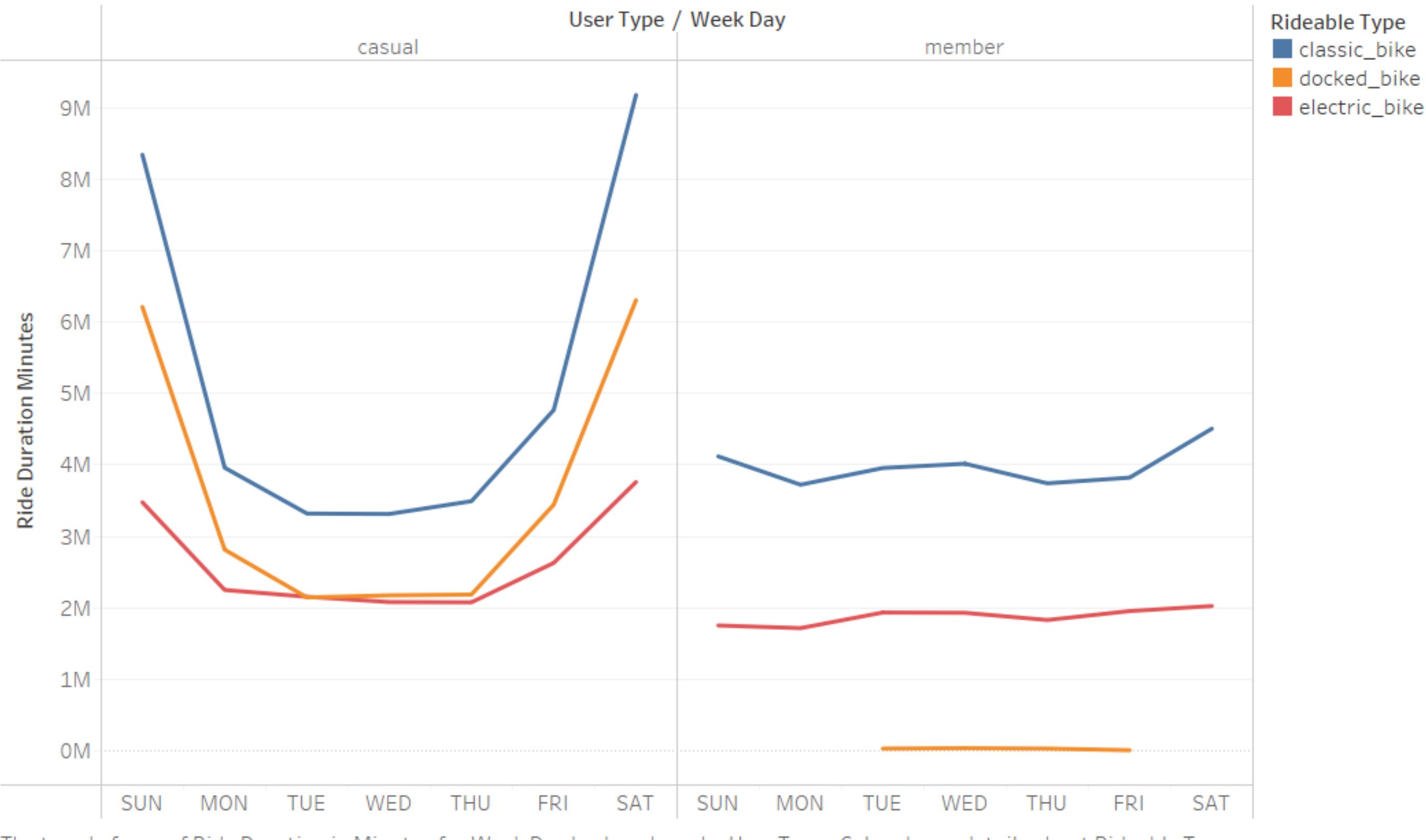
Number of Rides for each Bike type



The trend of number of rides  
for Week Day broken down by User Type. Color shows details about Rideable Type.

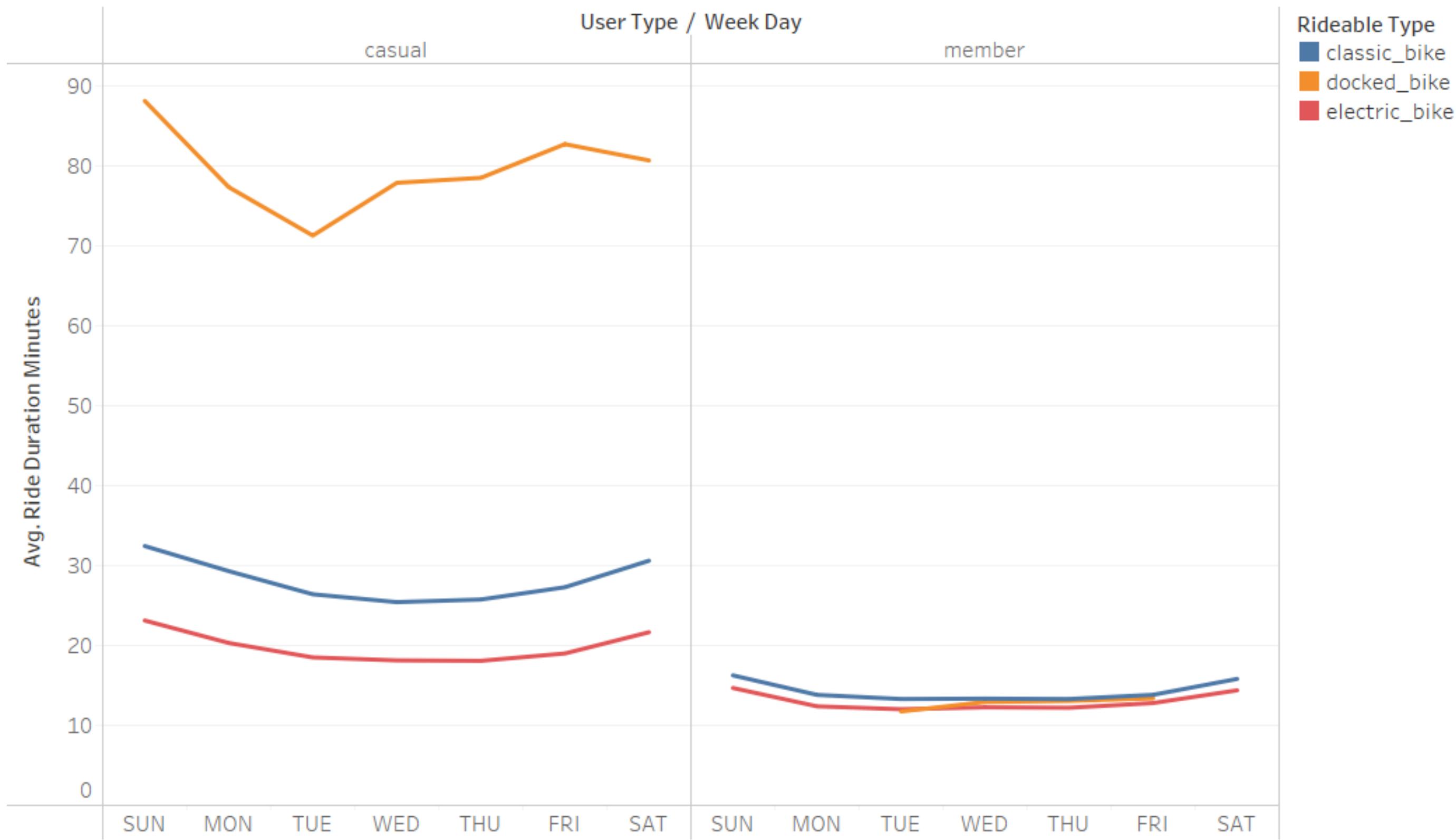
# THE ANALYSIS

Total duration for each Bike type



# THE ANALYSIS

Average Duration Of a Ride in different types of Bikes



The trend of average of Ride Duration in Minutes for Week Day broken down by User Type. Color shows details about Rideable Type.

## CONCLUSIONS

1. Most Casual user rides are during weekends while an annual Member rides are comparatively the same during weekdays and weekends.
2. Number of rides on Docked Bikes are very low comparing the other two in both cases. But in case of annual Members, it is close to zero.
3. Classic Bike is rode the most of the times by both type of users.
4. Average duration of ride is the largest for the docked bike then classic bike and electric bike respectively without much difference. For annual Members all the have a similar average time

# SUGGESTED ACTIONS

**The following could be added to  
Annual Membership so that to convert  
Casual users to Members**

- 1. Give offers on weekends.**
- 2. Give offers for Docked bikes specially for using it for longer periods.**
- 3. Give offers for riding for longer period of time on a single ride.**

Thank  
you

