The Bike-Sharing Program Officially Starting on August 29, 2013, Under the Name “Buy Area Bike Share.”

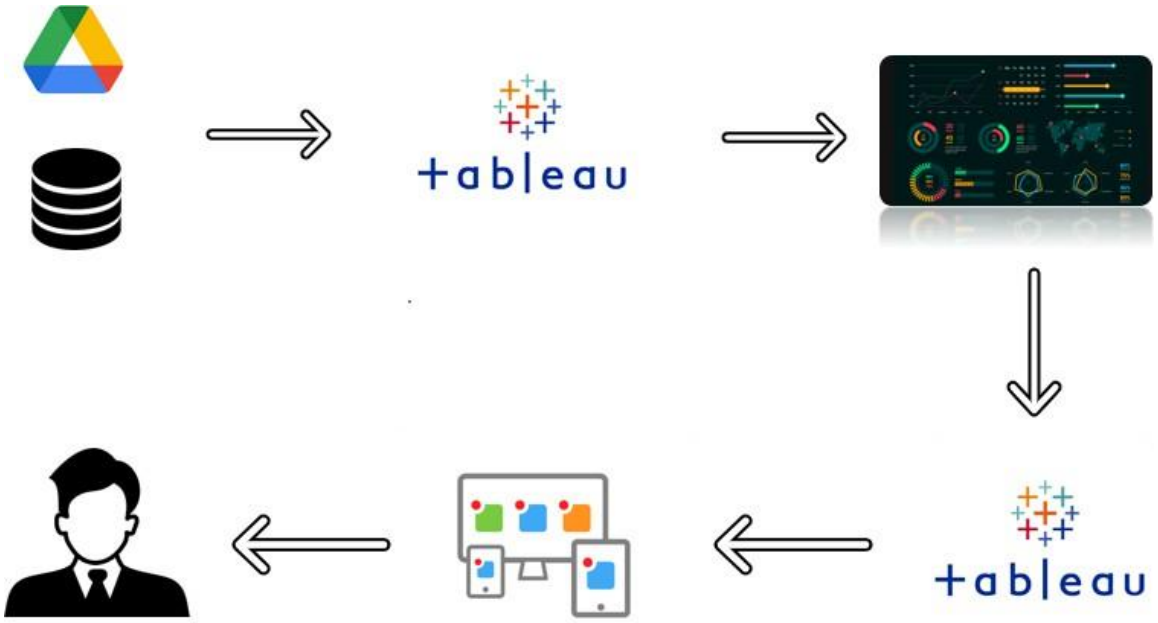
Ford GoBike was a bike-sharing program that operated in the San Francisco Bay Area from 2013 to 2020. It was a collaboration between Motivate, a bike-sharing company, and Ford Motor Company. The program aimed to provide an affordable and convenient transportation option for residents and visitors in the Bay Area.

Ford GoBike offered a fleet of bicycles stationed at various docking stations throughout San Francisco, East Bay, and San Jose. Users could rent bikes on a short-term basis by purchasing a membership or using a credit card at the docking station. The bikes were equipped with GPS tracking, allowing users to locate and reserve bikes through a mobile app or at the docking station itself.

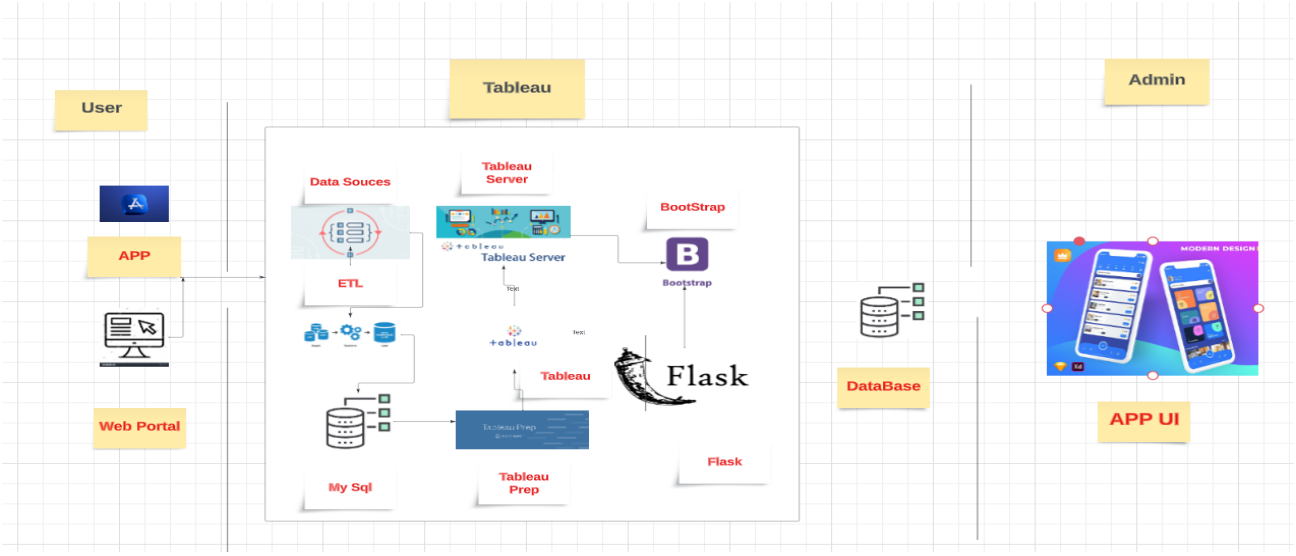
Members could enjoy unlimited rides for a fixed fee, while non-members had the option to pay per trip. The system also provided benefits such as bike maintenance, customer support, and regular rebalancing of bikes between docking stations.

In 2020, Ford GoBike underwent rebranding and became known as "Bay Wheels" after Lyft acquired Motivate. Under the new name, the bike-sharing program continued to operate, expanding its fleet and coverage area. Bay Wheels aimed to promote sustainable transportation, reduce traffic congestion, and provide an accessible mode of travel for commuters and residents in the Bay Area.

Technical Architecture: (General)



Technical Architecture : (Created by our team for the given problem statement)



Project Flow

To accomplish this, we have to complete all the activities listed below,

Define Problem / Problem Understanding

- Specify the business problem
- Business requirements
- Literature Survey
- Social or Business Impact.

- **Data Collection & Extraction from Database**
  - Collect the dataset,
  - Connect dataset with Tableau
- **Data Preparation**
  - Prepare the Data for Visualization
- **Data Visualizations**
  - No of Unique Visualizations
- **Dashboard**
  - Responsive and Design of Dashboard
- **Story**
  - No of Scenes of Story
- **Performance Testing**
  - Amount of Data Rendered to DB ‘
  - Utilization of Data Filters
  - No of Calculation Fields
  - No of Visualizations/ Graphs
- **Web Integration**
  - Dashboard and Story embed with UI With Flask
- **Project Demonstration & Documentation**
  - Record explanation Video for project end to end solution
  - Project Documentation-Step by step project development procedure

Milestone 1: Define Problem / Problem Understanding

Activity 1: Specify the business problem

Ford GoBike was a bike-sharing program that operated in the San Francisco Bay Area from 2013 to 2020. It was a collaboration between Motivate, a bike-sharing company, and Ford Motor Company. The program aimed to provide an affordable and convenient transportation option for residents and visitors in the Bay Area. Ford GoBike offered a fleet of bicycles stationed at various docking stations throughout San Francisco, East Bay, and San Jose. Users could rent bikes on a short-term basis by purchasing a membership or using a credit card at the docking station. The bikes were equipped with GPS tracking, allowing users to locate and reserve bikes through a mobile app or at the docking station itself.

Activity 2: Business requirements

As of my knowledge cutoff in September 2021, "Ford GoBike" was a bike-sharing program operated by Lyft (previously known as Bay Wheels), and it was available in the San Francisco Bay Area. However, please note that the information might have changed since then. To obtain the most accurate and up-to-date information regarding Ford GoBike or any other business requirements, I recommend visiting their official website or contacting them directly for the latest details.

Activity 3: Social or Business Impact.

Business Impact

Ford Go Bike, now known as Bay Wheels, had a significant business impact on the bike-sharing industry and the communities it served. Here are some of the notable business impacts of Ford Go Bike:

1. **Increased Mobility Options: Ford GoBike provided an additional mode of transportation for residents and visitors in the San Francisco Bay Area. It offered a convenient and eco-friendly alternative to traditional transportation methods like cars or public transit, enabling people to easily navigate urban environments.**

2. **Revenue Generation: Ford GoBike generated revenue through its membership plans, pay-per-trip fees, and sponsorships. This revenue helped cover operational costs, such as bike maintenance, docking station maintenance, and expansion efforts.**

3. **Branding and Partnership Opportunities: Ford's involvement in the bike-sharing program provided branding and marketing opportunities for the company. It allowed Ford to align its brand with sustainable transportation and innovation, showcasing its commitment to mobility solutions.**

4. **Economic Benefits for Local Businesses: The presence of Ford GoBike stations in neighborhoods created foot traffic and increased visibility for local businesses. Users of the bike-sharing service often patronized nearby establishments, benefiting local economies.**

5. **Data Insights: Ford GoBike collected data on ridership patterns, popular routes, and user preferences. This data provided valuable insights for urban planners, transportation authorities, and city governments to improve infrastructure planning, optimize transportation networks, and make data-driven policy decisions.**

6. **Environmental Sustainability: By promoting biking as a viable transportation**

option, Ford GoBike contributed to reducing traffic congestion and greenhouse gas emissions. This aligns with sustainability goals and initiatives aimed at creating greener cities.

7. **Integration with Mobility Ecosystem: Ford GoBike integrated with other mobility services such as public transit and ride-sharing platforms. This integration allowed users to seamlessly combine different modes of transportation for their journeys, providing a more comprehensive and interconnected mobility ecosystem.**

Milestone 2: Data Collection & Extraction from Database

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes and generate insights from the data.

Activity 1: Collect the dataset

Please use the link to download the dataset:

https://www.kaggle.com/code/amrdawoud/ford-gobike-system-data-analysis

Activity 1.1: Understand the data

Check the below link out to understand the dataset in detail:

https://drive.google.com/file/d/1PhQgKjsxLkCyz3eyJzjsnK5pfuBX2RDa/view?usp=drive_link

Activity 2: Connect Dataset to Tableau

Explanation video link:

https://drive.google.com/file/d/16I1m7nmq8LIh3unmafUW2WiB4tcnBqdV/view?usp=drive_link

Milestone 3: Data Preparation

Activity 1: Prepare the Data for Visualization

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

Activity 1.1 : Preparing a Data Module:

https://drive.google.com/file/d/1ZtlGOSA1a1CJaJFvUR4JMwL562Ua0mkr/view?usp=share_link

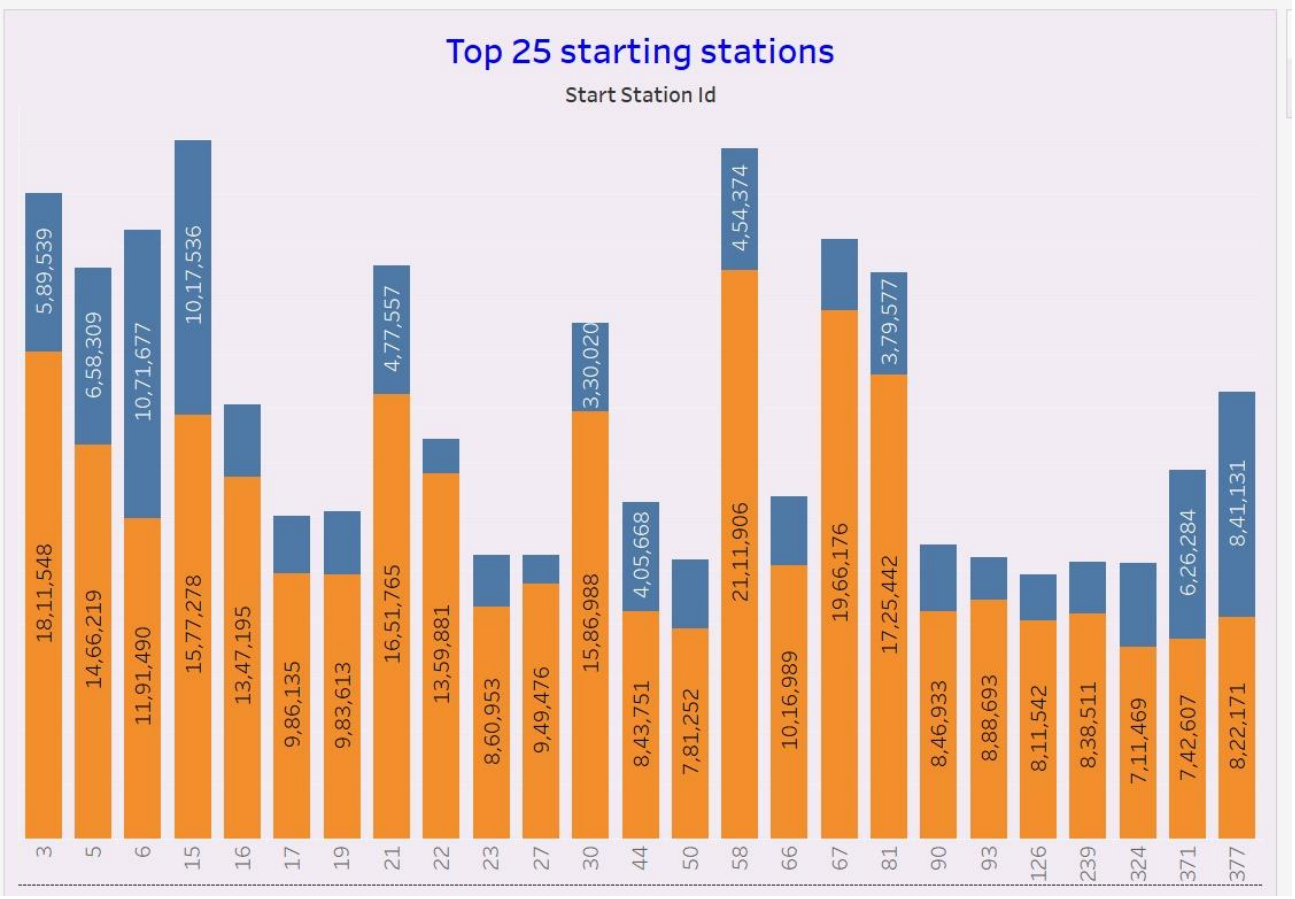
Milestone 4: Data Visualization

Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

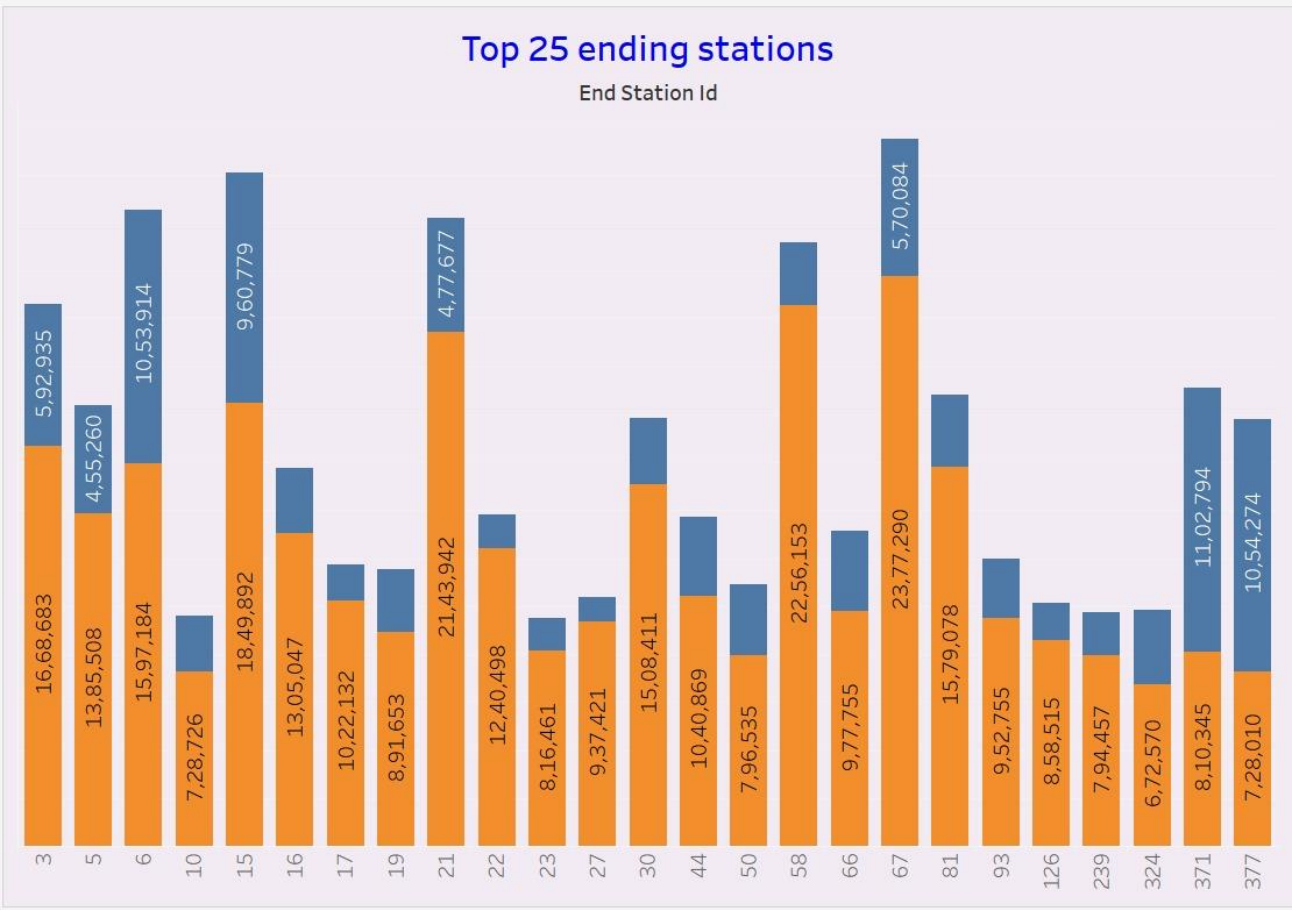
Activity 1: Number of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyse the Rice production include bar charts, line charts, heat maps, scatter plots, pie charts,Maps etc. These visualizations can be used to compare performance, track changes over time, show distribution, and relationships between variables.

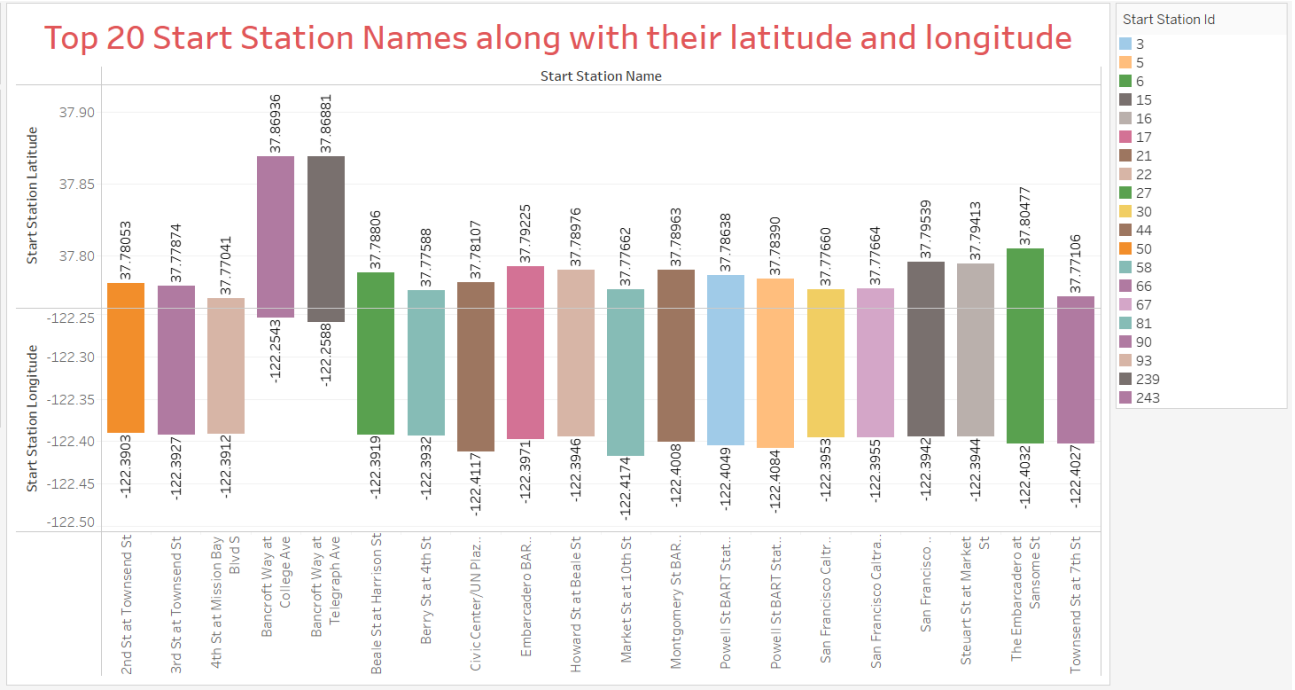
Activity 1.1: Top 25 Start Station Id along with the Duration spent:



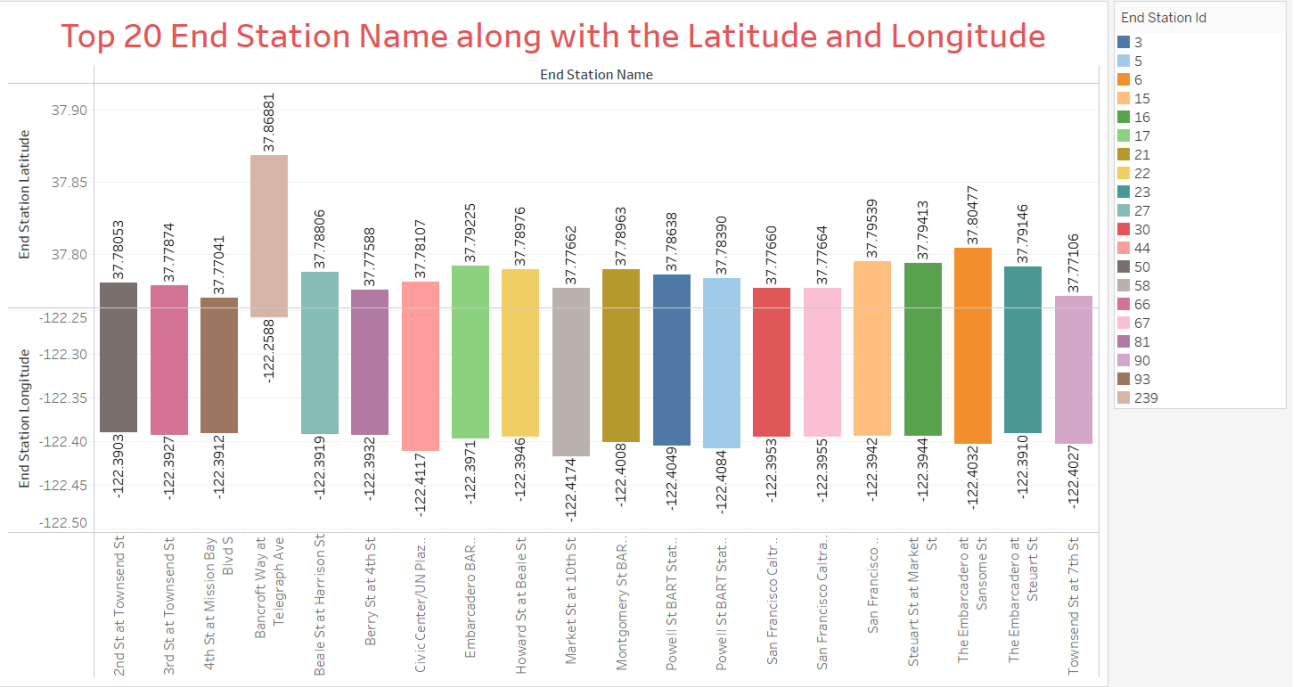
Activity 1.2: Top 25 End Station Id along with the Duration spent:



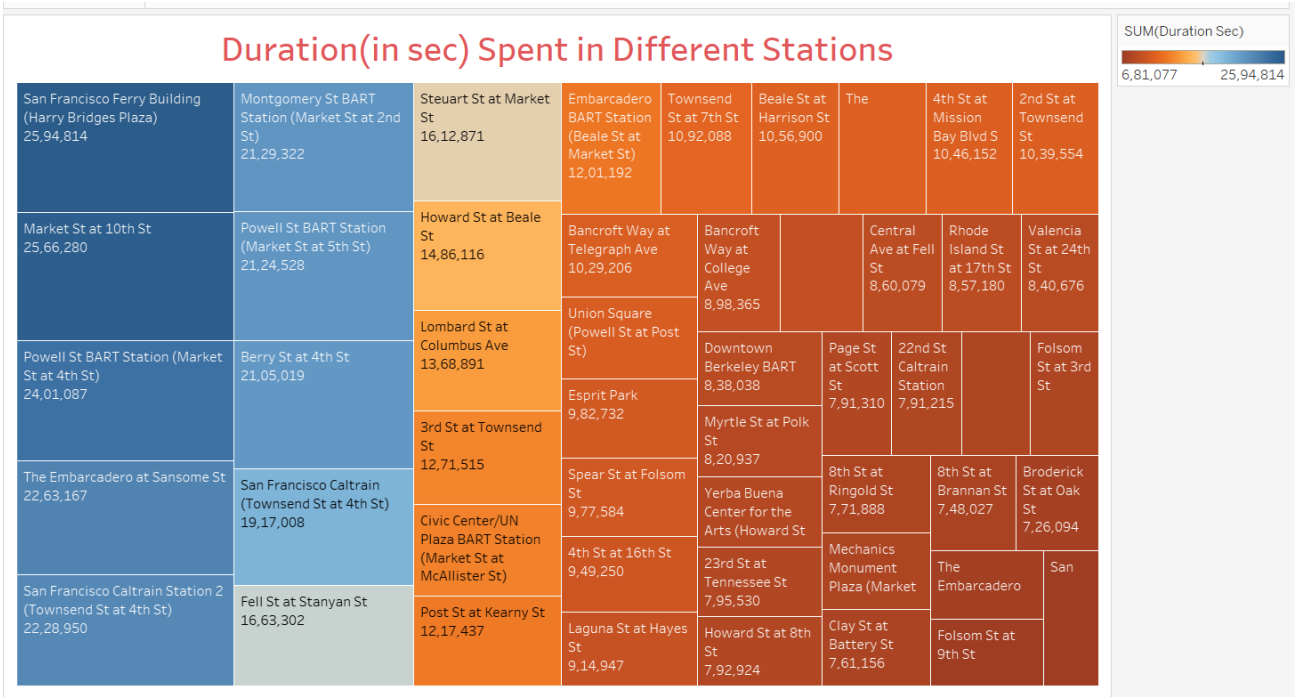
Activity 1.3: Top 20 Start Station Name along with their Latitute and Longitude:



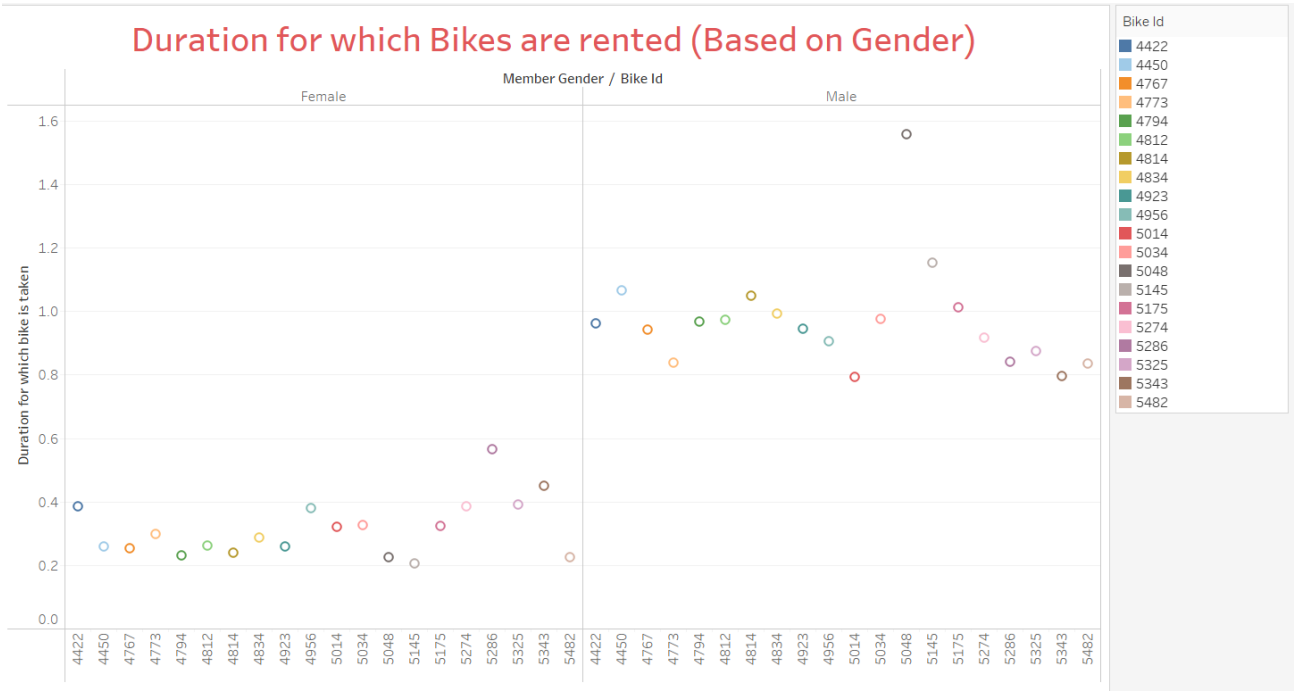
Activity 1.4: Top 20 End Station Name along with their Latitute and Longitude:



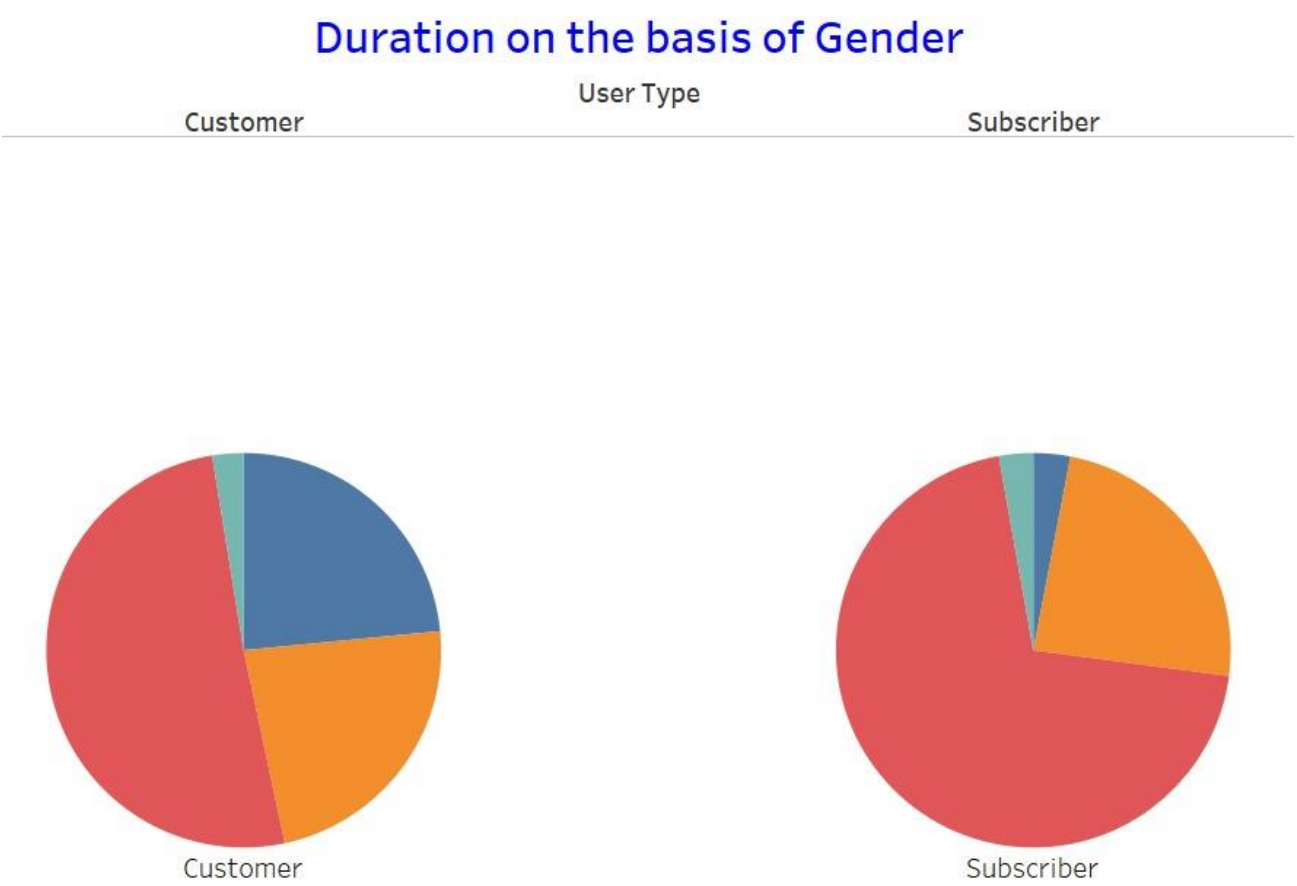
Activity 1.5:Duration Spent in Different Stations:



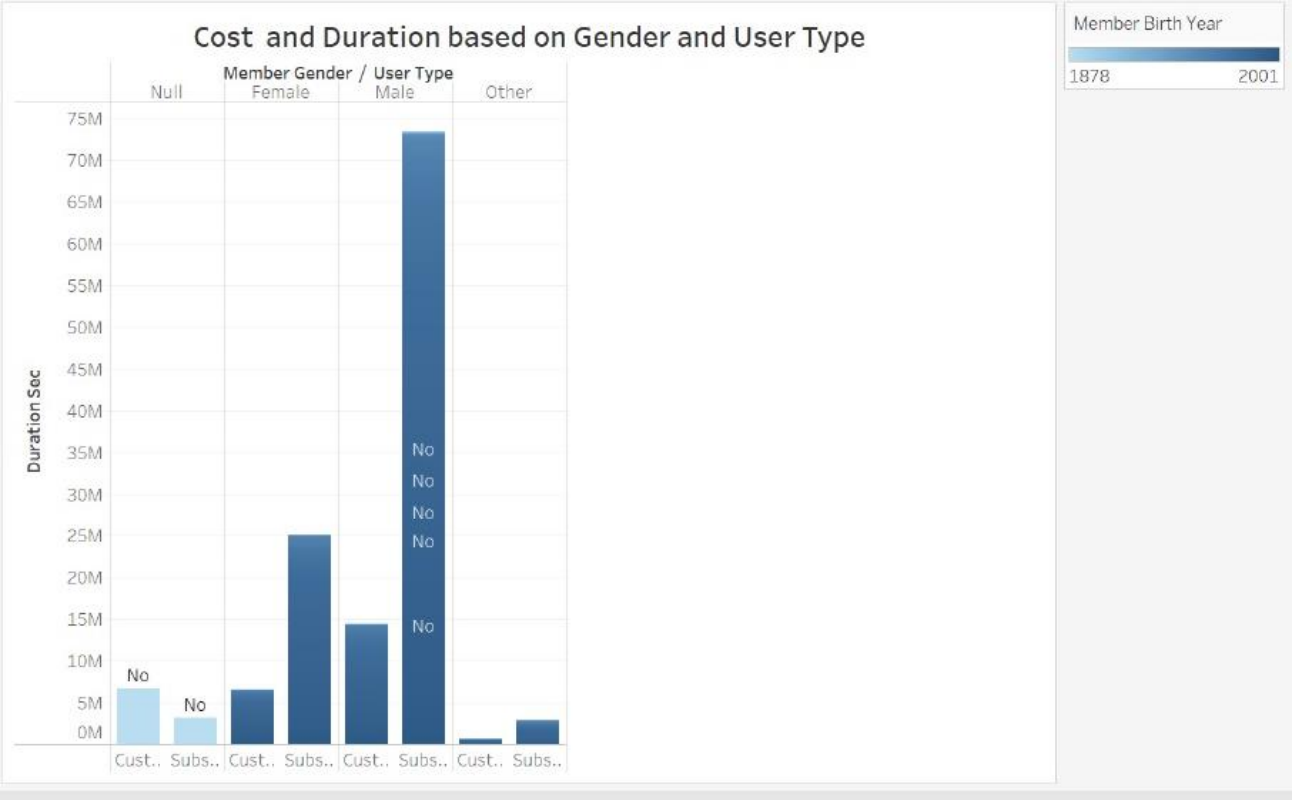
Activity 1.6: Duration For Which the Bikes are Rented By Different Users:



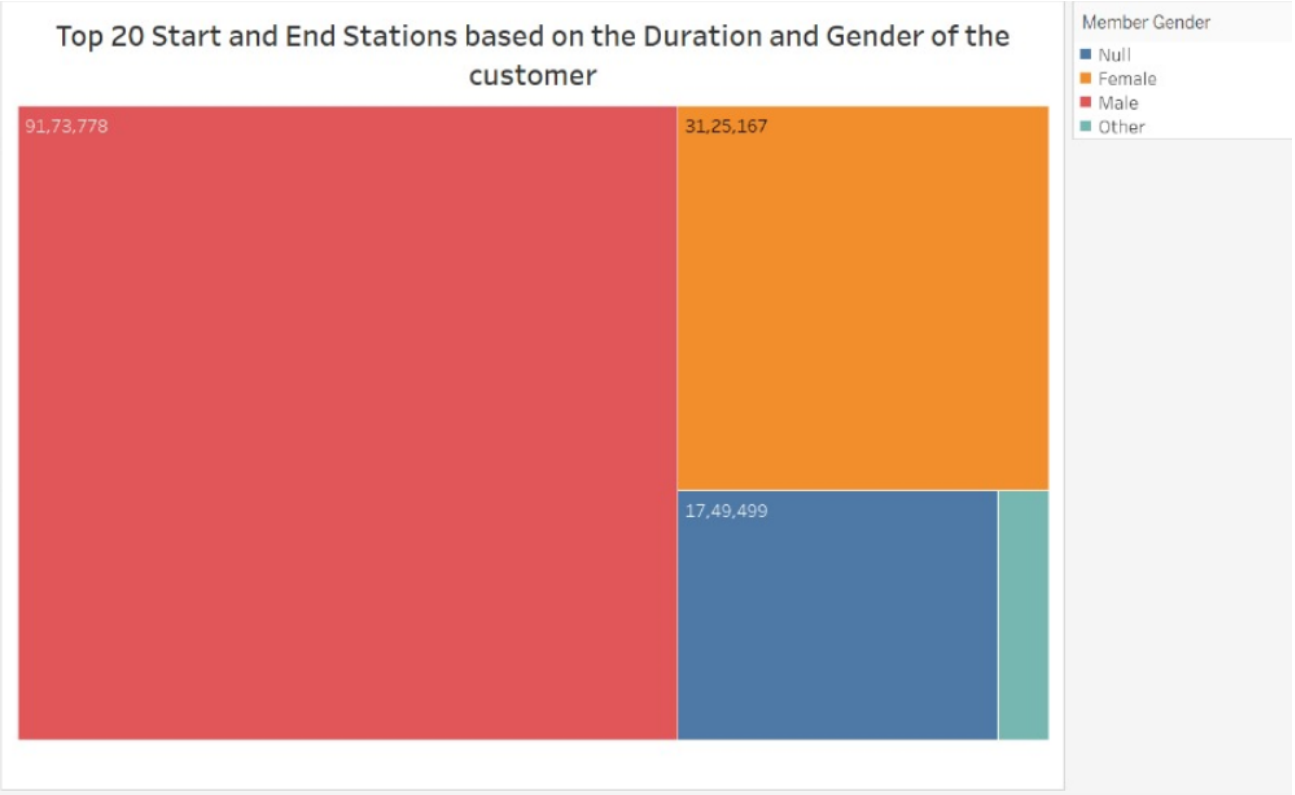
Activity 1.7:Duration Spent on the Basis of Gender:



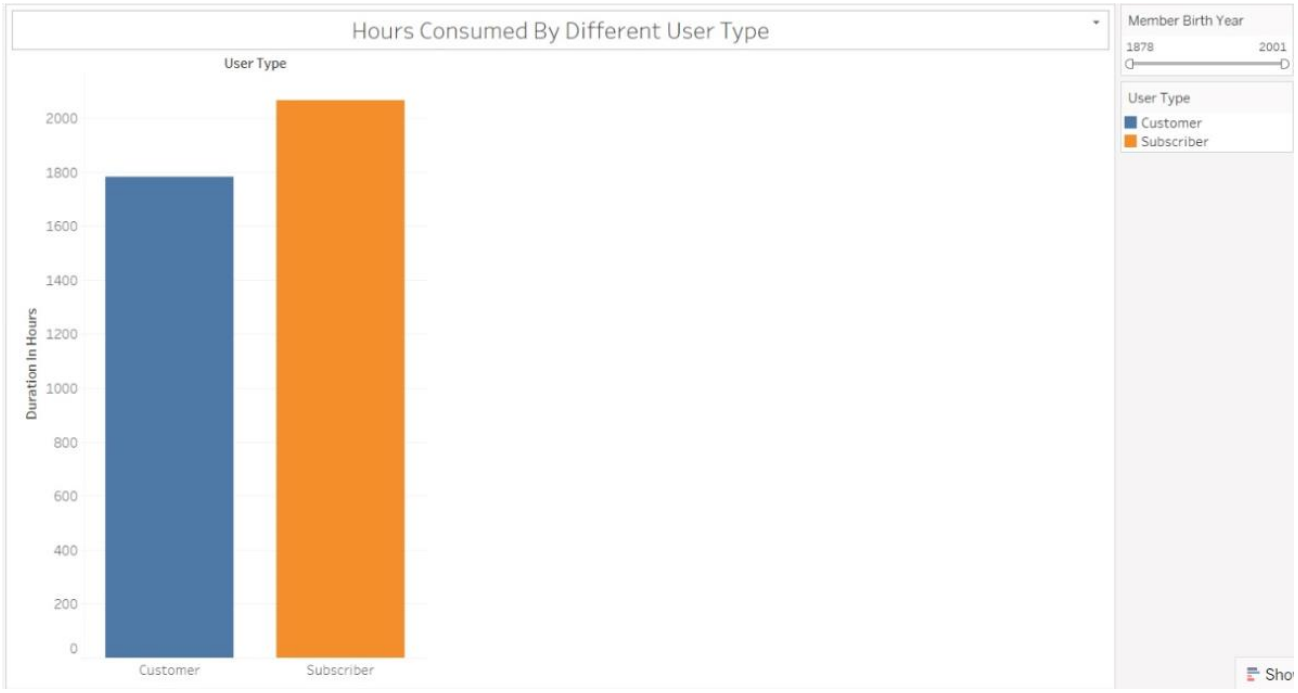
Activity 1.8: Cost and Duration Based on Gender and User Type:



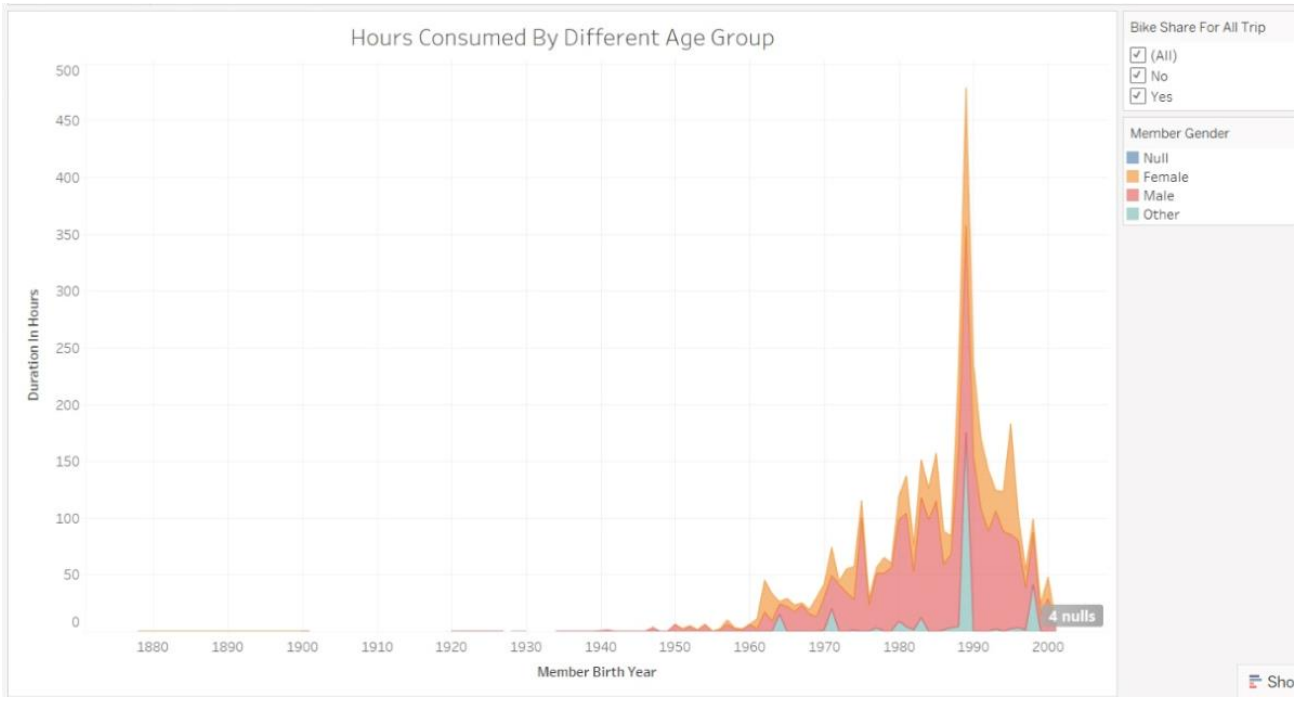
Activity 1.9:Duration Spent on the Start Station Based on the Gender:



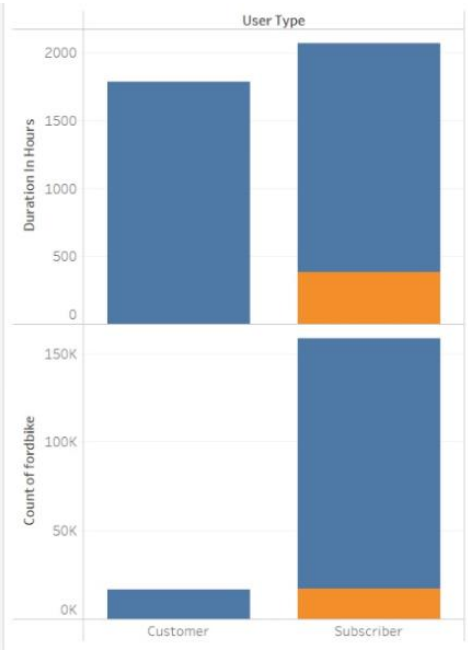
Activity 1.10: Time Spent based on the User Type:

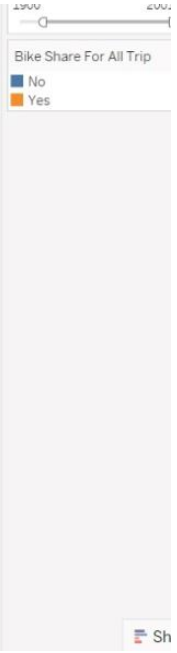


Activity 1.11: Hours Consumed by different Age Groups:



Activity 1.12: Whether the Bike is shared with others?



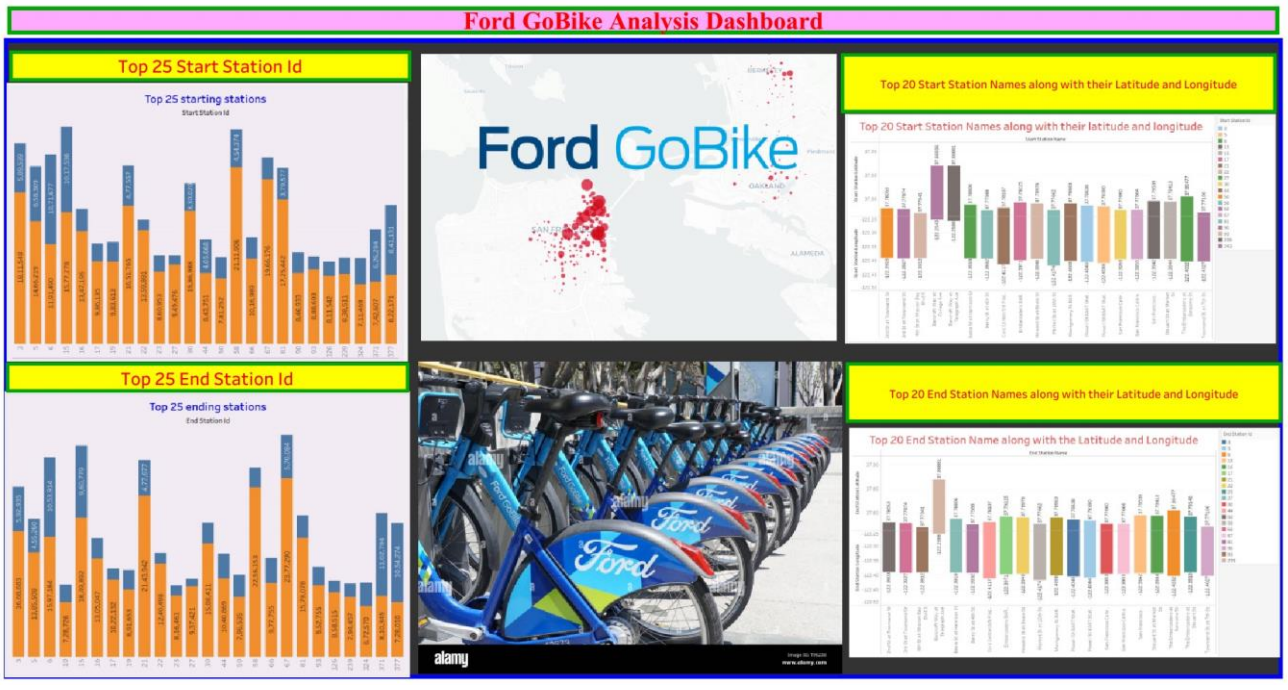


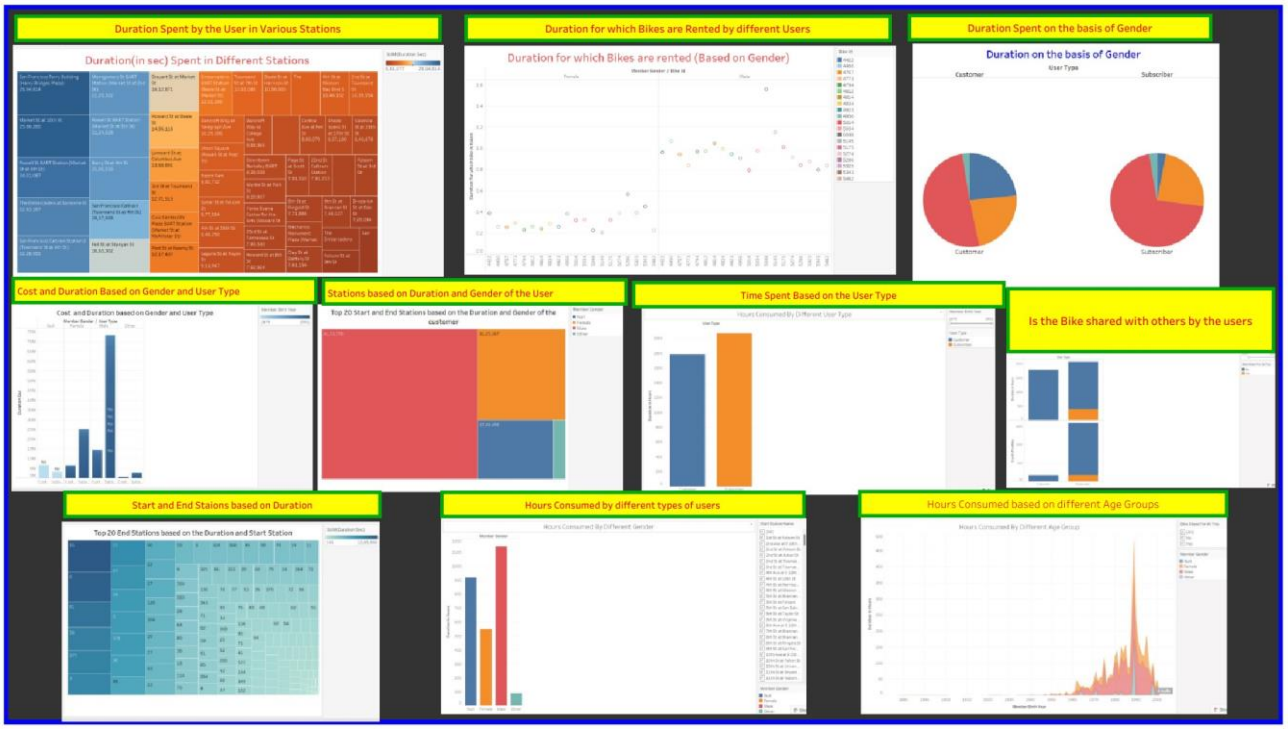
Milestone 5: Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Activity :1- Responsive and Design of Dashboard

The responsiveness and design of a dashboard for analysing the factors important for rice production across different countries from 1961 to 2021 analyzes various engagement metrics such as likes, high value productions,no.of tonnes from different countries. We can also help in distributing the production across different countries.




Duration Spent by the User in Various Stations
Duration(in sec) Spent in Different Stations
Duration for which Bikes are Rented by different Users
Duration for which Bikes are rented (Based on Gender)
Duration Spent on the basis of Gender
Duration on the basis of Gender
User Type
Customer
Subscriber
Cost and Duration Based on Gender and User Type
Cost and Duration based on Gender and User Type
Stations based on Duration and Gender of the User
Top 20 Start and End Stations based on the Duration and Gender of the customer
Time Spent Based on the User Type
Hours Consumed By Different User Type
Is the Bike shared with others by the users
Start and End Staions based on Duration
Top 20 End Stations based on the Duration and Start Station
Hours Consumed by different types of users
Hours Consumed By Different Gender
Hours Consumed based on different Age Groups
Hours Consumed By Different Age Group

Milestone 6: Story

The Ford GoBike, now known as Bay Wheels, is a bike-sharing program that provides a convenient and sustainable transportation option for residents and visitors in the San Francisco Bay Area. The program was launched in August 2013 as a pilot project called Bay Area Bike Share, and it quickly gained popularity among commuters and recreational riders.

The story of the Ford GoBike begins with the initial launch of Bay Area Bike Share, a collaboration between the Bay Area Air Quality Management District, the Metropolitan Transportation Commission, and the San Francisco Municipal Transportation Agency. The aim was to address transportation challenges, reduce traffic congestion, and promote healthier and more sustainable modes of transportation.

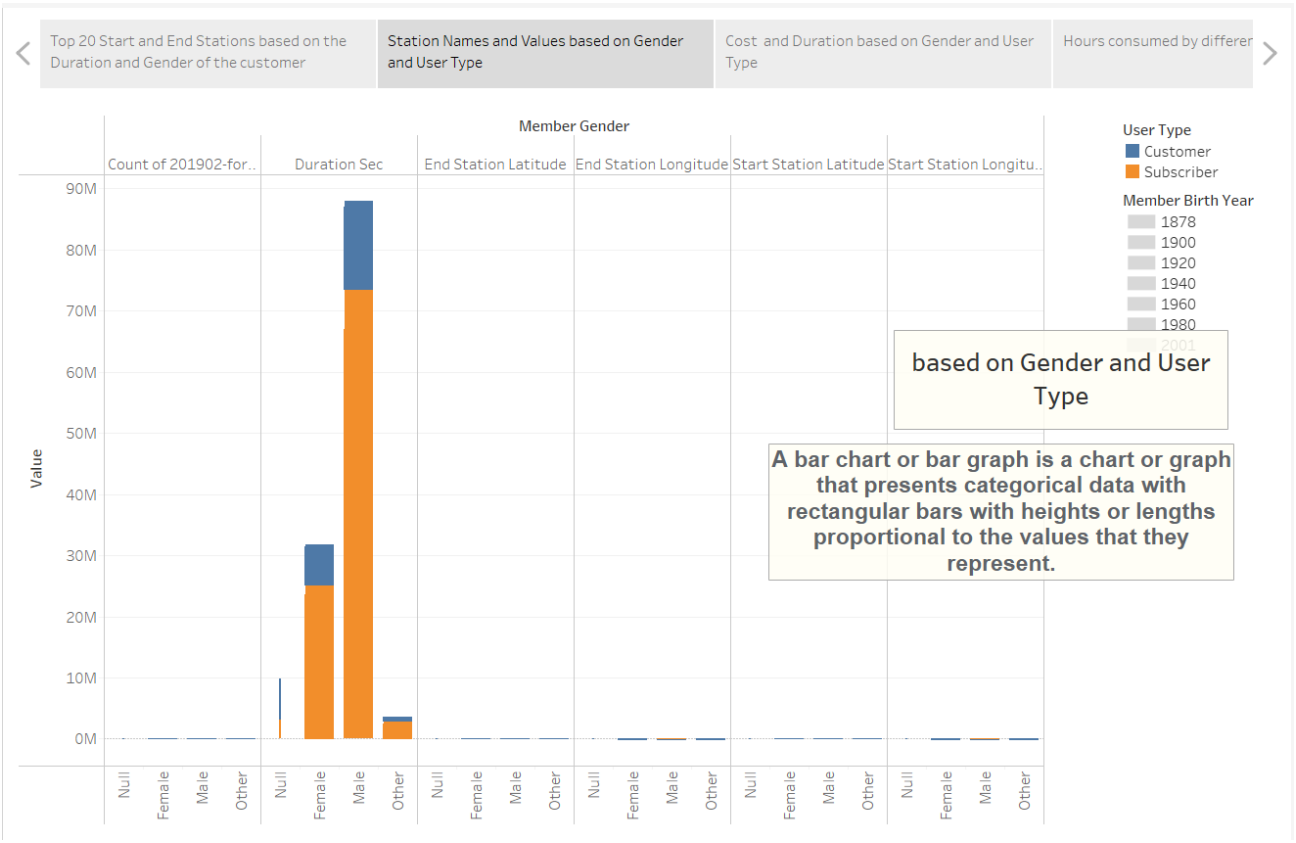
In 2017, Ford Motor Company became the title sponsor of the program, leading to its rebranding as Ford GoBike. Ford's sponsorship brought new resources and investment, allowing for an expansion of the bike-sharing network. The program introduced a fleet of distinctive blue bikes equipped with GPS and smart technology, making it easier for riders to locate, rent, and return bikes using a smartphone app.

Activity:1- Number of Scenes of Story

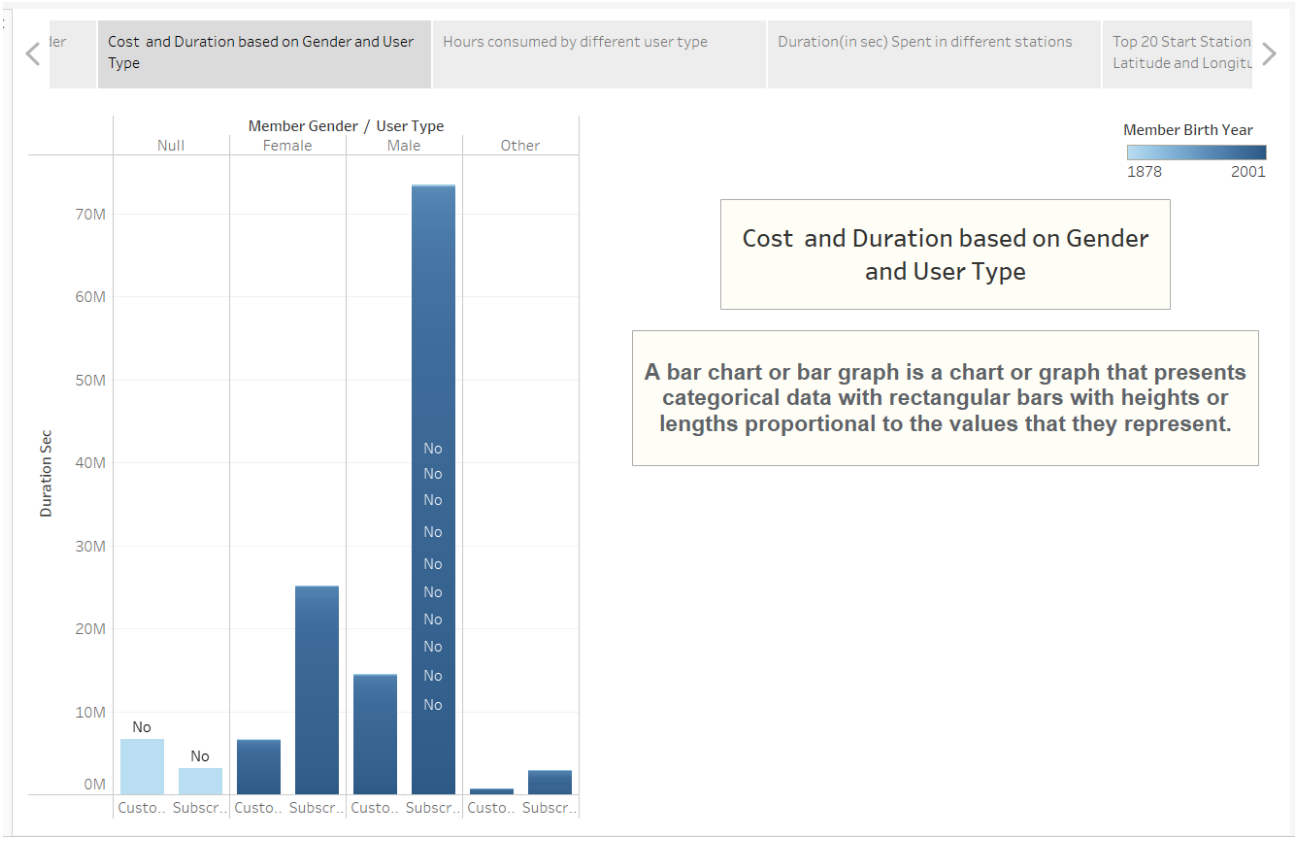
The number of scenes in a storyboard for a data visualization analysis of the factors affecting the insights of Ford go bike, will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.

1) Top 20 Start and End Stations based on the Duration and Gender of the customer

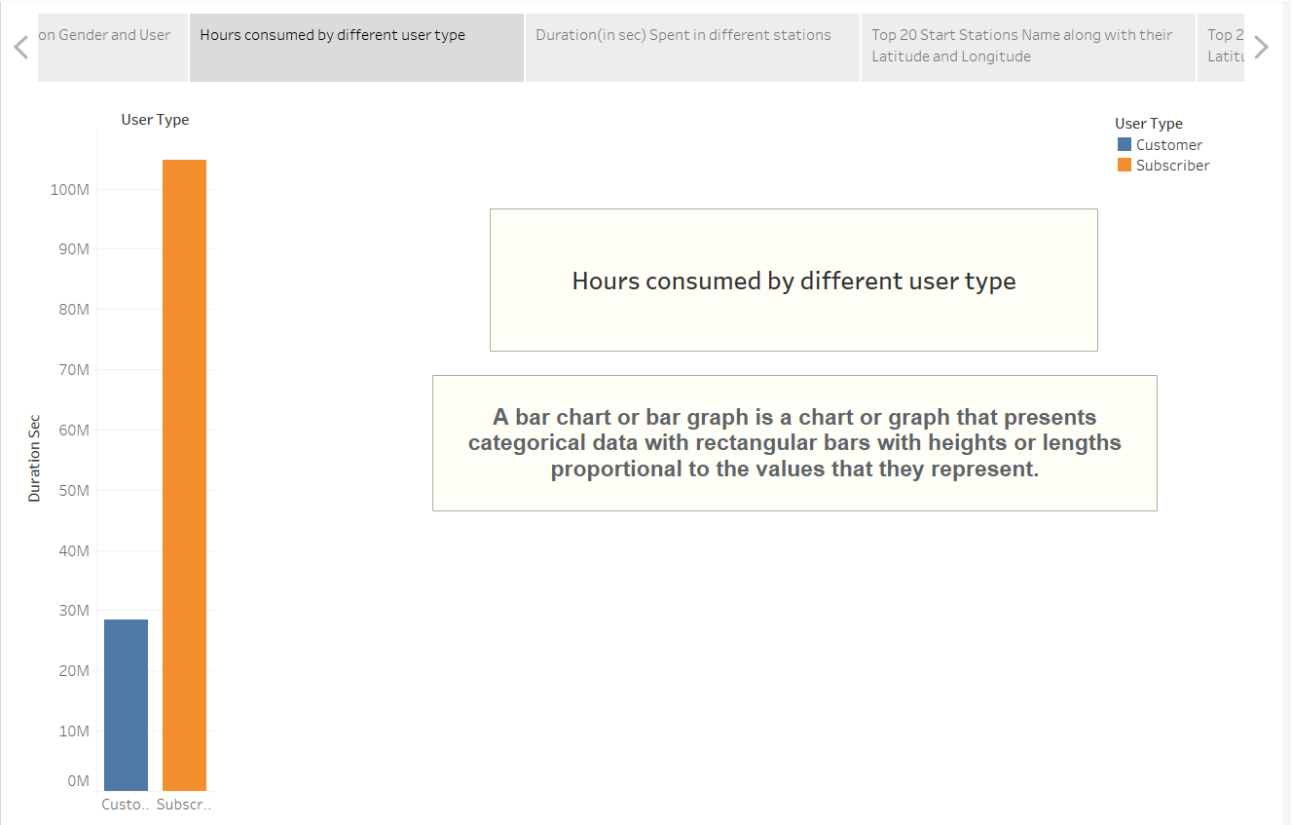
2) Station Names and Values based on Gender and User Type



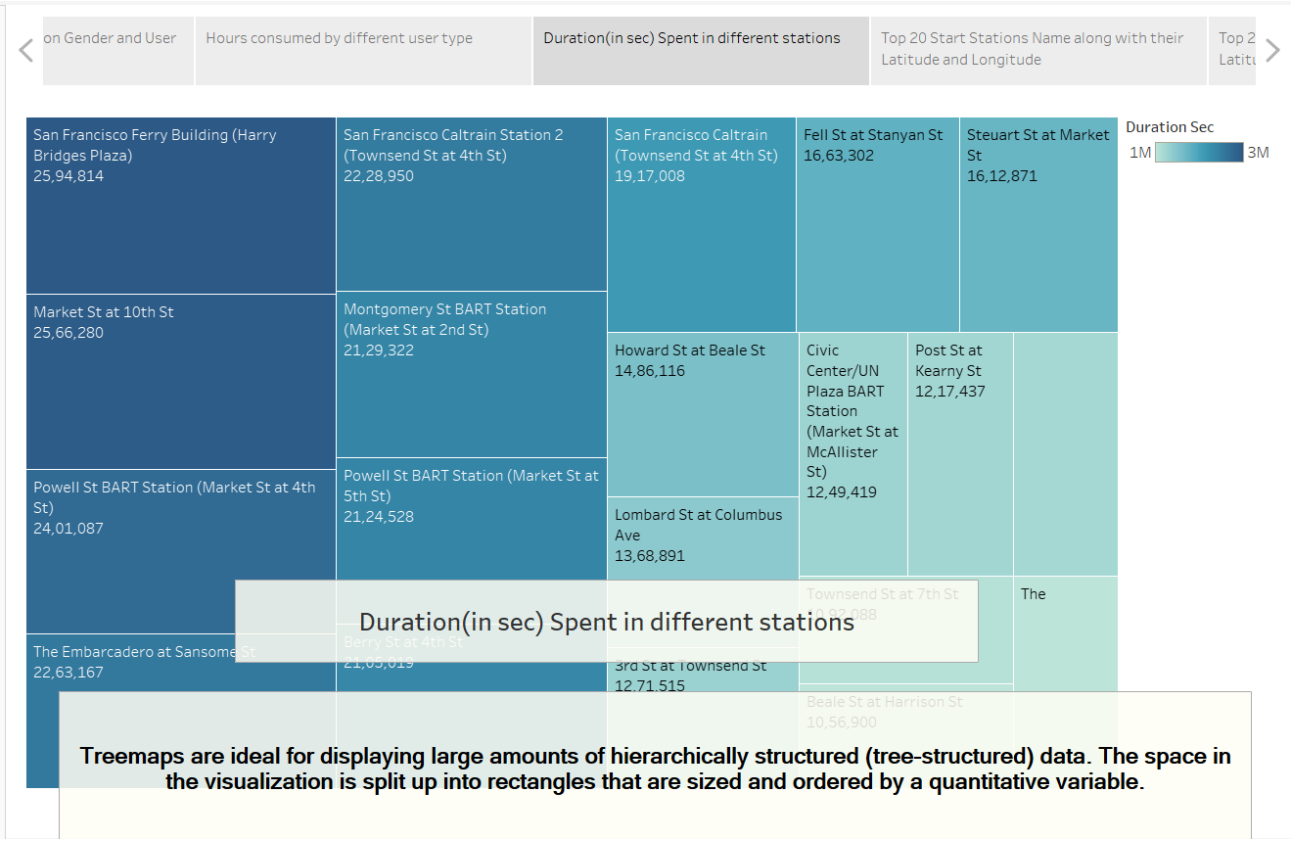
3) Cost and Duration based on Gender and User Type



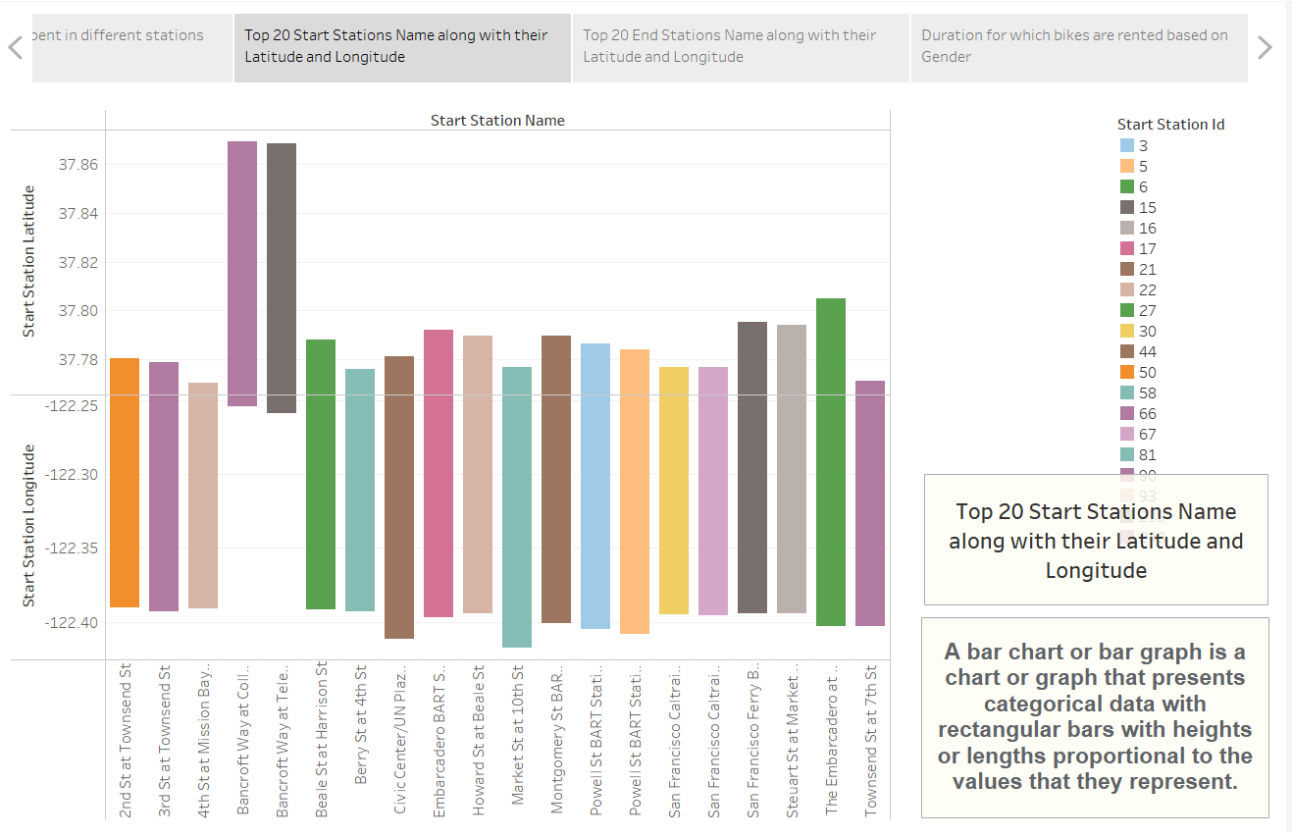
4) Hours consumed by different user type



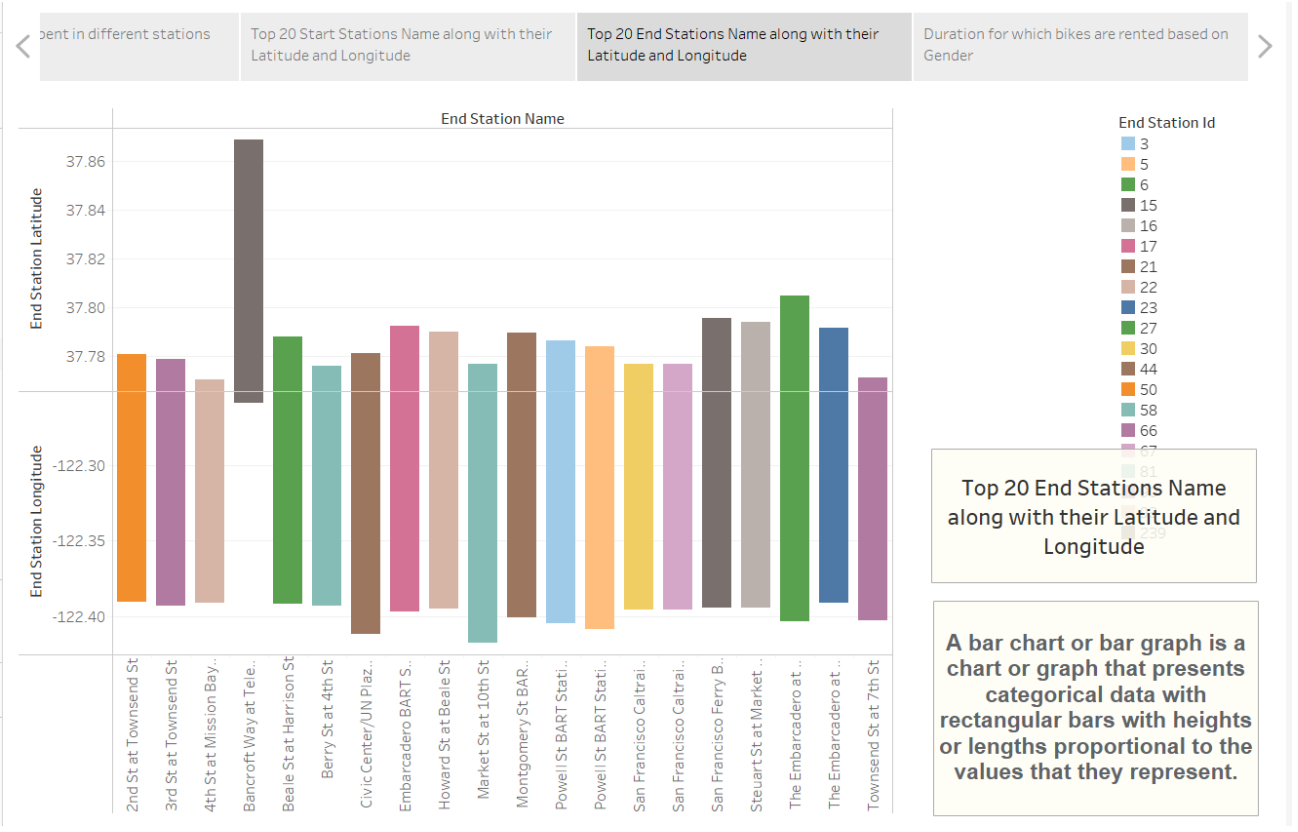
5) Duration(in sec) Spent in different stations

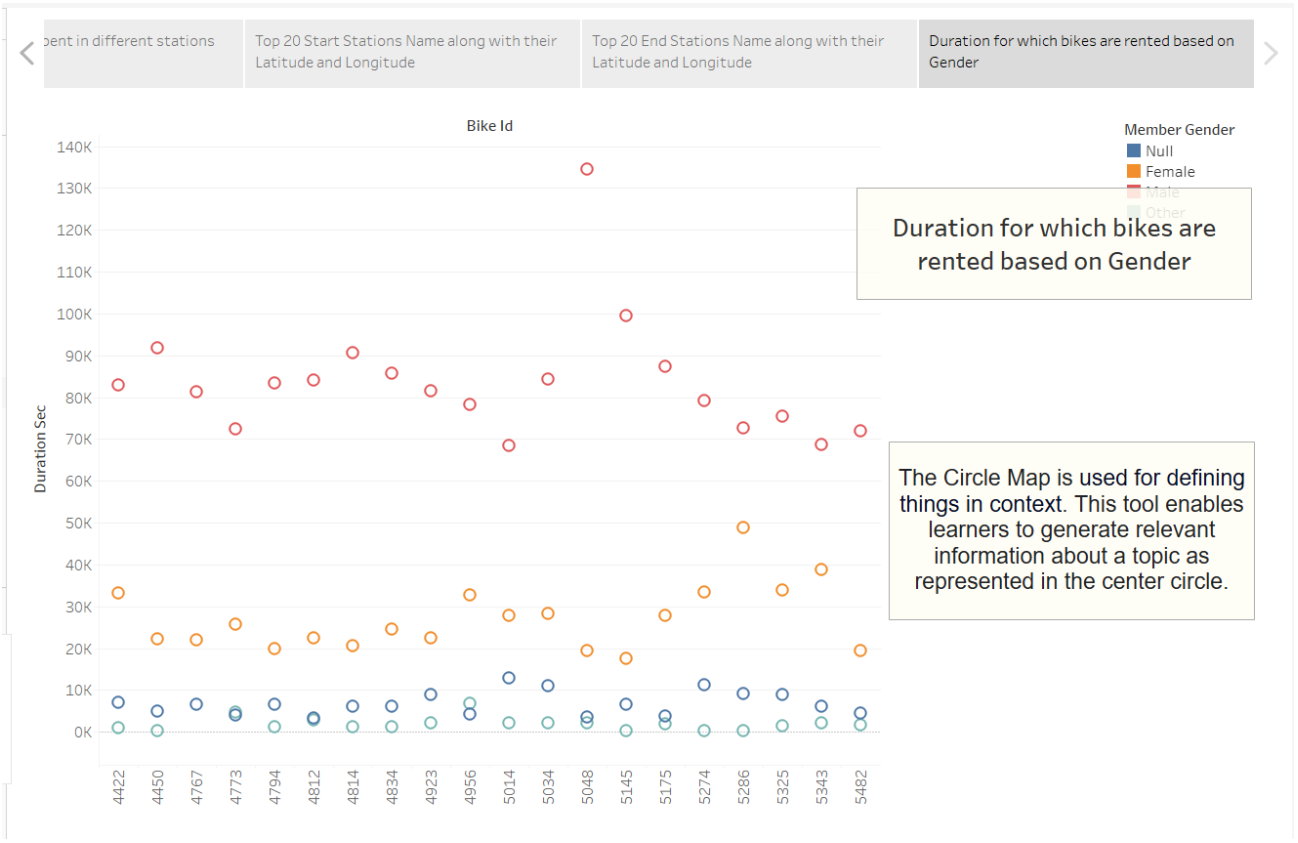


6) Top 20 Start Stations Name along with their Latitude and Longitude



7) Top 20 End Stations Name along with their Latitude and Longitude




pent in different stations
Top 20 Start Stations Name along with their Latitude and Longitude
Top 20 End Stations Name along with their Latitude and Longitude
Duration for which bikes are rented based on Gender
Bike Id
Duration Sec
140K
130K
120K
110K
100K
90K
80K
70K
60K
50K
40K
30K
20K
10K
0K
4422
4450
4767
4773
4794
4812
4814
4834
4923
4956
5014
5034
5048
5145
5175
5274
5286
5325
5343
5482
Member Gender
Null
Female
Male
Other
Duration for which bikes are rented based on Gender
The Circle Map is used for defining things in context. This tool enables learners to generate relevant information about a topic as represented in the center circle.

Milestone 8 : completed Visaualization names

Activity 1: No of Visualizations/ Graphs

1: Top 25 Start Station Id along with the Duration spent:

2: Top 25 End Station Id along with the Duration spent:

3: Top 20 Start Station Name along with their Latitute and Longitude:

4: Top 20 End Station Name along with their Latitute and Longitude:

5:Duration Spent in Different Stations:

6: Duration For Which the Bikes are Rented By Different Users:

7:Duration Spent on the Basis of Gender:

8: Cost and Duration Based on Gender and User Type:

9:Duration Spent on the Start Station Based on the Gender:

10: Time Spent based on the User Type:

11: Hours Consumed by different Age Groups:

12: Whether the Bike is shared with others?

Milestone 9: Web integration

Publishing helps us to track and monitor key performance metrics, to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.

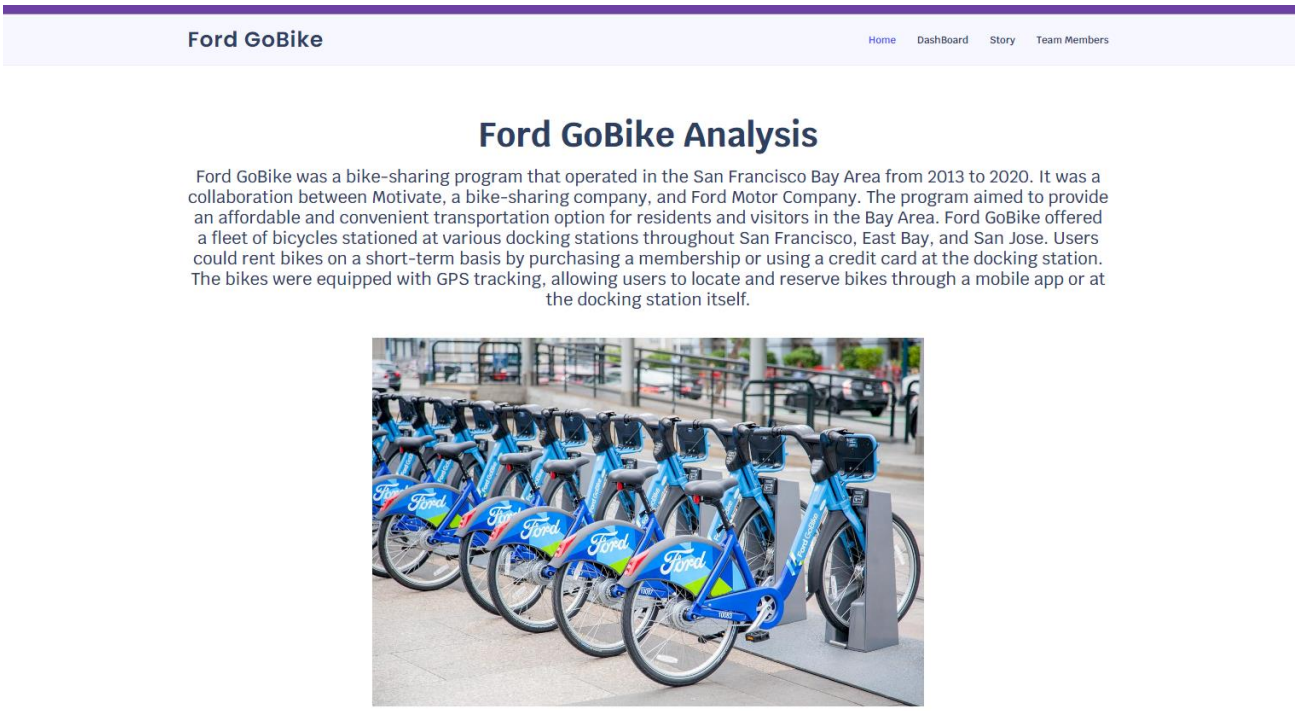
Integrating dashboard/reports/stories to web

https://drive.google.com/file/d/1F9pxR5QbUbnh1uPs8A67yRWC10v2mTOB/view?usp=drive_link

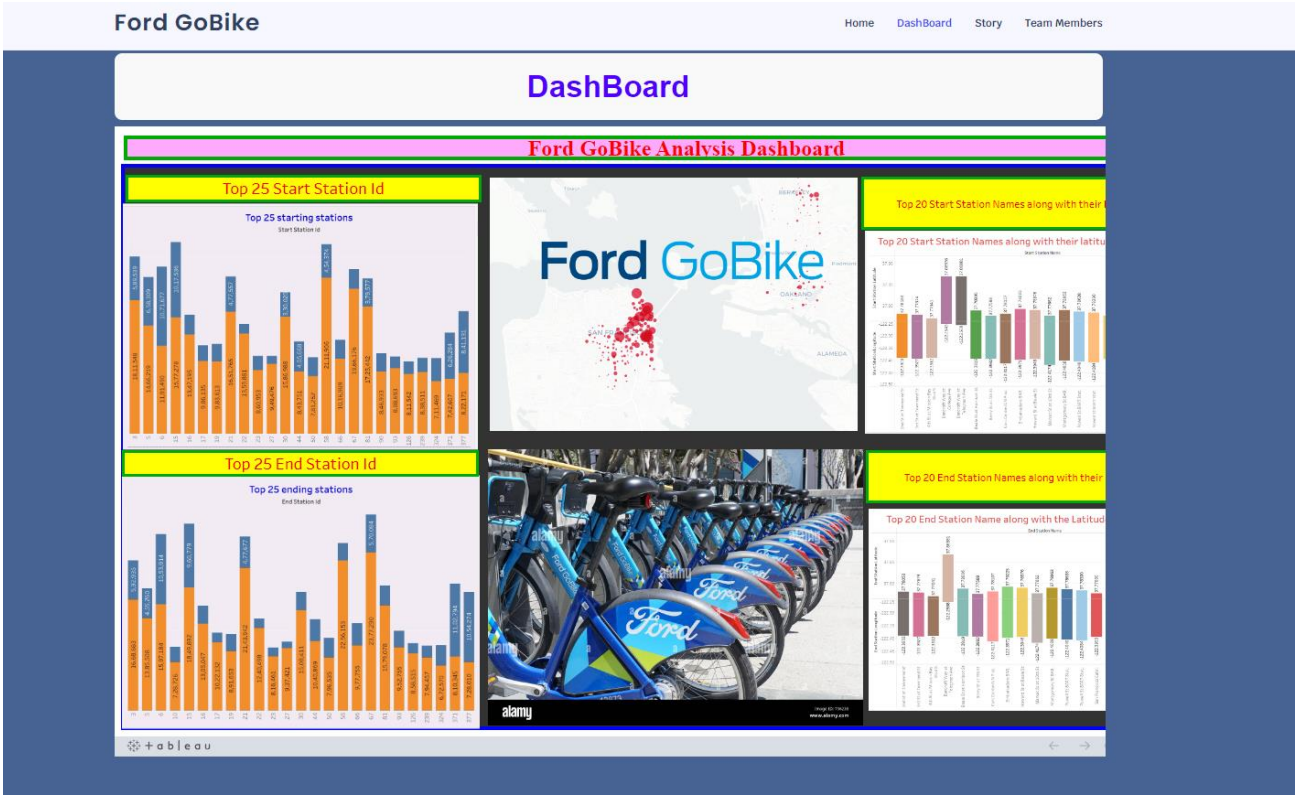
Activity 1: Dashboard and Story embed with UI

1. You have to Publish your sheet in your tableau public account.
2. Once you publish it, get the link as shown in the video below and paste it in your html code.
3. Then the sheets are displayed.

Home :

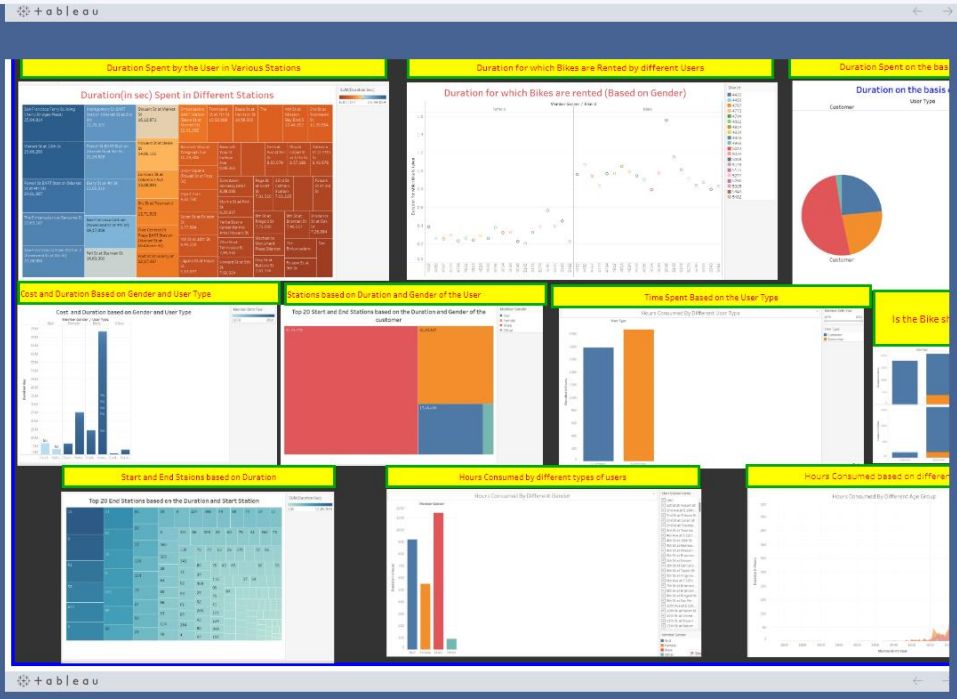


DashBoard:

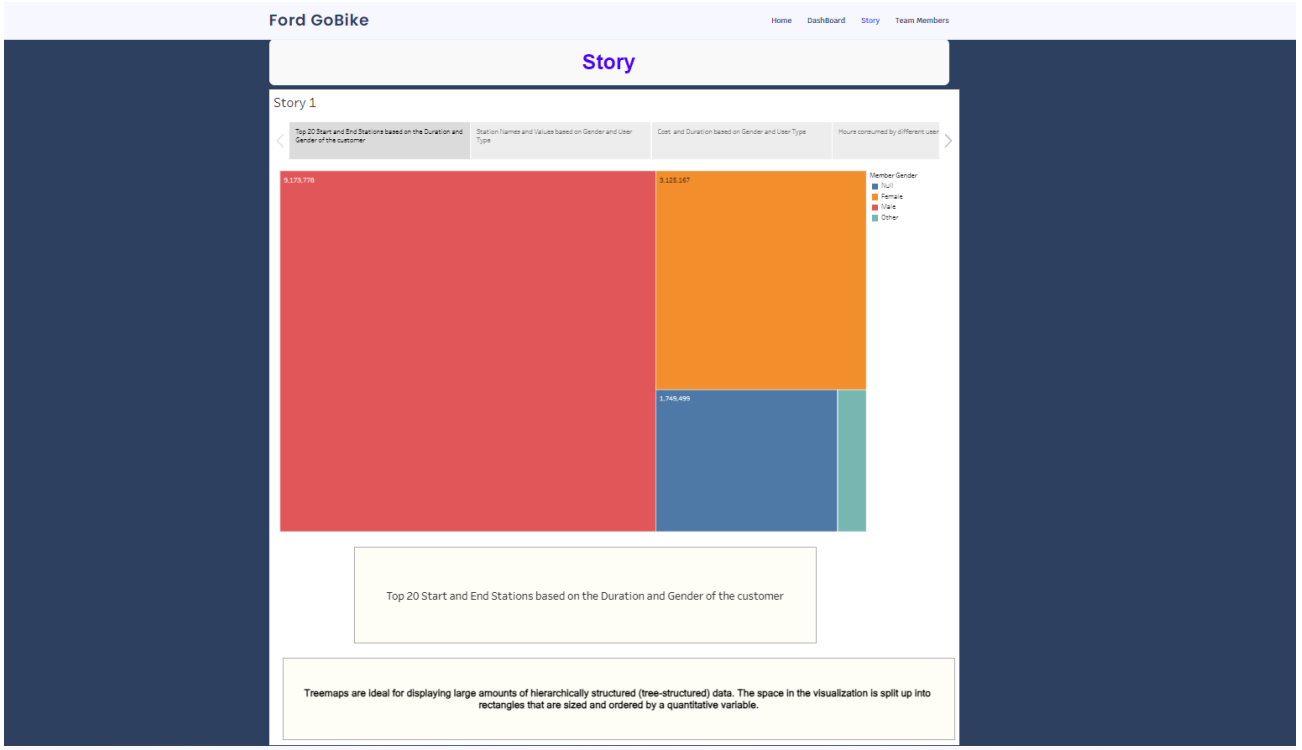


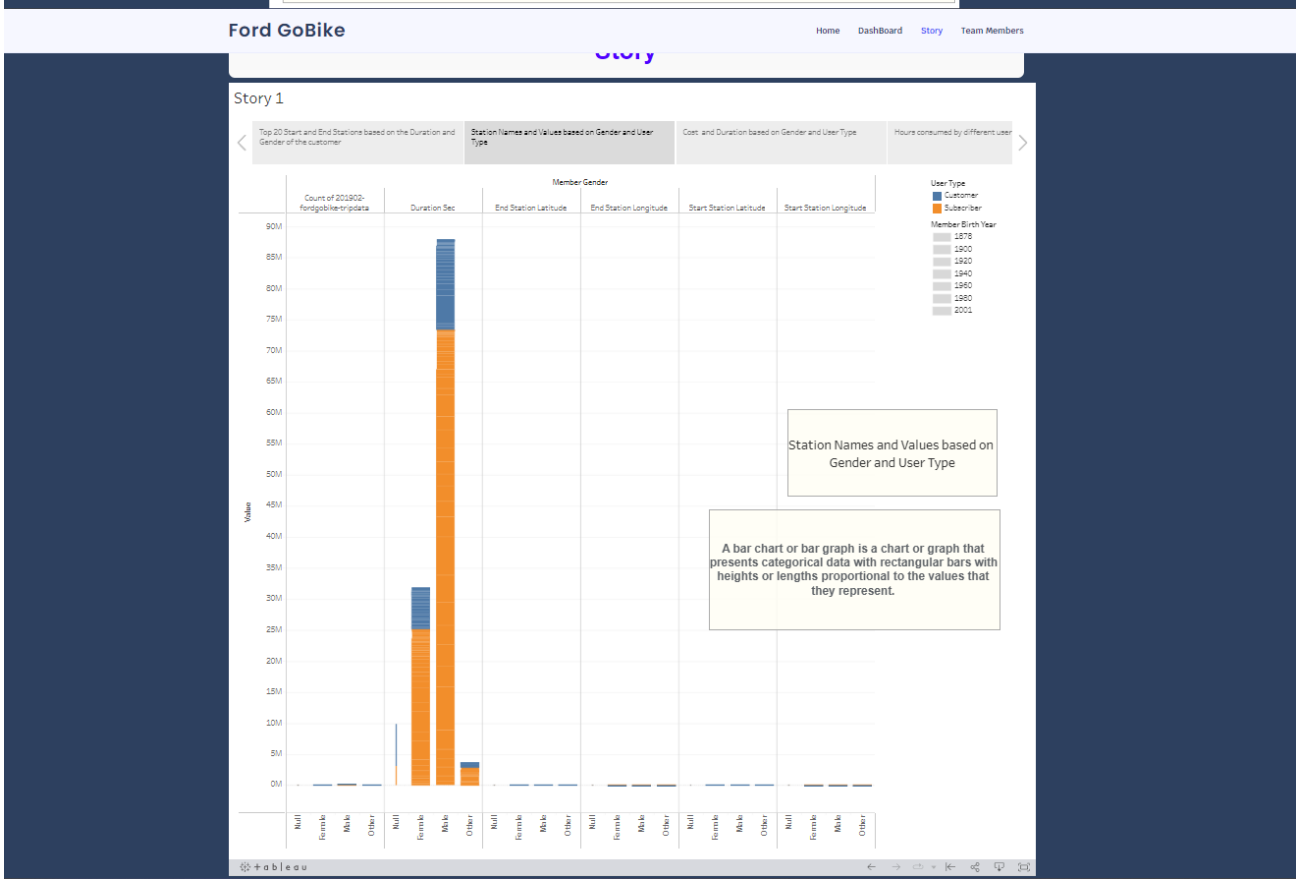
Ford GoBike

Home DashBoard Story Team Members



Story


Ford GoBike
Home
DashBoard
Story
Team Members
Story
Story 1
Top 20 Start and End Stations based on the Duration and Gender of the customer
Station Names and Values based on Gender and User Type
Cost and Duration based on Gender and User Type
Hours consumed by different user
9,173,778
3,125,167
1,749,499
Member Gender
Null
Female
Male
Other
Top 20 Start and End Stations based on the Duration and Gender of the customer
Treemaps are ideal for displaying large amounts of hierarchically structured (tree-structured) data. The space in the visualization is split up into rectangles that are sized and ordered by a quantitative variable.

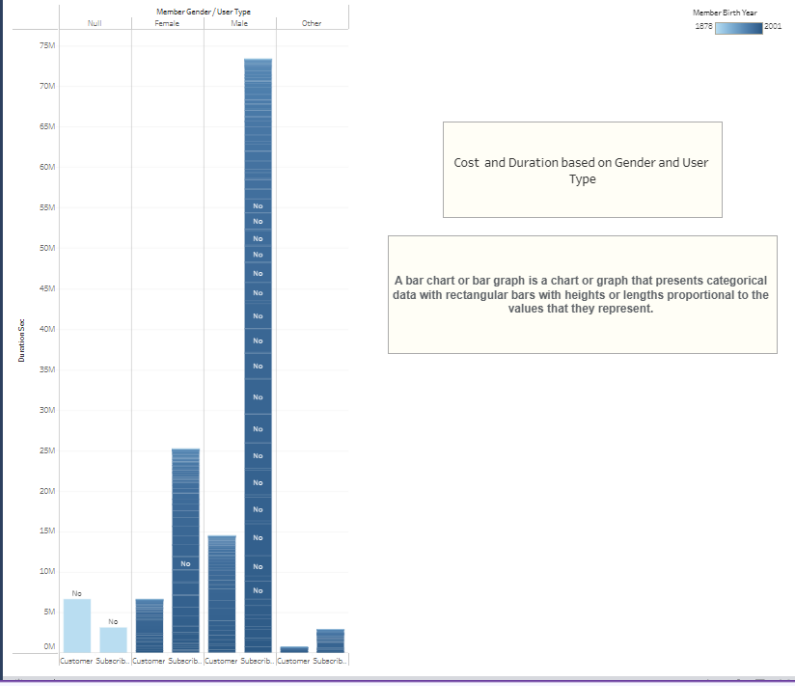

Ford GoBike
Home
DashBoard
Story
Team Members
Story 1
Top 20 Start and End Stations based on the Duration and Gender of the customer
Station Names and Values based on Gender and User Type
Cost and Duration based on Gender and User Type
Hours consumed by different user
Member Gender
Count of 201902-fordgobike-tripdata
Duration Sec
End Station Latitude
End Station Longitude
Start Station Latitude
Start Station Longitude
User Type
Customer
Subscriber
Member Birth Year
1878
1900
1920
1940
1960
1980
2001
Values
90M
85M
80M
75M
70M
65M
60M
55M
50M
45M
40M
35M
30M
25M
20M
15M
10M
5M
0M
Null
Female
Male
Other
Station Names and Values based on Gender and User Type
A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent.
tableau

Ford GoBike

Home DashBoard Story Team Members

Story 1

Top 20 Start and End Stations based on the Duration and Gender of the customer | Station Names and Values based on Gender and User Type | Cost and Duration based on Gender and User Type | Hours consumed by different user



Ford GoBike

Home DashBoard Story Team Members

Story 1

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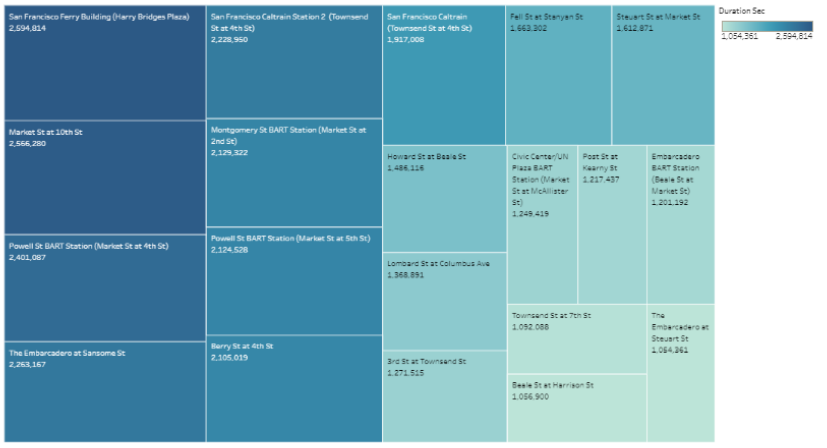
Story

Story 1

Cost and Duration based on Gender and User Type | Hours consumed by different user type | Duration(in sec) Spent in different stations | Top 20 and Lo



Duration(in sec) Spent in different stations

Treemaps are ideal for displaying large amounts of hierarchically structured (tree-structured) data. The space in the visualization is split up into rectangles that are sized and ordered by a quantitative variable.

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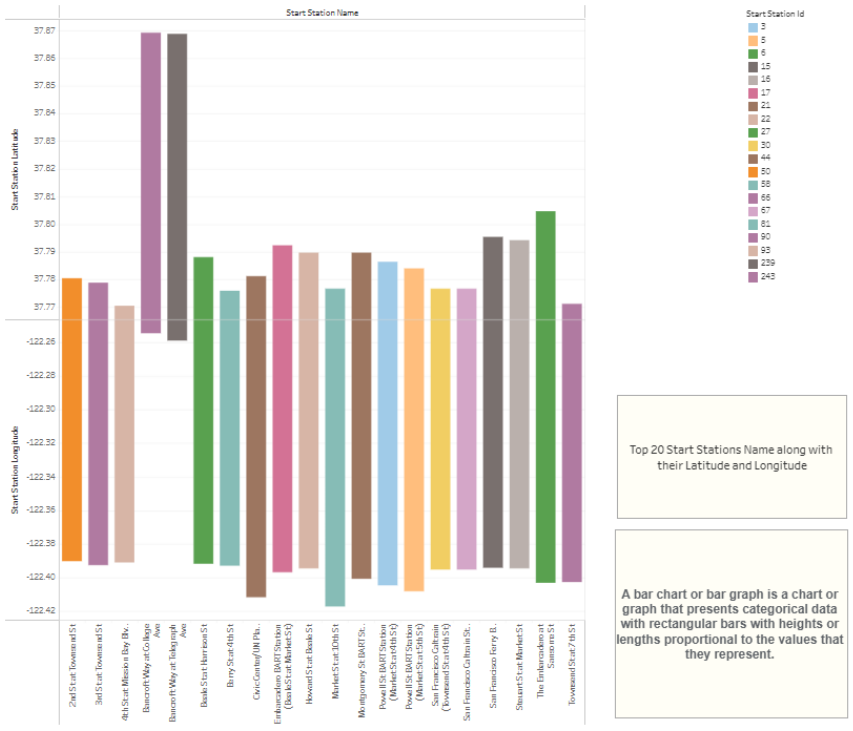
Story

Story 1

Hours consumed by different user type | Duration(in sec) Spent in different stations | Top 20 Start Stations Name along with their Latitude and Longitude | Top 20 Longit



Top 20 Start Stations Name along with their Latitude and Longitude

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent.

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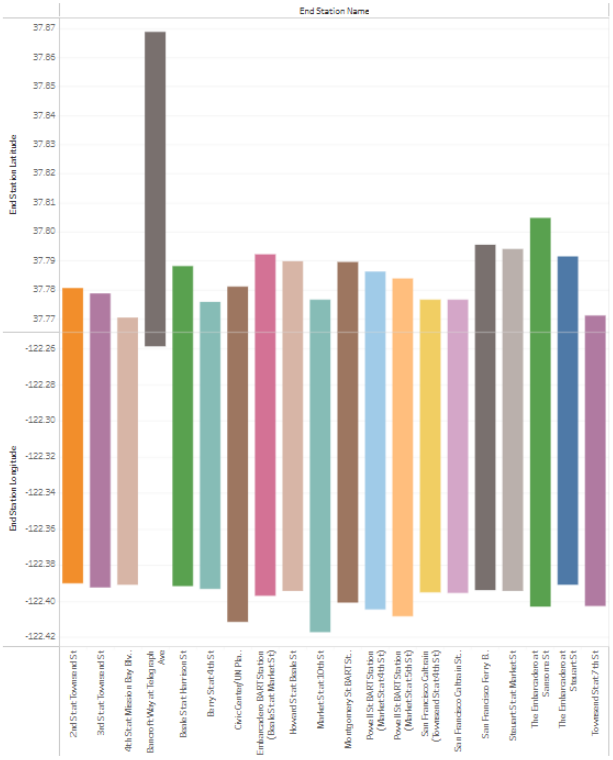
Story

Story 1

er type | Duration(in sec) Spent in different stations | Top 20 Start Stations Name along with their Latitude and Longitude | Top 20 End Stations Name along with their Latitude and Longitude | Durati



Top 20 End Stations Name along with their Latitude and Longitude

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent.

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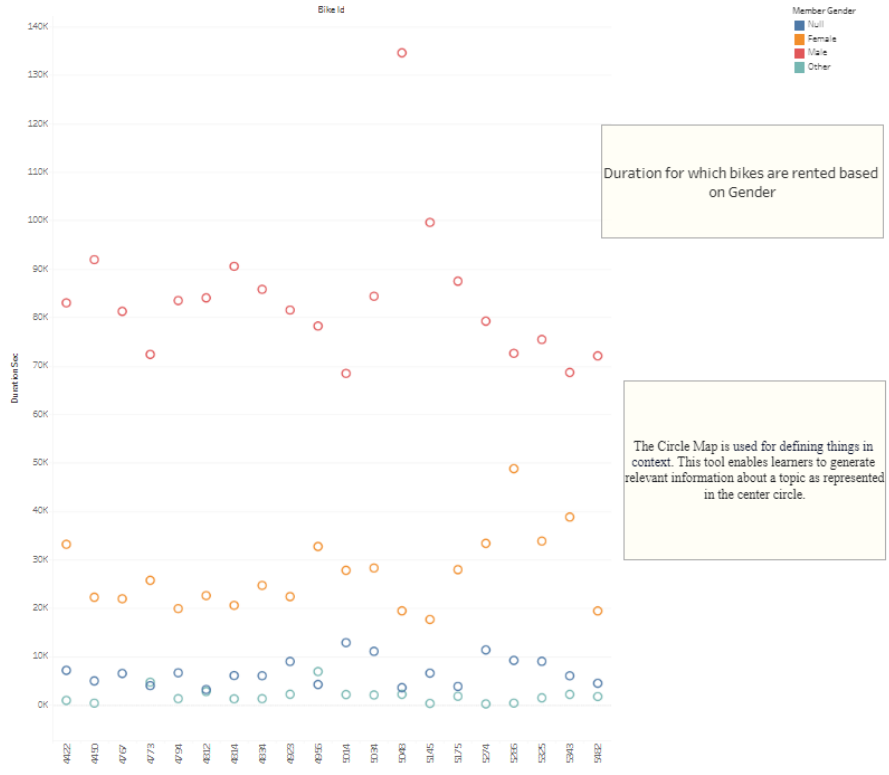
Story

Story 1

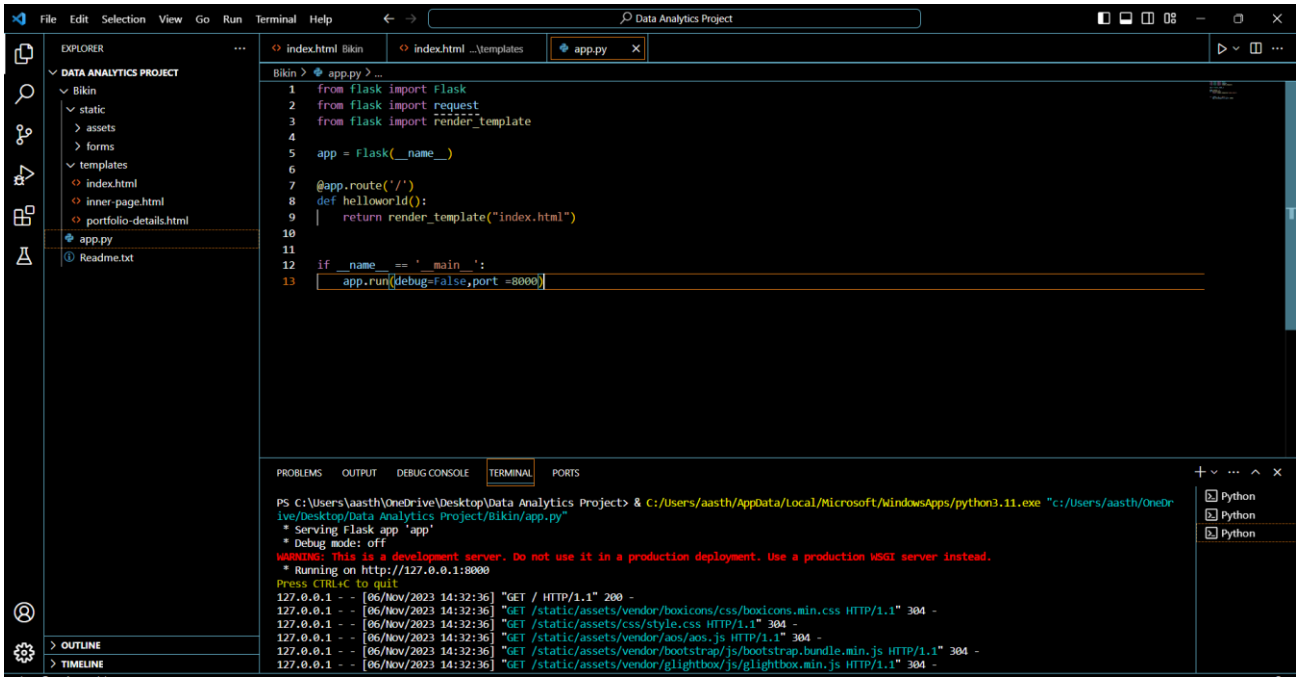
in different stations | Top 20 Start Stations Name along with their Latitude and Longitude | Top 20 End Stations Name along with their Latitude and Longitude | Duration for which bikes are rented based on Gender



Duration for which bikes are rented based on Gender

The Circle Map is used for defining things in context. This tool enables learners to generate relevant information about a topic as represented in the center circle.

Flask :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Data Analytics Project
EXPLORER
DATA ANALYTICS PROJECT
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forms
templates
index.html
inner-page.html
portfolio-details.html
app.py
Readme.txt
index.html Bikin
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app.py
Bikin > app.py > ...
1 from flask import Flask
2 from flask import request
3 from flask import render_template
4
5 app = Flask(__name__)
6
7 @app.route('/')
8 def helloworld():
9 return render_template("index.html")
10
11
12 if __name__ == '__main__':
13 app.run(debug=False,port =8000)
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\aasth\OneDrive\Desktop\Data Analytics Project> & C:/Users/aasth/AppData/Local/Microsoft/WindowsApps/python3.11.exe "c:/Users/aasth/OneDrive/Desktop/Data Analytics Project/Bikin/app.py"
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8000
Press CTRL+C to quit
127.0.0.1 - - [06/Nov/2023 14:32:36] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [06/Nov/2023 14:32:36] "GET /static/assets/vendor/boxicons/css/boxicons.min.css HTTP/1.1" 304 -
127.0.0.1 - - [06/Nov/2023 14:32:36] "GET /static/assets/css/style.css HTTP/1.1" 304 -
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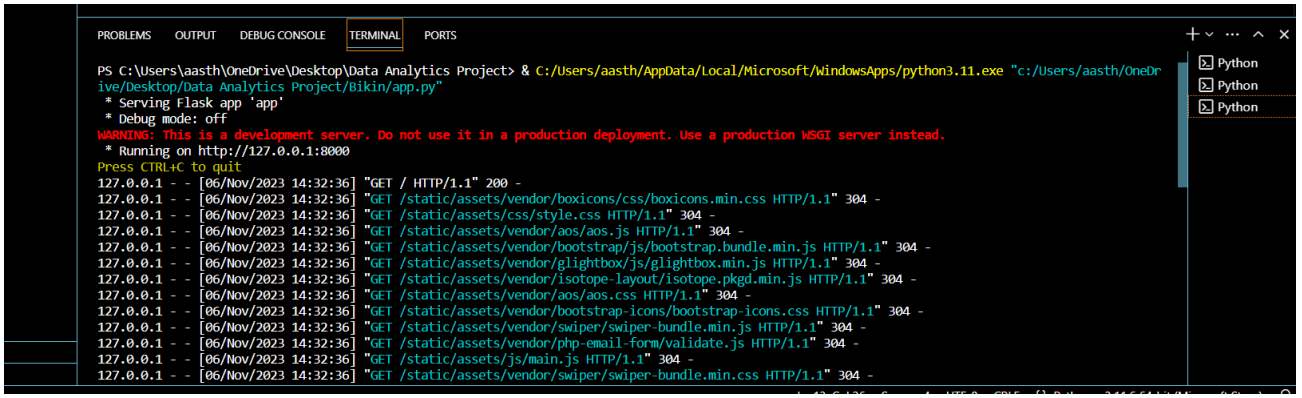
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\aasth\OneDrive\Desktop\Data Analytics Project> & C:/Users/aasth/AppData/Local/Microsoft/WindowsApps/python3.11.exe "c:/Users/aasth/OneDrive/Desktop/Data Analytics Project/Bikin/app.py"
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8000
Press CTRL+C to quit
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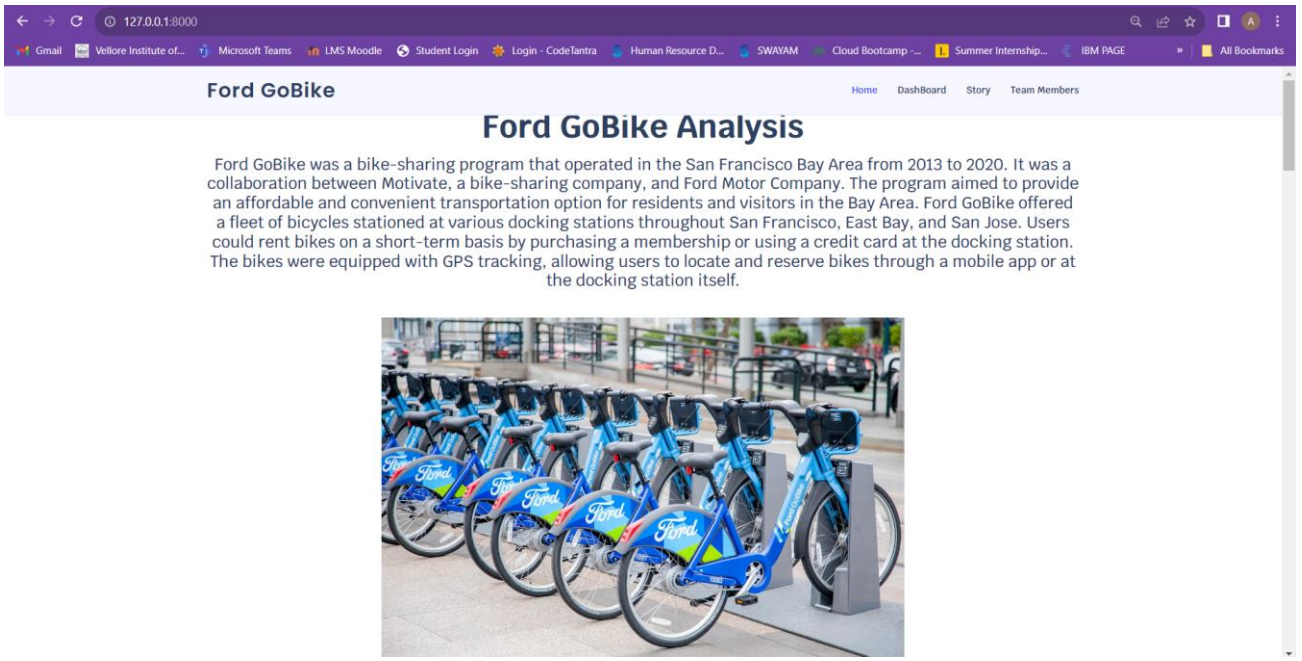
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Ford GoBike
Home
DashBoard
Story
Team Members
Ford GoBike Analysis
Ford GoBike was a bike-sharing program that operated in the San Francisco Bay Area from 2013 to 2020. It was a collaboration between Motivate, a bike-sharing company, and Ford Motor Company. The program aimed to provide an affordable and convenient transportation option for residents and visitors in the Bay Area. Ford GoBike offered a fleet of bicycles stationed at various docking stations throughout San Francisco, East Bay, and San Jose. Users could rent bikes on a short-term basis by purchasing a membership or using a credit card at the docking station. The bikes were equipped with GPS tracking, allowing users to locate and reserve bikes through a mobile app or at the docking station itself.

Milestone 10: Project Demonstration & Documentation

Below mentioned deliverables to be submitted along with other deliverables

Activity 1:- Record explanation Video for project end to end solution

https://drive.google.com/file/d/1M5LRi2_4pbHMKiIUnwvDfzpwEMFadoKQ/view?usp=sharing