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# GOVERNMENT OF TAMILNADU

## Naan Mudhalvan - Project-Based Experiential Learning

### Voyage Vista: Illuminating Insights from Uber expeditionary analysis

Submitted by

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**M.V.MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN**

(Affiliated To Mother Teresa Women's University, Kodaikanal)

Reaccredited with "A" Grade by NAAC

**DINDIGUL – 624 001.**

**OCTOBER - 2023**

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**PG & RESEARCH DEPARTMENT OF MATHEMATICS**

**BONAFIDE CERTIFICATE**

This is to certify that this is a bonafide record of the project entitled, **VOYAGE VISTA: ILLUMINATING INSIGHTS FROM UBER EXPENDITORY ANALYSIS** done by **Ms. P. DHARSHINI (21321ER041)**, **Ms. K. DHURGA DEVI (21321ER042)**, **Ms. J. JOHN SYLVIA (21321ER043)** and **Ms. K. KEERTHANA (21321ER044)**. This is submitted in partial fulfillment for the award of the degree of **BACHELOR OF SCIENCE IN MATHEMATICS** in **M.V.MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN, DINDIGUL** during the period of June 2023 to November 2023.

**Project Mentor(s)**

**Head of the Department**

## CONTENT

| S.NO | TITLE                                  | PAGE NO |
|------|--|---------|
| 1    | Introduction                           | 1       |
|      | 1.1 Overview                           | 1       |
|      | 1.2 Purpose                            | 1       |
| 2    | Problem Definition and Design Thinking | 1       |
|      | 2.1 Empathy Map                        | 1       |
|      | 2.2 Ideation and Brainstorming Map     | 2       |
| 3    | Result                                 | 2       |
| 4    | Advantages and Disadvantages           | 13      |
| 5    | Applications                           | 14      |
| 6    | Conclusion                             | 14      |
| 7    | Future Scope                           | 14      |

# VOYAGE VISTA: ILLUMINATING INSIGHTS FROM UBER EXPENDITARY ANALYSIS

## 1. INTRODUCTION

Uber links passengers with drivers using the uber app. Generally, the drivers own their own car. The company does also offer rental or lease on cars through third party partners .Uber is headquartered in San Francisco and operates in approximately 70 countries and 10,500 cities worldwide. The company has over 131 million monthly active users and 6 million active drivers and couriers worldwide and facilitates an average of 25 million trips per day. It has facilitated 42 billion trips since its inception in 2010 and is the largest ridesharing company in the United States

### 1.1 Overview

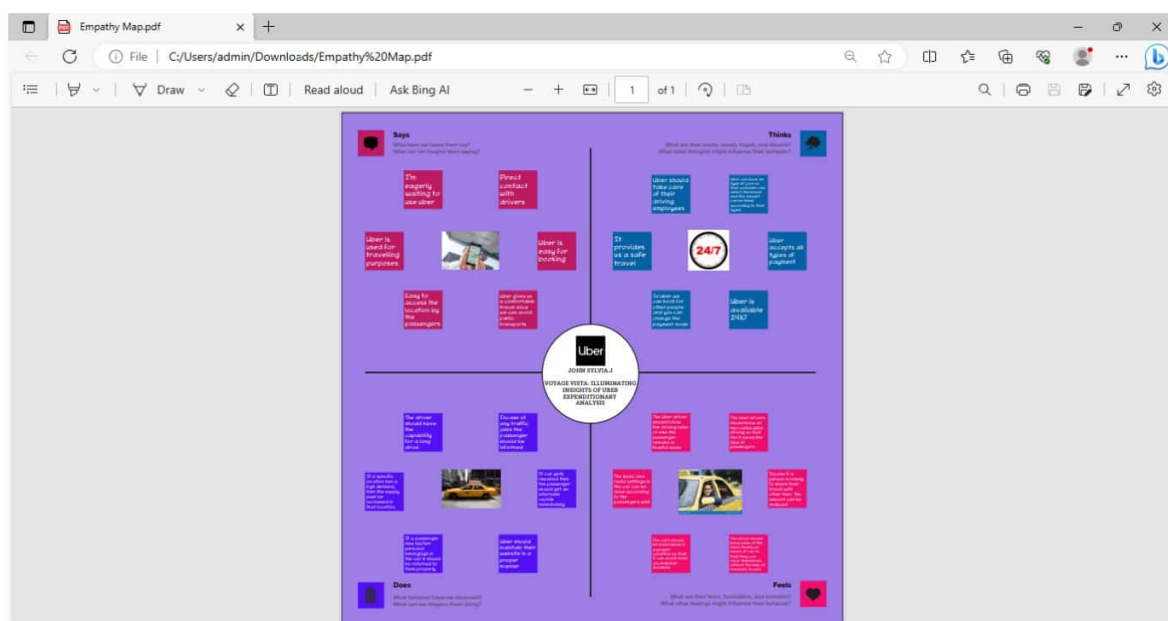
This project is about uber expeditionary analysis that refers to the number of trips taken by the Uber drivers which can provide insights to their overall activities.

### 1.2 Purpose

This project is to analyze the demand for rides in specific areas. Uber's data can be analyzed on a daily, weekly, monthly basis to understand the trends and patterns of trip volumes. This analysis can help identify peak hours or days of high demand and optimize driver availability during those times. Trips can be analyzed based on geographic regions or specific cities to identify areas with higher demand. This analysis can help Uber drivers decide where to focus their driving efforts for maximum efficiency and profitability.

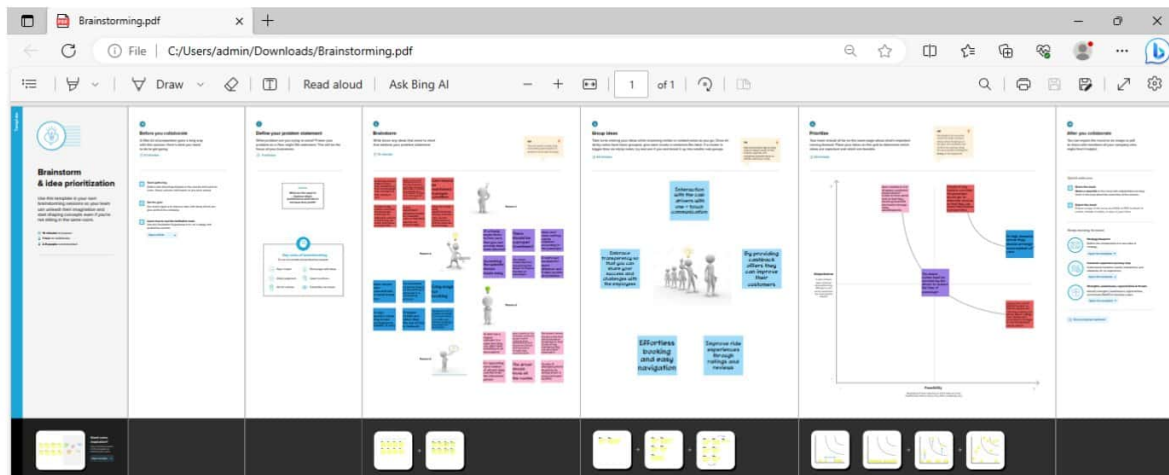
## 2. PROBLEM DEFINITION AND DESIGN THINKING

### 2.1 Empathy Map





## 2.2 Ideation and Brainstorming map



## 3. RESULT

### Milestone 1: Define Problem / Problem Understanding

#### Activity 1: Specify the business problem

Uber is a multinational transportation network company that operates a ride-hailing platform. It was founded in 2009 by Garrett Camp and Travis Kalanick and is based in San Francisco, California. Uber provides a convenient way for individuals to request rides from drivers who use their own personal vehicles.

Uber Driver Analysis refers to the Analyzing the number of trips taken by Uber drivers can provide insights into their overall activity and the demand for rides in specific areas. Daily, Weekly, or Monthly Analysis: Uber's data can be analyzed on a daily, weekly, monthly basis to understand the trends and patterns of trip volumes. This analysis can help identify peak hours or days of high demand and optimize driver availability during those times. Trips can be analyzed based on geographic regions or specific cities to identify areas with higher demand. This analysis can help Uber drivers decide where to focus their driving efforts for maximum efficiency and profitability. The Major of our project is to use data Analyzing techniques to find unknown patterns in the Uber Drives dataset. The research is carried out on Uber drives data collected from the year 2016.

#### Activity 2: Business Requirements

The business requirements of Uber analysis refer to the specific objectives and goals that Uber seeks to achieve through the data analysis process. These requirements drive the focus and scope of the analysis, guiding the selection of relevant data, metrics, and visualization techniques

Driver Performance Evaluation: Determine the criteria for evaluating driver performance, such as customer ratings, completion rate, cancellation rate, average trip

duration, and driver feedback. These metrics can help identify top-performing drivers and areas for improvement.

**Efficiency Analysis:** Assess driver efficiency by analyzing metrics such as average time spent waiting for passengers, average distance driven per trip, and idle time between trips. This analysis can help identify opportunities to optimize driver utilization and reduce downtime.

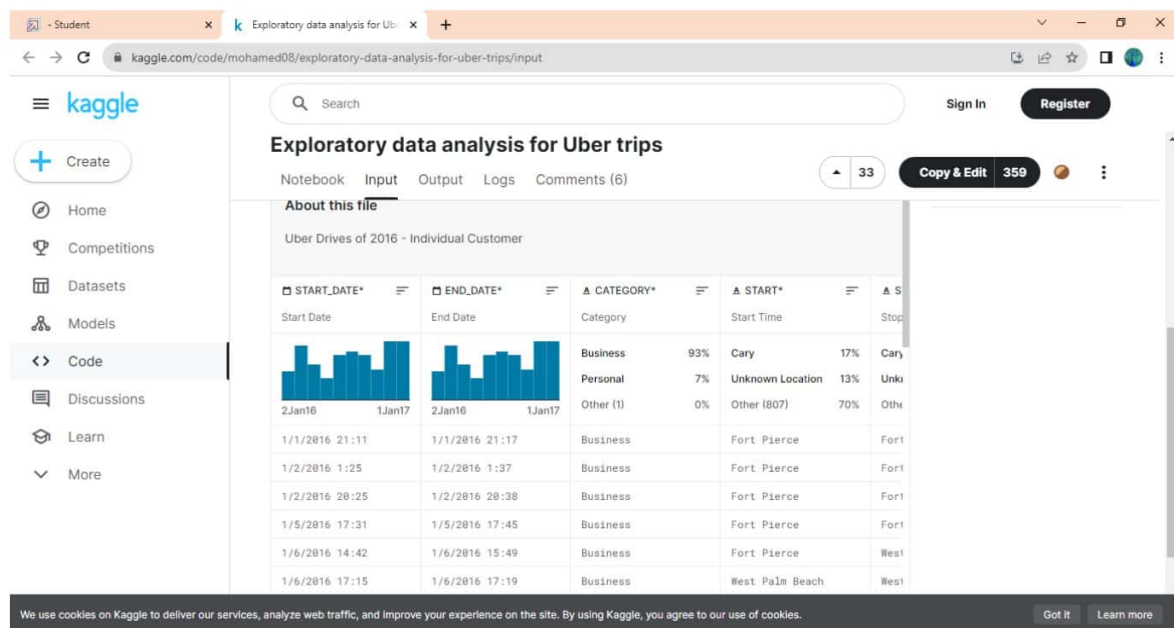
**Supply and Demand Analysis:** Understand the relationship between driver supply and passenger demand in different areas and at different times. Identify peak hours and high demand areas to optimize driver allocation and increase customer satisfaction.

**Route Optimization:** Analyze driver routes and identify patterns to optimize navigation and reduce travel time. By analyzing historical trip data and using mapping algorithms, you can suggest more efficient routes to drivers, enhancing their performance and reducing fuel costs.

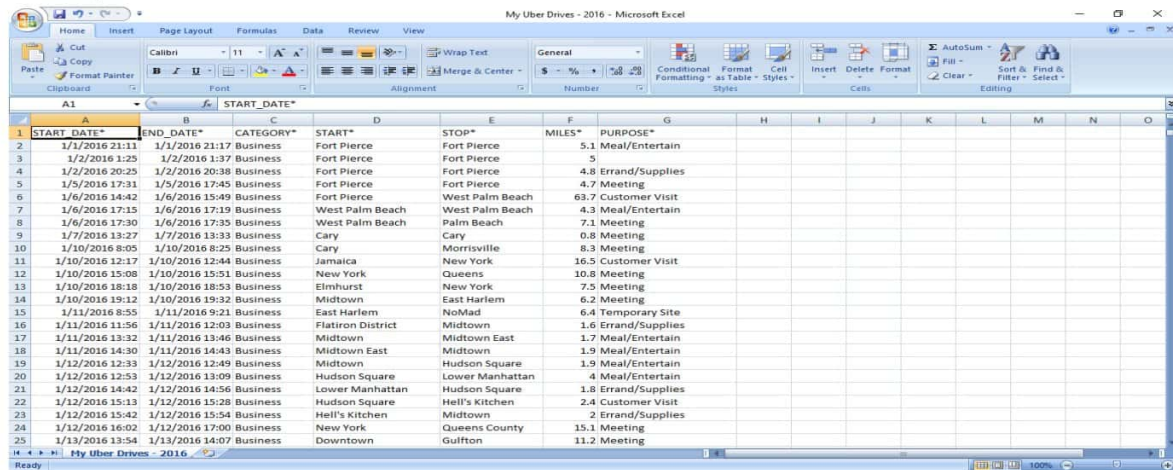
## Milestone 2: Data Collection

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



## Activity 2: Understand the data



| START_DATE*     | END_DATE*       | CATEGORY* | START*            | STOP*           | MILES* | PURPOSE*        |
|-----------------|-----------------|-----------|-------------------|-----------------|--------|-----------------|
| 1/1/2016 21:11  | 1/1/2016 21:17  | Business  | Fort Pierce       | Fort Pierce     | 5.1    | Meal/Entertain  |
| 1/2/2016 1:25   | 1/2/2016 1:37   | Business  | Fort Pierce       | Fort Pierce     | 5      |                 |
| 1/2/2016 20:25  | 1/2/2016 20:38  | Business  | Fort Pierce       | Fort Pierce     | 4.8    | Errand/Supplies |
| 1/5/2016 17:31  | 1/5/2016 17:45  | Business  | Fort Pierce       | Fort Pierce     | 4.7    | Meeting         |
| 1/6/2016 14:42  | 1/6/2016 15:49  | Business  | Fort Pierce       | West Palm Beach | 63.7   | Customer Visit  |
| 1/6/2016 17:15  | 1/6/2016 17:19  | Business  | West Palm Beach   | West Palm Beach | 4.3    | Meal/Entertain  |
| 1/6/2016 17:30  | 1/6/2016 17:35  | Business  | West Palm Beach   | Palm Beach      | 7.1    | Meeting         |
| 1/7/2016 13:27  | 1/7/2016 13:33  | Business  | Cary              | Cary            | 0.8    | Meeting         |
| 1/10/2016 8:05  | 1/10/2016 8:25  | Business  | Cary              | Morrisville     | 8.3    | Meeting         |
| 1/10/2016 12:17 | 1/10/2016 12:44 | Business  | Jamaica           | New York        | 16.5   | Customer Visit  |
| 1/10/2016 15:08 | 1/10/2016 15:51 | Business  | New York          | Queens          | 10.8   | Meeting         |
| 1/10/2016 18:18 | 1/10/2016 18:53 | Business  | Elmhurst          | New York        | 7.5    | Meeting         |
| 1/10/2016 19:12 | 1/10/2016 19:32 | Business  | Midtown           | East Harlem     | 6.2    | Meeting         |
| 1/11/2016 8:55  | 1/11/2016 9:21  | Business  | East Harlem       | NoMad           | 6.4    | Temporary Site  |
| 1/11/2016 11:56 | 1/11/2016 12:03 | Business  | Flatiron District | Midtown         | 1.6    | Errand/Supplies |
| 1/11/2016 13:32 | 1/11/2016 13:46 | Business  | Midtown           | Midtown East    | 1.7    | Meal/Entertain  |
| 1/11/2016 14:30 | 1/11/2016 14:43 | Business  | Midtown East      | Midtown         | 1.9    | Meal/Entertain  |
| 1/12/2016 12:33 | 1/12/2016 12:49 | Business  | Midtown           | Hudson Square   | 1.9    | Meal/Entertain  |
| 1/12/2016 12:53 | 1/12/2016 13:09 | Business  | Hudson Square     | Lower Manhattan | 4      | Meal/Entertain  |
| 1/12/2016 14:42 | 1/12/2016 14:56 | Business  | Lower Manhattan   | Hudson Square   | 1.8    | Errand/Supplies |
| 1/12/2016 15:13 | 1/12/2016 15:28 | Business  | Hudson Square     | Hell's Kitchen  | 2.4    | Customer Visit  |
| 1/12/2016 15:42 | 1/12/2016 15:54 | Business  | Hell's Kitchen    | Midtown         | 2      | Errand/Supplies |
| 1/12/2016 16:02 | 1/12/2016 17:00 | Business  | New York          | Queens County   | 15.1   | Meeting         |
| 1/13/2016 13:54 | 1/13/2016 14:07 | Business  | Downtown          | Gulfton         | 11.2   | Meeting         |

## Activity 3: Connect Dataset with Tableau

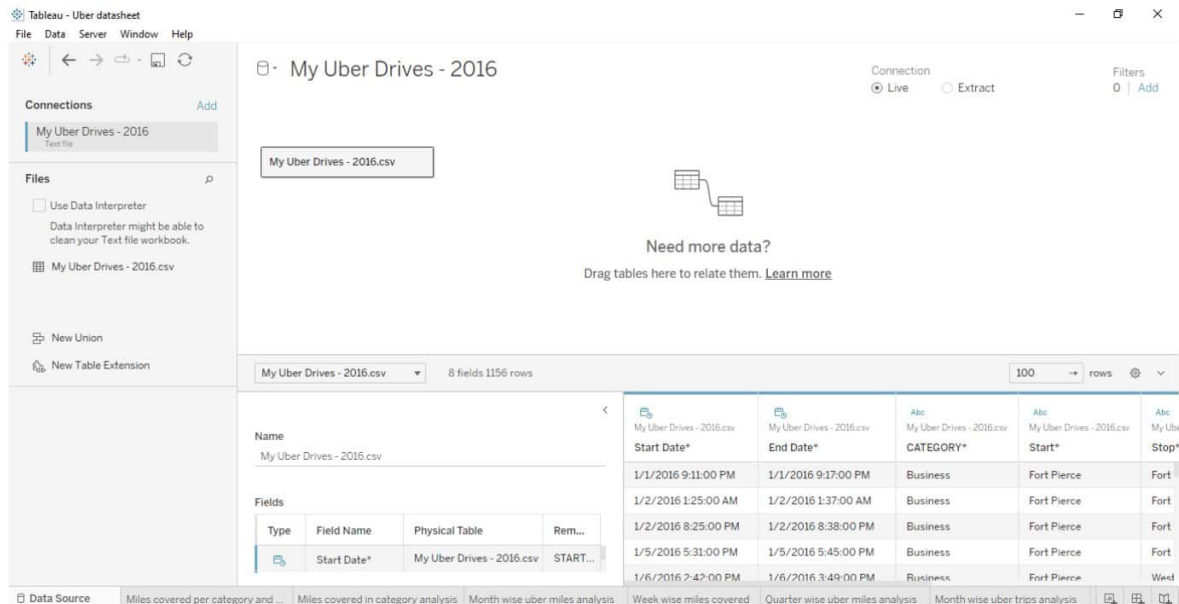


Tableau - Uber dataset

File Data Server Window Help

Connections: My Uber Drives - 2016 (Text file)

Files: My Uber Drives - 2016.csv

Need more data? Drag tables here to relate them. [Learn more](#)

My Uber Drives - 2016.csv 8 fields 1156 rows

| Name        | My Uber Drives - 2016.csv |
|-------------|---------------------------|
| Start Date* | 1/1/2016 9:11:00 PM       |
| End Date*   | 1/1/2016 9:17:00 PM       |
| CATEGORY*   | Business                  |
| Start*      | Fort Pierce               |
| Stop*       | Fort                      |

Fields:

| Type        | Field Name                | Physical Table | Rem... |
|-------------|---------------------------|----------------|--------|
| Start Date* | My Uber Drives - 2016.csv | START...       |        |

Data Source: Miles covered per category and ... Miles covered in category analysis Month wise uber miles analysis Week wise miles covered Quarter wise uber miles analysis Month wise uber trips analysis

## Milestone 3: Data Preparation

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 our analysis.

### Activity 1: Prepare the Data for visualization

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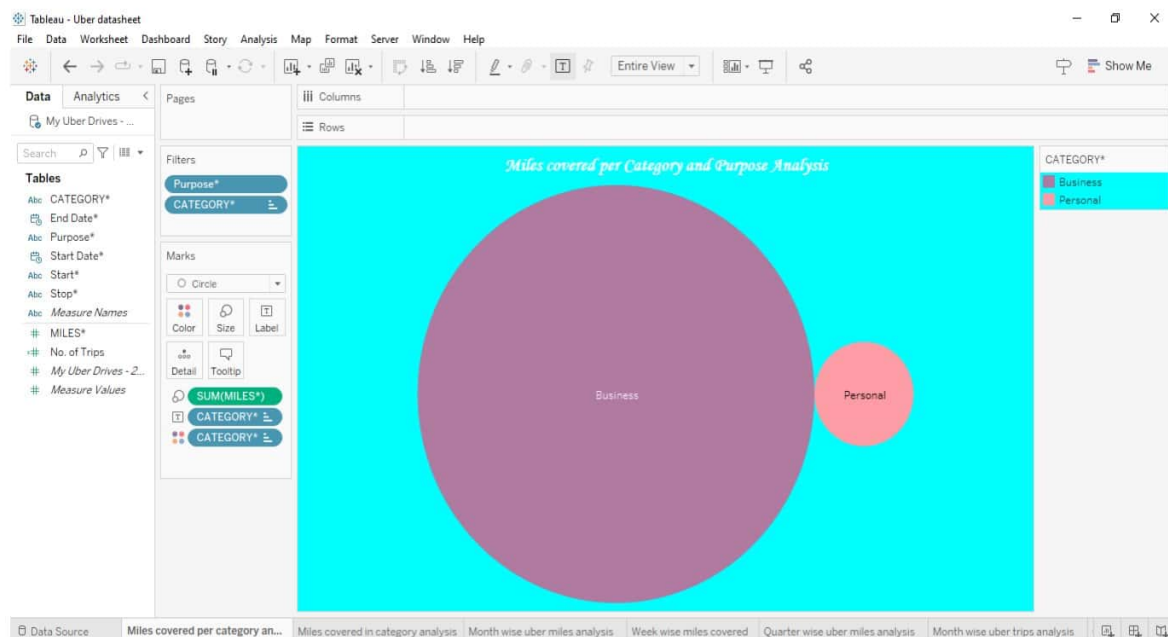
## Milestone 4: Data Visualization

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: No. of Unique Visualization

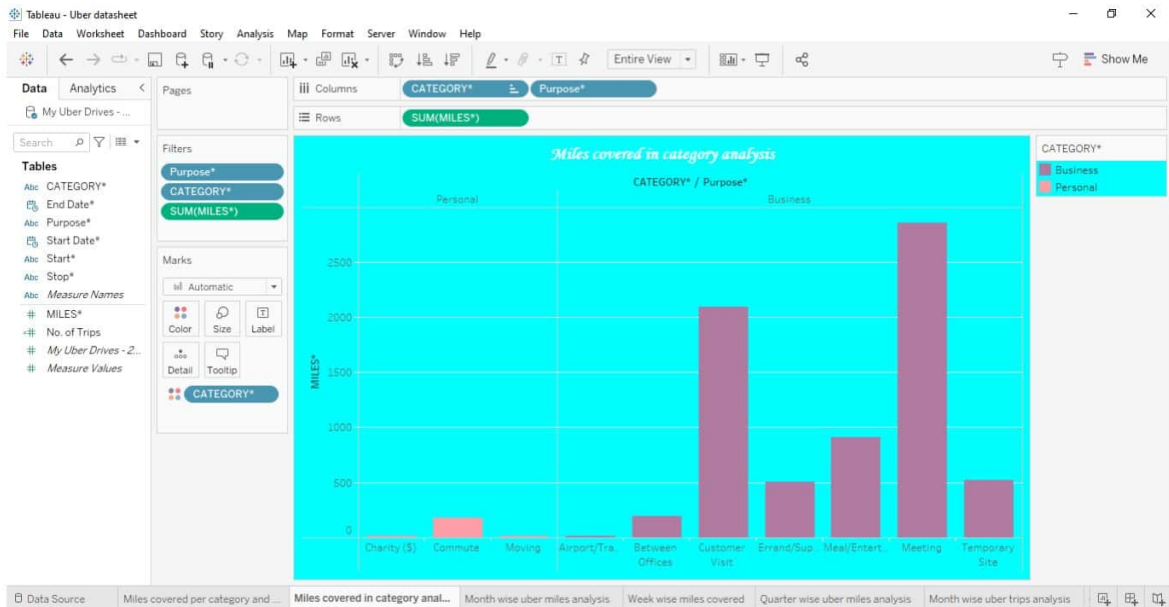
The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of a project include bar charts, line charts, heat maps, scatter plots, pie charts, Maps, etc. These visualizations can be used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

#### Activity 1.1: Miles covered per category and purpose analysis

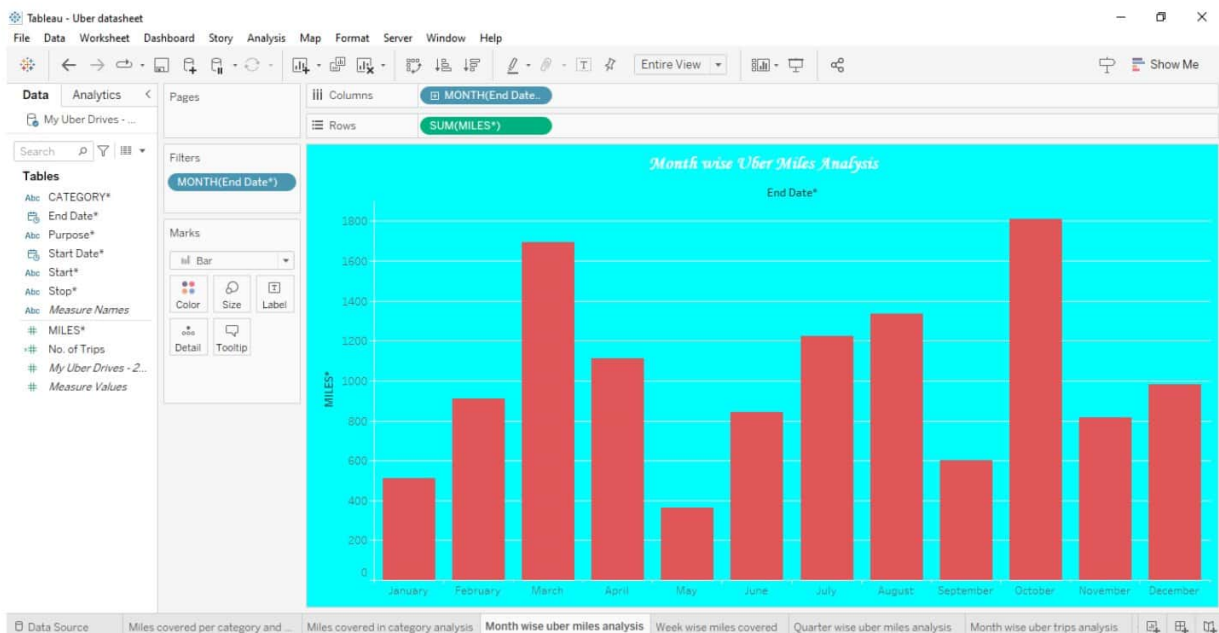




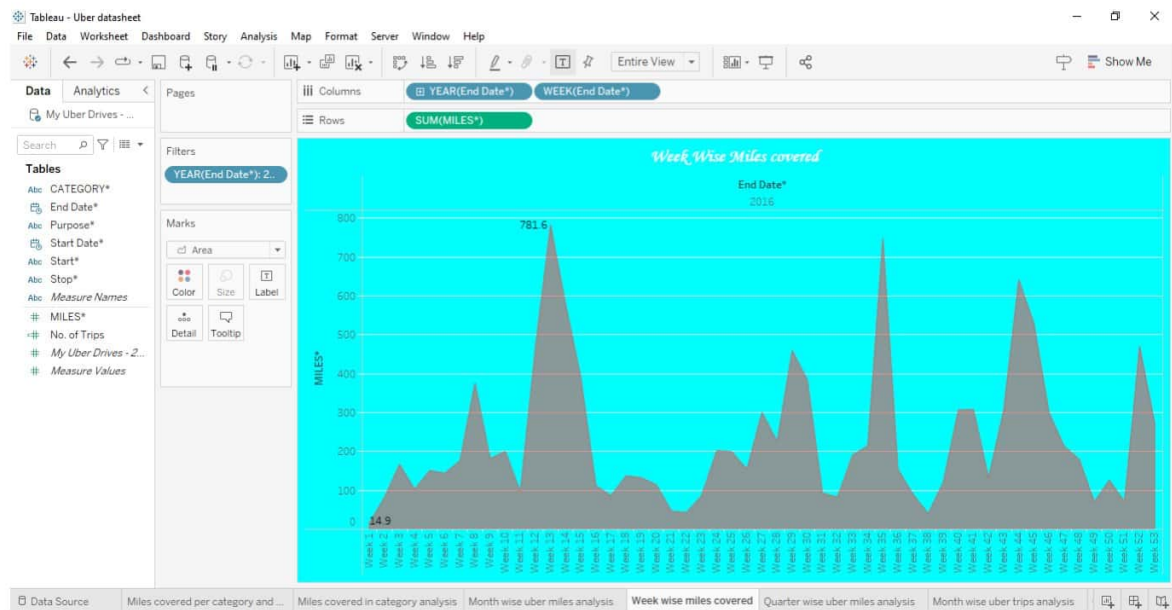
## Activity 1.2: Miles covered in category analysis



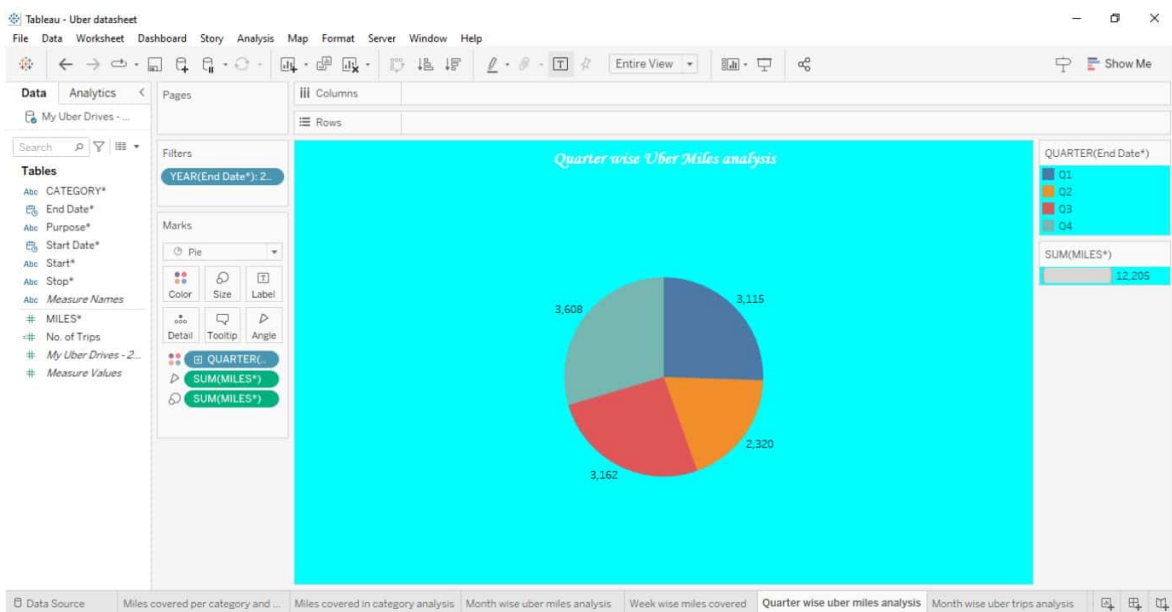
## Activity 1.3: Month wise Uber miles analysis



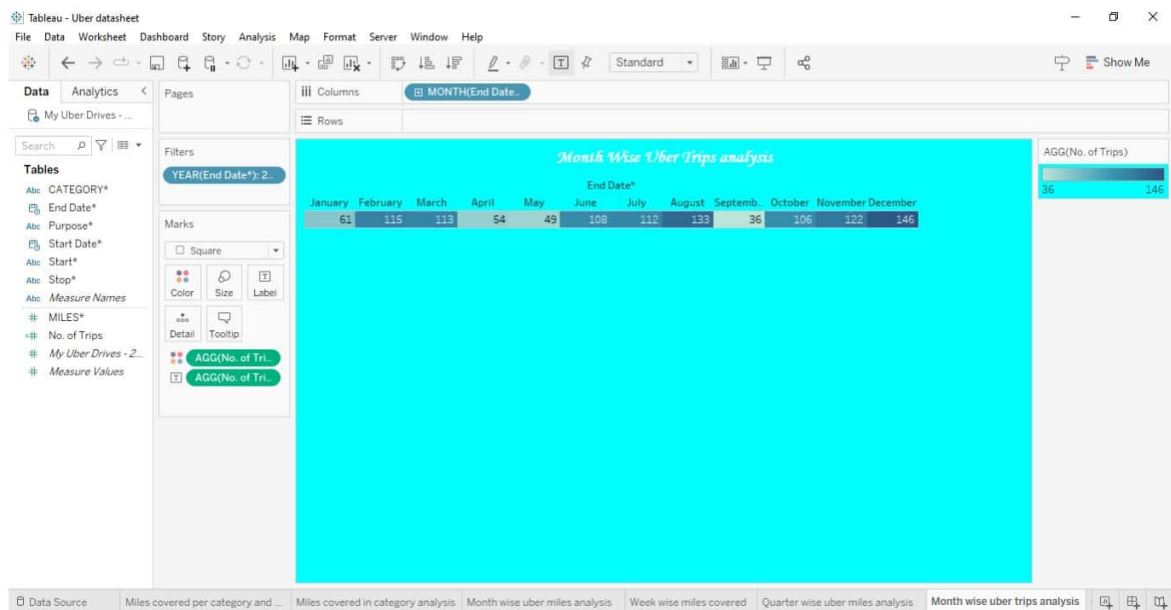
## Activity 1.4: Week wise Uber miles analysis



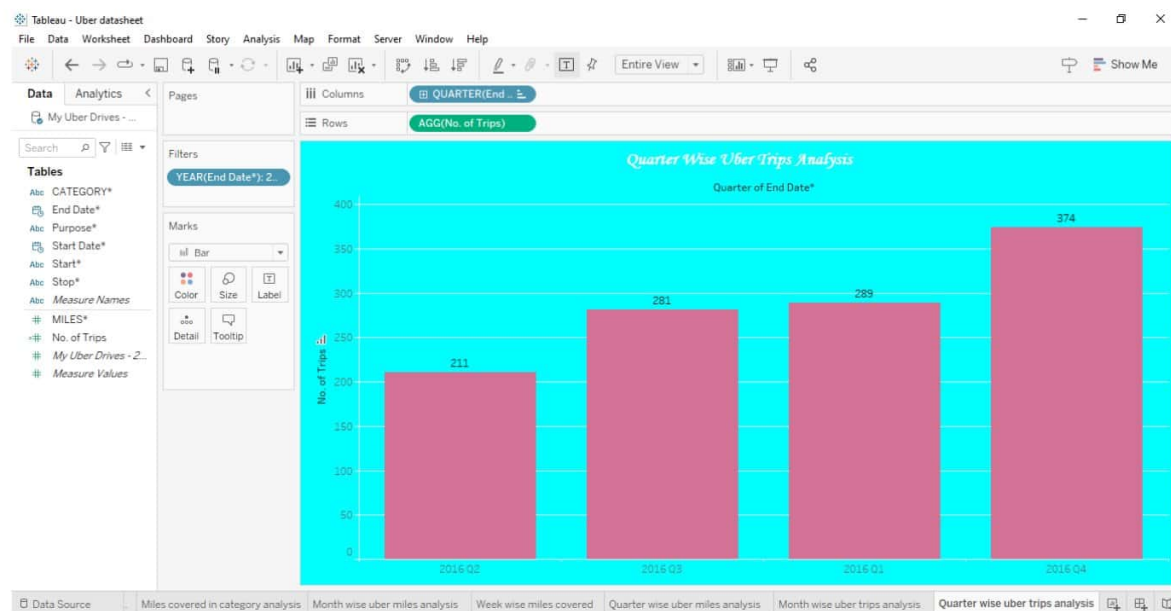
## Activity 1.5: Quarter wise Uber miles analysis



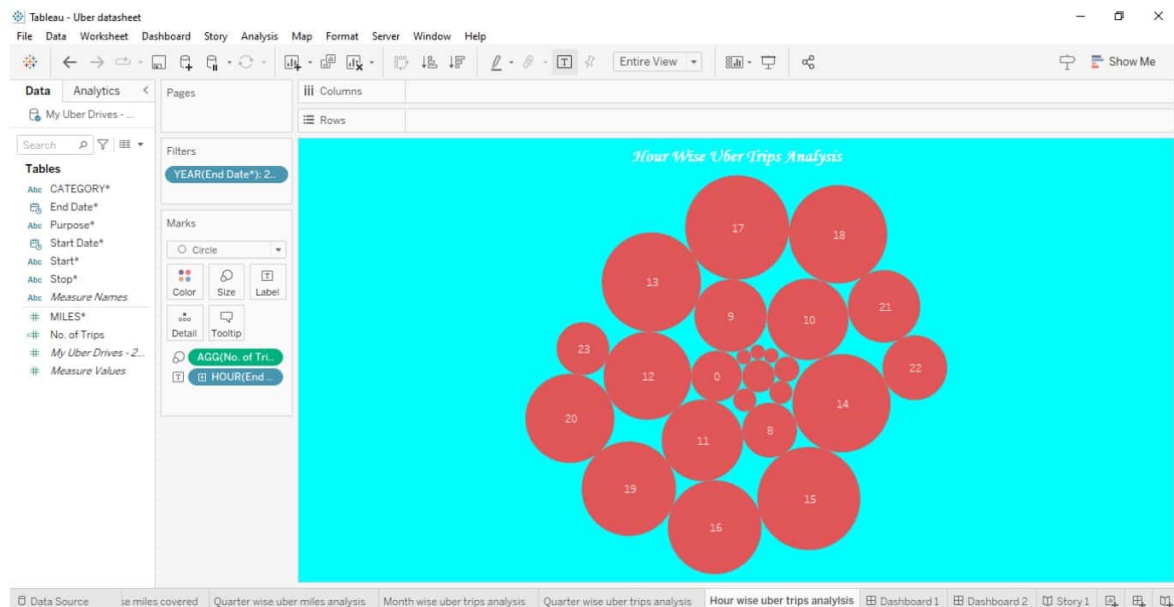
## Activity 1.6: Month wise Uber trips analysis



## Activity 1.7: Quarter wise Uber trips analysis



## Activity 1.8: Hour wise Uber trips analysis



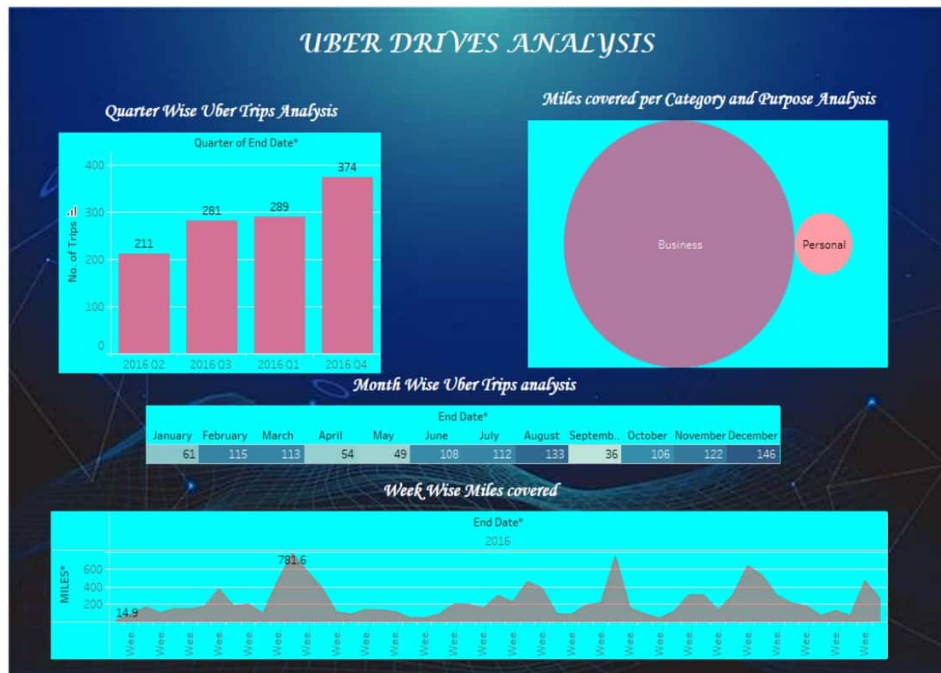
### Milestone 5: Dashboard

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.

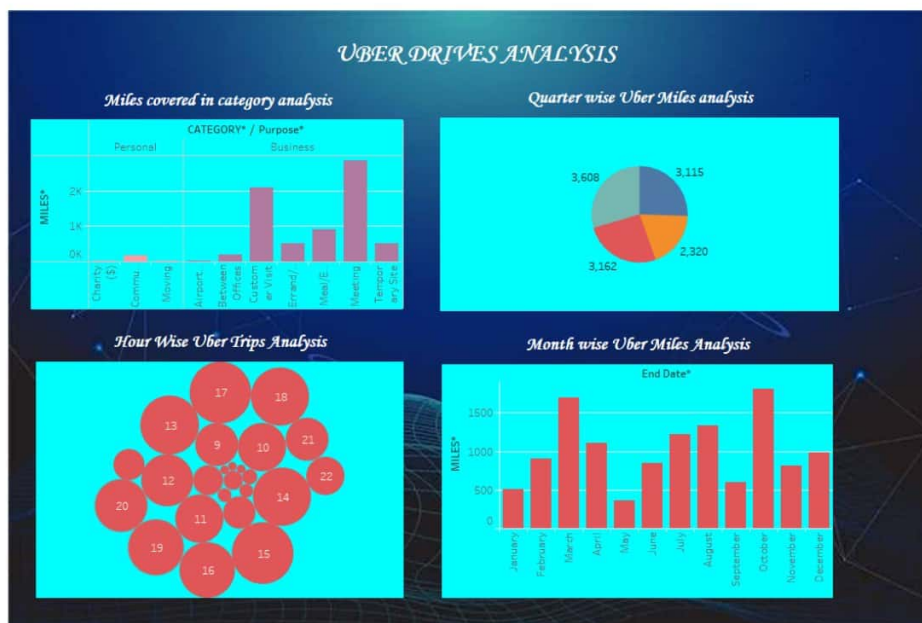
#### Activity 1: Responsive and Design of Dashboard

The responsiveness and design of a dashboard for Data-Driven insights on YouTube channels Analysis is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information, interactivity, data-driven approach, accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights.





sis Week wise miles covered Quarter wise uber miles analysis Month wise uber trips analysis Quarter wise uber trips analysis Hour wise uber trips analysis Dashboard 1 Dashboard 2 Story 1



sis Week wise miles covered Quarter wise uber miles analysis Month wise uber trips analysis Quarter wise uber trips analysis Hour wise uber trips analysis Dashboard 1 Dashboard 2 Story 1

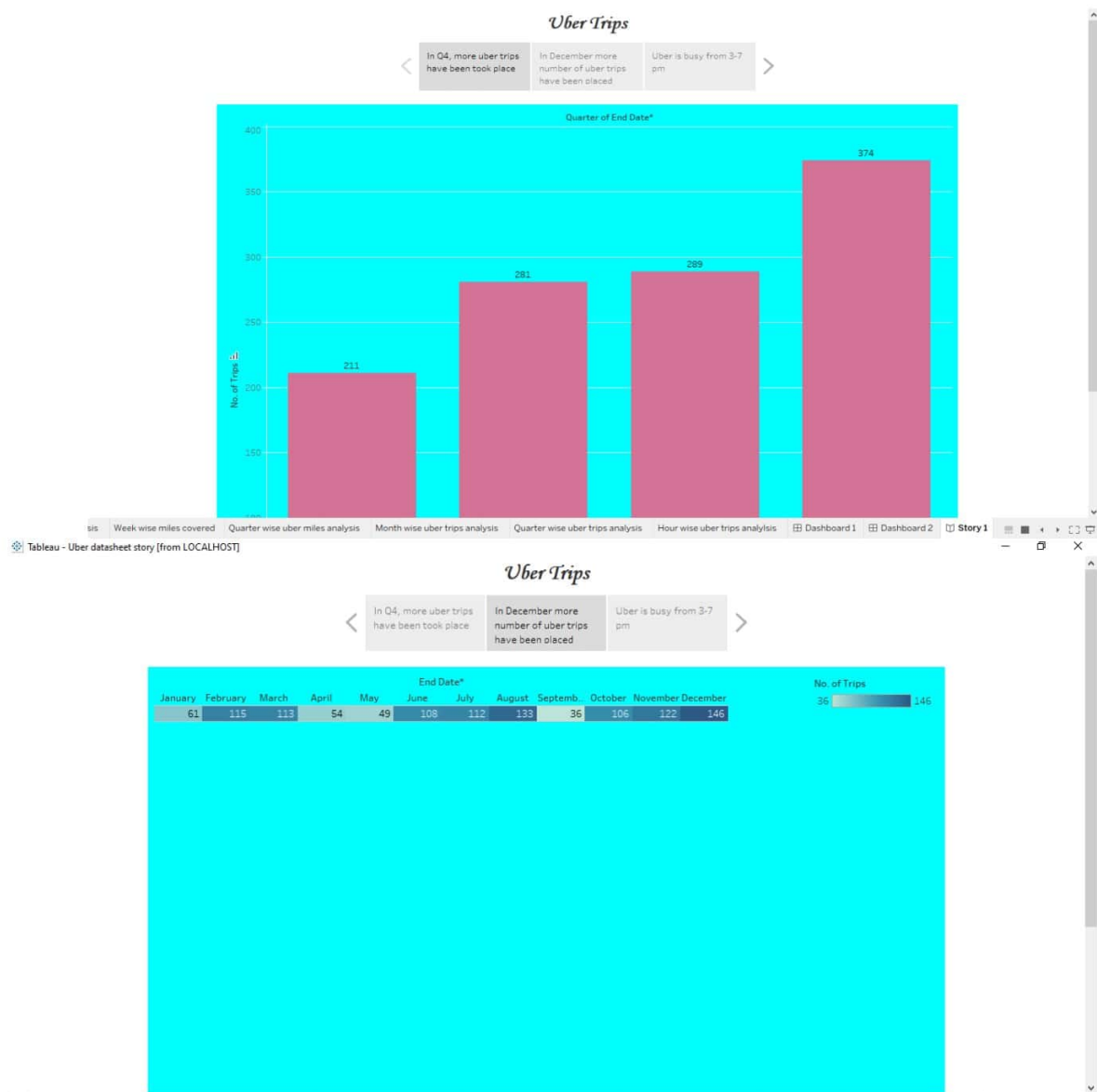
## Milestone 6: Story

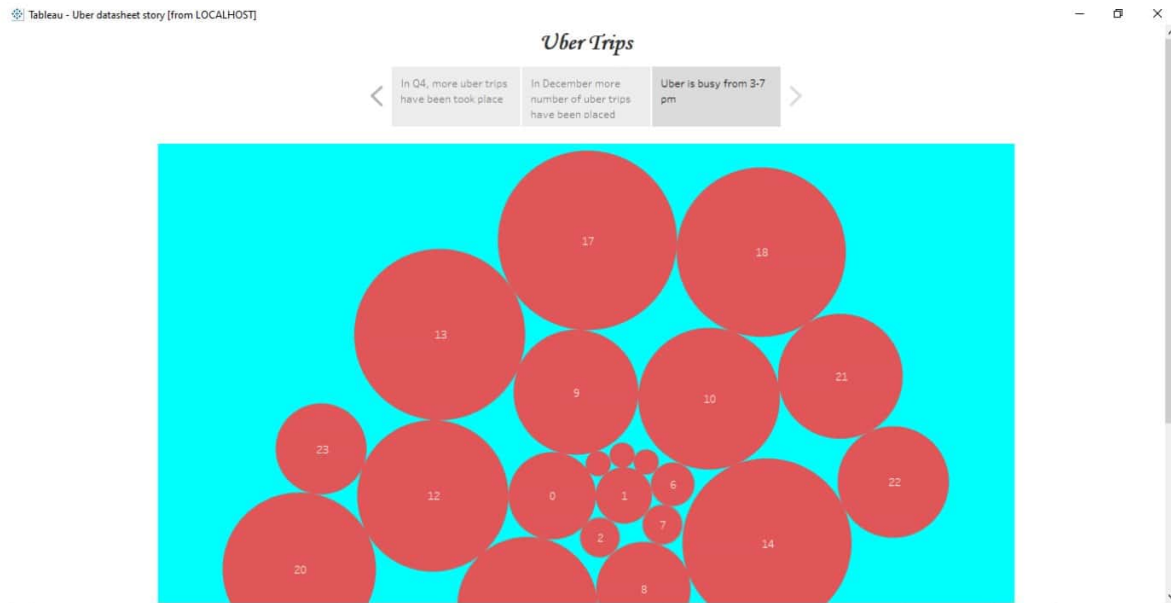
A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights

their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

### Activity 1: No. of Scenes of story

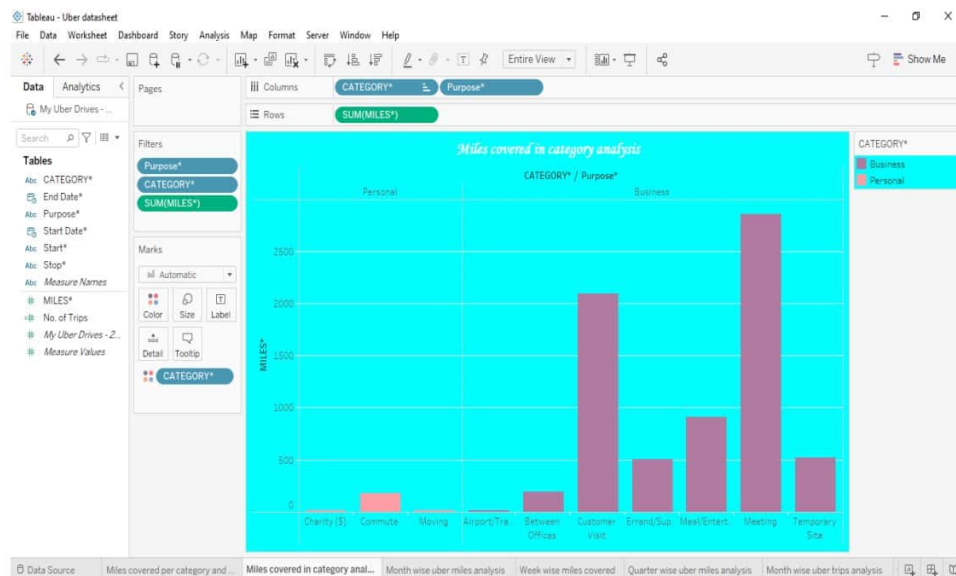
The number of scenes in a storyboard for Data-Driven insights on YouTube channels Analysis will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.





## Milestone 7: Performance Testing

### Activity 1: Utilization of filters



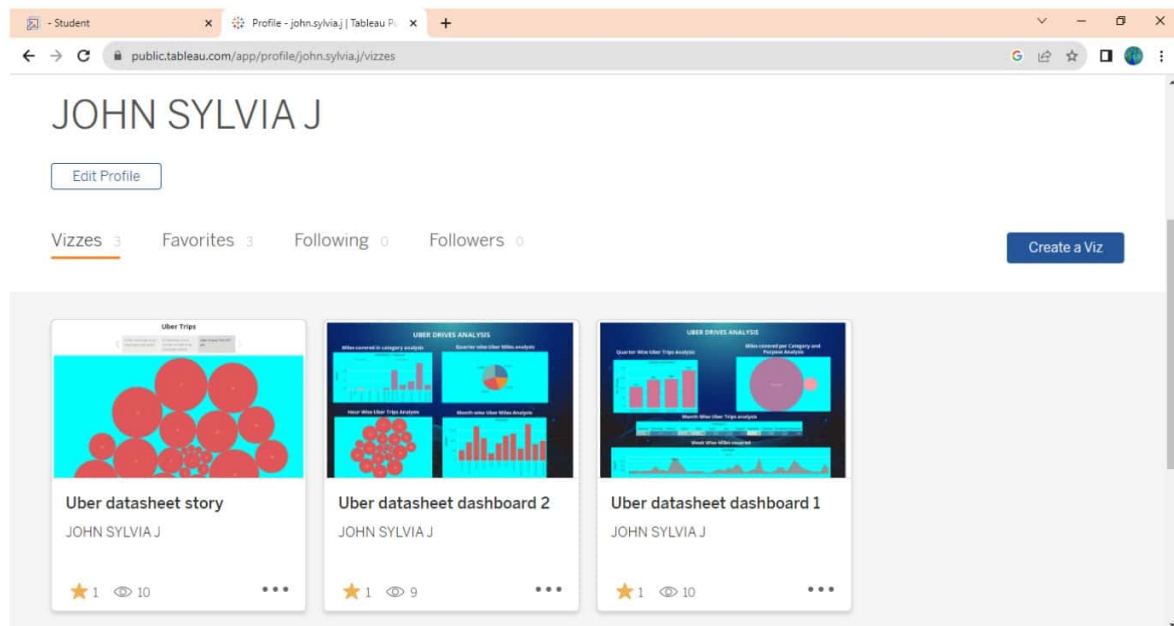
### Activity 2: No. of Visualizations/Graphs

- Bar graph showing Purpose of Uber with Miles covered.
- Bubble chart showing distribution of Miles with Category.
- Bar graph showing Quarter with Number of Trips
- Highlight Table shows Month with Number of Trips.
- Bar graph showing Month with Miles.
- Area Chart showing Week with Miles.
- Pie chart showing Quarter with Miles.

- Bubble Chart showing Hour with Number of Trips.
- Tree Map showing Distance between the Start and Stop Locations.

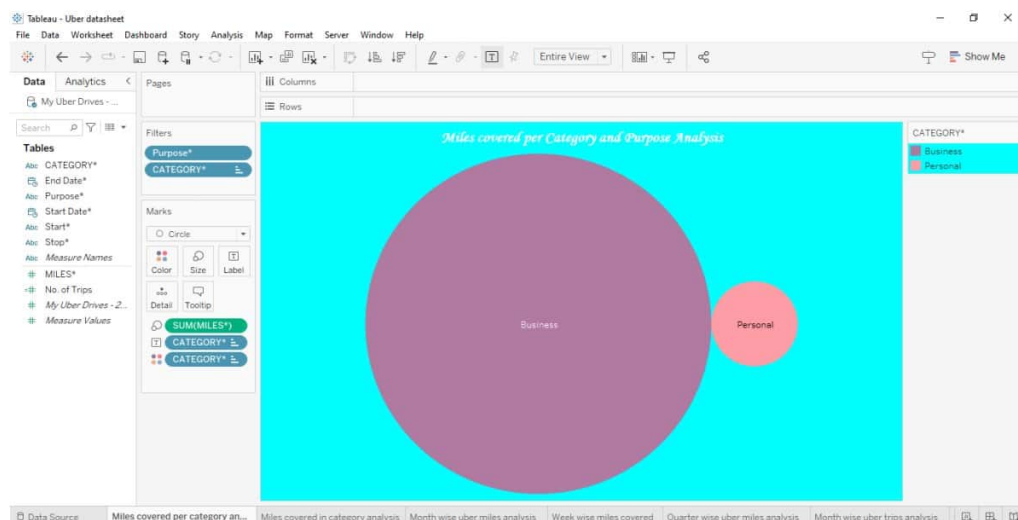
## Milestone 8: Publishing

Publishing helps us to track and monitor key performance metrics, to communicate results and progress and help a publisher to stay informed, make better decisions and communicate their performance to others. Tableau public is a website in which we publish our dashboards and story.



## 4. ADVANTAGES AND DISADVANTAGES

- This analysis helps the company to know about the no. of trips covered during hour, day, week and month in specific places so that they can know how to improve the no. of drives in specific places.





- The graph/visualization shows for which purpose and category the trips are used. For example, the above graph shows the miles covered per category and purpose analysis, especially this graph indicates that business purpose takes the more amount of space. So that drives can be increased for business purpose.
- These are just a theoretical script which has almost 99% accuracy but when it comes to practical it may have some exceptions.

## **5. APPLICATIONS**

This Uber expeditionary analysis data can be used on the Uber Company's loss and profit list so that they can improve their profit. In each graph the lowest data indicates their drawbacks, for example the chart miles covered per category and purpose analysis indicates that passengers use uber very less for their personal trips so that the company needs to concentrate more to increase the rides based on personal works of the passengers by rectifying the passengers inconvenience by receiving the passenger's comments.

## **6. CONCLUSION**

Uber is a company with a complicated history. Still, its founders had made something that was impossible; they survived sabotages, strikes, and discontents of the governments of different countries around the whole world. The necessity to provide people with good services at affordable prices is urgent nowadays. Not all people are able to use the quality they want. So, Uber opens new perspectives and possibilities.

## **7. FUTURE SCOPE**

Based on this project Uber can increase their profit. Since, Uber is a MNC it has many competitors, by increasing their profit it can give a huge growth between the other competitors. It can increase their number of drives and it will receive a huge customer satisfaction if the company receives and take response to the customers comments. The statistics of uber can be improved based on this project.