

Final Project Report

1. Introduction

- 1.1. Project overviews**
- 1.2. Objectives**

2. Project Initialization and Planning Phase

- 2.1. Define Problem Statement**
- 2.2. Project Proposal (Proposed Solution)**
- 2.3. Initial Project Planning**

3. Data Collection and Preprocessing Phase

- 3.1. Data Collection Plan and Raw Data Sources Identified**
- 3.2. Data Quality Report**
- 3.3. Data Exploration and Preprocessing**

4. Data Visualization

- 4.1. Framing Business Questions**
- 4.2. Developing Visualizations**

5. Dashboard

- 5.1. Dashboard Design File**

6. Report

- 6.1. Story Design File**

7. Performance Testing

- 7.1 Utilization of Data filters**
- 7.2 No of Calculation Field**
- 7.3 No of Visualization**

8. Conclusion/Observation

9. Future Scope

10. Appendix

- 10.1. Source Code(if any)**
- 10.2. GitHub & Project Demo Link**

Project Initialization and Planning Phase

Date	16 December 2024
Team ID	17
Project Name	VoyageVista: Illuminating Insights from Uber Expeditionary
Maximum Marks	3 Marks

Define Problem Statements (Customer Problem Statement Template):

Problem Statement	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	A frequent ride-hailing user.	Book a ride quickly and conveniently during peak hours.	Rides are often unavailable, and wait times are too long.	The demand is high, and the system doesn't optimize availability well.	Frustrated and inconvenienced.
PS-2	A cost-conscious passenger.	Plan affordable travel without worrying about surge pricing.	The fares suddenly spike due to high demand or unclear pricing mechanisms	I cannot predict or manage my expenses effectively	Annoyed and anxious about ride costs
PS-3	A safety-conscious rider.	Feel secure and comfortable while using ride-hailing services.	Some drivers exhibit unprofessional behavior, or safety measures seem inadequate.	Safety is my top priority, and inconsistent standards compromise trust	Unsafe and hesitant to use the service again

PS-4	A regional user	Access reliable rides in my area, even during off-peak hours.	Ride availability and driver allocation are inconsistent in less populated areas.	The service feels unreliable outside main city hubs.	Disappointed and inconvenienced.
------	-----------------	---	---	--	----------------------------------

Initial Project Planning Template

Date	16 December 2024
Team ID	17
Project Name	VoyageVista: Illuminating Insights from Uber Expeditionary Analytics Using Tableau
Maximum Marks	4 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-1	Data Collection & Preparation	USN-1	As a data engineer, I collect Uber ride-hailing data from available sources.	3	High	Adapa Mohan Sai Yeswanth	Dec 16, 2024	Dec 23, 2024
Sprint-1	Data Collection & Preparation	USN-2	I will store the collected data in the database as a data engineer.	2	High	Adapa Mohan Sai Yeswanth	Dec 16, 2024	Dec 23, 2024
Sprint-1	Data Visualization	USN-3	As a data analyst, I will prepare ride	4	High	Adapa Mohan Sai Yeswanth	Dec 16, 2024	Dec 23, 2024

			patterns and peak usage visualizations in Tableau.					
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-2	Data Visualization	USN-4	I will create visualizations for driver and passenger behaviour analysis as a data analyst.	4	Medium	Adapa Mohan Sai Yeswanth	Dec 24, 2024	Dec 30, 2024
Sprint-2	Regional Preferences	USN-5	As a data analyst, I will explore regional trends and preferences through Tableau visualizations.	3	Medium	Adapa Mohan Sai Yeswanth	Dec 24, 2024	Dec 30, 2024

Sprint-3	Dashboard Creation	USN-6	As a UX/UI designer, I will design the interactive Tableau dashboard for users.	5	High	Adapa Mohan Sai Yeswanth	Dec 31, 2024	Jan 6, 2025
----------	--------------------	-------	---	---	------	--------------------------	--------------	-------------

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-3	Dashboard Creation	USN-7	As a web developer, I will integrate the Tableau dashboard into the webpage using Flask.	5	High	Adapa Mohan Sai Yeswanth	Dec 31, 2024	Jan 6, 2025
Sprint-4	Performance Testing	USN-8	As a tester, I will perform performance testing to ensure Tableau can handle large datasets.	4	High	Adapa Mohan Sai Yeswanth	Jan 7, 2025	Jan 13, 2025

Sprint-4	Performance Testing	USN-9	As a tester, I will evaluate the use of data filters and calculate field utilization in Tableau.	3	Medium	Adapa Mohan Sai Yeswanth	Jan 7, 2025	Jan 13, 2025
----------	---------------------	-------	--	---	--------	--------------------------	-------------	--------------

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-4	Project Documentation & Demo	USN-10	As a project manager, I will record an end-to-end project demonstration video and prepare documentation.	3	High	Adapa Mohan Sai Yeswanth	Jan 14, 2025	Jan 17, 2025

Project Initialization and Planning Phase

Date	16 March 2024
Team ID	17
Project Title	VoyageVista: Illuminating Insights from Uber Expeditionary Analytics Using Tableau
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	The primary objective of the VoyageVista project is to analyze Uber's ride-hailing data through Tableau to uncover insights regarding ride patterns, driver and passenger behaviors, peak usage times, and regional preferences. The goal is to provide actionable insights that will help Uber, drivers, and policymakers make data-driven decisions to improve service quality and optimize operations.
Scope	This project will involve: <ul style="list-style-type: none"> Collecting and analysing Uber's ride data, user feedback, and operational metrics. Visualizing ride patterns, driver and passenger behaviours, and regional trends. Creating a comprehensive Tableau dashboard to showcase these insights. Integrating the dashboard into a web application using Flask.
Problem Statement	
Description	Uber, like other ride-hailing companies, faces challenges in optimizing its service based on demand fluctuations, driver performance, and regional preferences. Currently, there is no comprehensive tool that integrates multiple data sources to provide insights into these areas effectively.
Impact	By solving this problem, Uber can optimize its operations, improve rider and driver experiences, and tailor services to regional preferences. This will lead to improved customer satisfaction, increased efficiency, and informed decision-making for policy changes or service adjustments.
Proposed Solution	
Approach	We will use Tableau to perform data analysis and create visualizations that provide insights into ride patterns, driver behavior, and regional trends. The project will: <ul style="list-style-type: none"> Extract and clean Uber's ride-hailing data.

	<ul style="list-style-type: none"> Develop interactive visualizations to represent peak ride times, demand fluctuations, and other key metrics. Create a Tableau dashboard that integrates these visualizations. Deploy the dashboard on a web application using Flask for user accessibility.
Key Features	<ul style="list-style-type: none"> Interactive Dashboards: Visual representations of ride data that are easy to interact with and explore.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU specifications, number of cores	2 x Intel i7 CPUs, 8 cores per CPU
Memory	RAM specifications	16 GB DDR4 RAM
Storage	Disk space for data, models, and logs	1 TB SSD (Solid State Drive)
Frameworks	Python frameworks	Flask (for web integration), Tableau (for data visualization)
Libraries	Additional libraries	pandas, numpy, matplotlib, SQLAlchemy, seaborn, scikit-learn.
Development Environment	IDE, version control	Jupyter Notebook (for analysis), Visual Studio Code (for development), Git (for version control).
Data		
Data	Source, size, format	<p>Uber's ride-hailing data (source: Uber dataset or internal data).</p> <p>Size: 100,000+ ride records, spanning multiple years.</p> <p>Format: CSV, JSON, SQL databases, depending on data source.</p>

Data Collection and Preprocessing Phase

Date	16 March 2024
Team ID	17
Project Title	VoyageVista: Illuminating Insights from Uber Expeditionary Analytics Using Tableau
Maximum Marks	10 Marks

Data Exploration and Preprocessing Template

Identifies data sources, assesses quality issues like missing values and duplicates, and implements resolution plans to ensure accurate and reliable analysis.

Section	Description
Data Overview	<ul style="list-style-type: none"> The dataset contains 1,156 rows and 7 columns. Columns include START_DATE*, END_DATE*, CATEGORY*, START*, STOP*, MILES*, and PURPOSE*. Purpose: Analyse Uber ride data, covering trip details, ride purpose, and distance metrics. Missing values and duplicates were identified in the dataset.
Data Cleaning	<p>Missing Values:</p> <ul style="list-style-type: none"> END_DATE*, CATEGORY*, START*, and STOP*: 1 missing value each; handled by removing the incomplete row. PURPOSE*: Significant missing entries (503 rows). Replaced missing values with "Unknown" for better analysis. <p>Duplicates:</p> <ul style="list-style-type: none"> Identified and removed duplicate entries to ensure data integrity.
Data Transformation	<ul style="list-style-type: none"> Filtering: Filtered data to include only valid entries with complete trip details. Sorting: Sorted rides by START_DATE* to establish chronological order. Calculated Columns: Added a column for trip duration by subtracting START_DATE* from END_DATE*.
Data Type Conversion	Converted START_DATE* and END_DATE* columns to datetime format for accurate time-based analysis.

Column Splitting and Merging	<p>Column Splitting:</p> <ul style="list-style-type: none"> Extracted separate date and time components from START_DATE* and END_DATE* for detailed temporal analysis.
Data Modeling	<ul style="list-style-type: none"> Defined relationships between CATEGORY*, PURPOSE*, and Route for analysis. Created measures such as total miles by category, average trip duration, and number of rides per purpose.
Save Processed Data	<p>Saved the cleaned and processed data as a CSV file for future use and visualization.</p>

Data Collection and Preprocessing Phase

Date	16 March 2024
Team ID	17
Project Title	VoyageVista: Illuminating Insights from Uber Expeditionary Analytics Using Tableau
Maximum Marks	3 Marks

Data Quality Report Template

The Data Quality Report Template will summarize data quality issues from the selected source, including severity levels and resolution plans. It will aid in systematically identifying and rectifying data discrepancies.

Data Source	Data Quality Issue	Severity	Resolution Plan
My Uber Drives - 2016	Duplicate entries in the dataset	Moderate	Identify duplicates based on all columns and remove them to ensure accurate data representation.
My Uber Drives - 2016	Missing values in END_DATE*, CATEGORY*, START*, and STOP* columns	Low	Remove the row with missing values as it has minimal impact on overall data integrity.
My Uber Drives - 2016	Significant missing values in the PURPOSE* column (503 rows).	High	Replace missing values with "Unknown" to preserve the rows while maintaining clarity for analysis.
My Uber Drives - 2016	Incorrect data types for START_DATE* and END_DATE*.	Moderate	Convert START_DATE* and END_DATE* columns to datetime format for accurate time-based analysis.
My Uber Drives - 2016	Unnecessary columns or poorly formatted data.	Low	Combine START* and STOP* into a "Route" column for better clarity. Split date and time if needed.
My Uber Drives - 2016	Outliers in the MILES* column (e.g., unusually high or zero values).	Moderate	Use statistical techniques to detect outliers. Validate extreme values and handle them appropriately.

Data Collection and Preprocessing Phase

Date	16 March 2024
Team ID	17
Project Title	VoyageVista: Illuminating Insights from Uber Expeditionary Analytics Using Tableau
Maximum Marks	2 Marks

Data Collection Plan & Raw Data Sources Identification Template

Elevate your data strategy with the Data Collection plan and the Raw Data Sources report, ensuring meticulous data curation and integrity for informed decision-making in every analysis and decision-making endeavor.

Data Collection Plan Template

Section	Description
Project Overview	To analyze Uber's ride-hailing data and uncover actionable insights into ride patterns, user behaviors, and regional preferences, enabling optimized operations, improved service quality, and strategic decision-making.
Data Collection Plan	Data Sources: <ol style="list-style-type: none">1. Uber ride logs2. User feedback data3. Operational metrics (e.g., miles traveled, ride durations, and trip purposes)
Raw Data Sources Identified	My Uber Drives - 2016 <ul style="list-style-type: none">• This dataset contains detailed Uber ride logs, including trip start and end times, ride categories (Business/Personal), starting and stopping locations, miles traveled, and the purpose of each ride.

Raw Data Sources Template

Source Name	Description	Location/URL	Format	Size	Access Permission
My Uber Drives - 2016	Contains Uber ride details such as start and end times, trip categories	https://www.kaggle.com/code/mohamed08/exploratory-data-analysis-for-uber-trips/input	CSV	63 KB	Public

Business Question and Visualization Report

Date	16 December 2024
Team ID	17
Project Name	VoyageVista: Illuminating Insights from Uber
Maximum Marks	3 Marks

Visualization development refers to creating graphical data representations to facilitate understanding, analysis, and decision-making. The goal is to transform complex datasets into visual formats that are easy to interpret, enabling users to gain insights and make informed decisions. Visualization development involves selecting appropriate visual elements, designing layouts, and using interactive features to enhance the user experience. This process is commonly associated with data visualization tools and platforms, and it plays a crucial role in business intelligence, analytics, and reporting.

Business Questions and Visualisation

The process involves defining specific business questions to guide the creation of meaningful and actionable visualizations in Tableau. Well-framed questions help identify key metrics, select relevant data, and build visualizations that provide insights.

1. What are the peak ride usage times throughout the day?

- **Visualization:** Line chart showing the number of rides per hour of the day.
- **Insights:** Identifies peak hours to help optimize driver deployment and pricing strategies.

2. How does ride demand vary across days of the week?

- **Visualization:** Bar chart showing total rides per day of the week.
- **Insights:** Highlights the busiest and least busy days, assisting in weekly planning and resource allocation.

3. What is the distribution of ride categories (Business vs. Personal)?

- **Visualization:** Pie chart showing the proportion of business and personal rides.
- **Insights:** Provides insights into user preferences and helps customize services for different customer segments.

4. Which routes are the most popular?

- **Visualization:** Bar chart listing the top 10 routes (Start to Stop locations) based on the number of rides.
- **Insights:** Identifies frequently travelled routes to optimize operations and targeted promotions.

5. How do ride purposes vary by category?

- **Visualization:** Stacked bar chart showing ride purposes (e.g., Meetings, Errands) split by Business and Personal categories.
- **Insights:** Offers insights into user behaviour for different ride purposes, helping tailor services accordingly.

6. How do trip durations vary across regions?

- **Visualization:** Map visualization displaying average trip durations by region or city.
- **Insights:** Helps identify regions with high travel times, aiding in improving traffic route suggestions.

7. What is the trend in total miles travelled over time?

- **Visualization:** Line chart showing total miles travelled by month.
- **Insights:** Helps understand trends in ride activity and whether overall demand is increasing or decreasing.

8. How does customer feedback (if available) correlate with ride performance?

- **Visualization:** Scatter plot comparing feedback scores with ride durations or other metrics.
- **Insights:** Identifies factors contributing to high or low customer satisfaction, enabling targeted improvements.

Dashboard Design

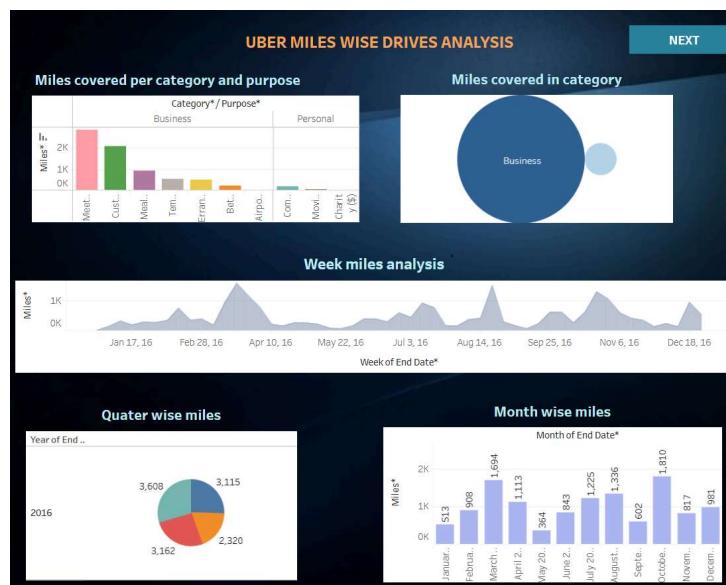
Date	31 December 2024
Team ID	17
Project Name	VoyageVista: Illuminating Insights from
Maximum Marks	3 Marks

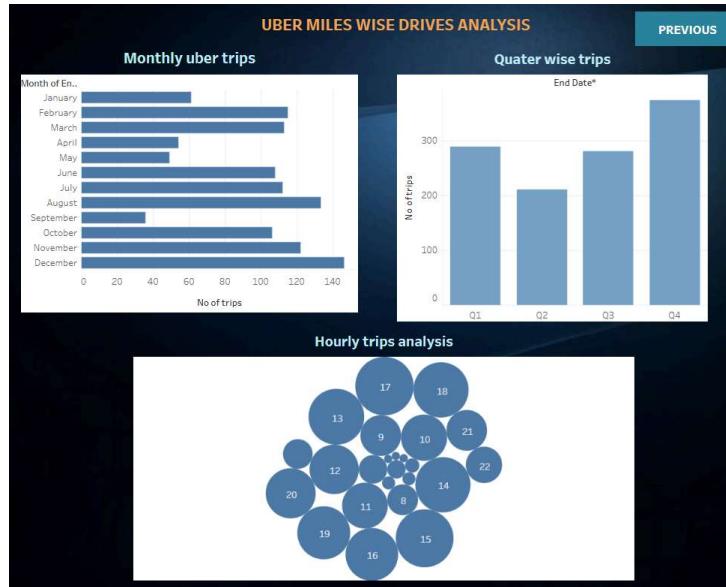
Creating an effective dashboard involves thoughtful design to ensure that the presented information is clear, relevant, and easily understandable for the intended audience. Here are some key principles and best practices for dashboard design.

Activity 1: Interactive and visually appealing dashboards

Creating interactive and visually appealing dashboards involves a combination of thoughtful design, effective use of visual elements, and the incorporation of interactive features. Here are some tips to help you design dashboards that are both visually appealing and engaging for users so take care of below points

1. Clear and Intuitive Layout
2. Use Appropriate Visualizations
3. Colour and Theming
4. Interactive Filters and Slicers
5. Drill-Down Capabilities
6. Responsive Design
7. Custom Visuals and Icons
8. Use of Infographics





Here are five potential outcomes from the dashboard image provided:

The dashboard titled "UBER MILES WISE DRIVES ANALYSIS" presents key insights into Uber ride patterns, miles covered, and trip distributions. Below are the key takeaways:

1. Miles Covered Analysis

- Business vs. Personal Usage: The majority of miles covered fall under the *Business* category, indicating that Uber rides are predominantly used for work-related purposes.
- Miles by Category and Purpose: Work-related trips, client meetings, and team outings cover the highest mileage, whereas personal trips have minimal miles covered.
- Trend Over Time: The weekly miles analysis suggests periodic spikes, indicating fluctuating demand possibly due to events, business travel cycles, or seasonal factors.

2. Trip Analysis by Time Intervals

- Monthly Trip Distribution: The highest number of trips occurred in *September*, suggesting increased ride activity during this period, possibly due to work resumption after vacations.
- Quarterly Trends: Q4 (October–December) recorded the highest number of trips, indicating a significant year-end increase in travel demand, potentially due to holiday or business-related travel.
- Hourly Trips Distribution: Peak trip hours appear to be spread across various times of the day, but high activity in evening or morning hours could indicate commuting trends.

3. Seasonal Trends and Operational Insights

- High Business Travel Demand: Since a significant number of rides fall under the business category, Uber could consider targeted promotions or corporate ride packages.
- Potential Surge Pricing Windows: Identifying peak hours and high-demand months allows Uber to optimize surge pricing strategies.
- Regional Analysis Possibility: While the dashboard doesn't explicitly showcase geographic distribution, integrating location-based insights could further refine operational decisions.

Activity 2

Publish Dashboard on Tableau Public and Paste the Dashboard Public link below:

https://public.tableau.com/views/Uber_project_dash_board2/TripsWiseDashboard?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Story

Date	16 December 2024
Team ID	17
Project Name	VoyageVista: Illuminating Insights from Uber
Maximum Marks	3 Marks

By using stories in Tableau, you can effectively communicate complex data in a way that is both interactive and engaging, making it easier for the audience to follow along and understand the insights. It's a tool for **data storytelling**, allowing you to present insights in a cohesive, engaging way that takes viewers through a logical progression of findings or analyses.

In Tableau, **Story** is a feature that allows you to create a sequence of dashboards, visualizations, and text to present data insights in a cohesive and narrative-driven way. It's like a slideshow within Tableau that guides the audience through a series of data points, helping them understand key insights, trends, or outcomes of your analysis.



Observations: -

1. Miles Covered Analysis

- **Business vs. Personal Usage:**

- **Observation:** The majority of miles covered are categorized as business-related trips. This suggests that Uber is a preferred option for professionals or corporate clients.
- **Detailed Implication:** This trend indicates that Uber is a significant player in the corporate transportation space. It could present an opportunity for Uber to develop corporate-focused products such as subscription models, business accounts, and partnerships with organizations to offer group discounts for employees. Additionally, this can shape Uber's branding and marketing toward professionals and business travelers, emphasizing convenience, reliability, and productivity (e.g., rides that allow users to continue working while traveling).

- **Miles by Category and Purpose:**

- **Observation:** Work-related activities like client meetings, conferences, and team outings contribute to the highest mileage, while personal trips make up a smaller portion of the miles.
- **Detailed Implication:** Uber could further capitalize on the trend of business-centric rides by crafting specialized services that cater to professional needs. For example, offering vehicles equipped with amenities conducive to work (Wi-Fi, charging stations, quiet cabins) could make Uber the preferred choice for business riders. Uber could also introduce features like meeting point booking or premium vehicles designed for corporate clients.

- **Trend Over Time:**

- **Observation:** The weekly miles analysis shows periodic spikes in the data, which may indicate fluctuating demand driven by certain events, business cycles, or seasonal factors.
- **Detailed Implication:** Uber can identify specific weeks or seasons where ride demand peaks (e.g., during conferences, holidays, or fiscal year-end) and plan accordingly. This could involve adjusting surge pricing models, allocating more drivers to high-demand times, or launching special promotional campaigns (e.g., "Conference Week Rides"). Understanding the factors behind these peaks can help Uber optimize its pricing and resource management.

2. Trip Analysis by Time Intervals

- **Monthly Trip Distribution:**

- **Observation:** The highest number of trips occurred in September, suggesting a post-vacation travel surge, likely tied to work resumption after summer breaks.
- **Detailed Implication:** Uber could take advantage of the post-vacation rush by introducing targeted marketing campaigns aimed at professionals returning to work. Special promotions such as "Back to Work" discounts or loyalty programs could incentivize more frequent usage during this time. Offering faster, more reliable rides during the transition back to work could also boost customer loyalty.

- **Quarterly Trends:**

- **Observation:** The highest number of trips was recorded in Q4 (October–December), indicating a seasonal increase in demand, possibly due to holidays, end-of-year business travel, or special events.
- **Detailed Implication:** This seasonal surge presents a prime opportunity for Uber to introduce holiday-specific promotions, such as discounted rides for holiday shoppers or business travelers during corporate events. Uber could also consider adjusting fleet availability during this period to ensure there are enough vehicles to meet demand without significant wait times. Additionally, promotional partnerships with event organizers or businesses during Q4 could further capitalize on increased activity.

- **Hourly Trips Distribution:**

- **Observation:** The highest activity levels occur in the early morning and evening, which likely correlate with commuting times.
- **Detailed Implication:** Uber can fine-tune its fleet management and driver dispatch systems to meet peak commuter demand. This could involve setting up incentives for drivers to be available during high-demand hours or introducing commuter-specific services like dedicated "express" rides that focus on getting users to work efficiently. Uber could also consider creating commuter packages offering lower fares during the peak commute hours to attract a steady stream of customers.

3. Seasonal Trends and Operational Insights

- **High Business Travel Demand:**

- **Observation:** The high volume of business-related rides suggests that Uber is not only a commuter service but also heavily used for business purposes, such as meetings and travel between business locations.
- **Detailed Implication:** Uber has a clear opportunity to expand its corporate partnerships. Offering premium services for corporate users, such as priority bookings, special vehicle options, and VIP customer support, could strengthen Uber's presence in the corporate sector. Subscription models that cater to regular business users, offering set monthly pricing or bundled rides for specific business categories, could enhance user retention. Furthermore, businesses could leverage Uber's data for tracking employee travel, ensuring they are paying for necessary and efficient transportation.

- **Potential Surge Pricing Windows:**

- **Observation:** The data reveals distinct windows of peak demand, which could be capitalized on for surge pricing and adjusting resource allocation.
- **Detailed Implication:** Uber can optimize its surge pricing strategy by closely monitoring these peak periods. For example, identifying patterns in the increase of ride demand during certain times of the day or year can enable Uber to implement dynamic pricing to maximize revenue during high-traffic periods, such as business trips or major events. However, careful implementation is necessary to avoid alienating customers by offering more competitive pricing during periods of peak demand, while ensuring that Uber drivers are adequately compensated.

- **Regional Analysis Possibility:**
 - **Observation:** The dashboard does not currently display geographic data, but the integration of regional insights could enhance the operational efficiency of Uber services.
 - **Detailed Implication:** If Uber integrates geographic insights into the analysis, it could identify regional trends such as demand hotspots, areas with insufficient ride coverage, or regions with a higher concentration of business trips. This would allow Uber to strategically place drivers, optimize route planning, and provide better service to areas with consistently high demand. Additionally, knowing specific regional trends could help Uber to tailor its marketing efforts and improve customer experience in different locations, such as offering city-specific discounts or incentives.

Activity 2:

Publish Story on Tableau Public and Paste Public link below

https://public.tableau.com/views/Uber_project_dash_board2/TripsWiseDashboard?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

Conclusion

The "UBER MILES WISE DRIVES ANALYSIS" dashboard provides valuable insights into ride patterns, trip distribution, and customer behavior. These findings underline Uber's strong presence in the business travel segment and highlight opportunities for growth in key operational areas.

1. **Business Focus:** The predominance of business-related trips signals the need for tailored solutions, such as corporate ride packages, subscription models, and premium services, to cater to professionals and corporate clients.
2. **Seasonal and Temporal Trends:**
 - The high demand in Q4 and September offers a strategic opportunity for targeted marketing campaigns and optimized resource allocation.
 - Peak hours during mornings and evenings align with commuting patterns, enabling Uber to focus on dynamic fleet management and commuter-specific incentives.
3. **Operational Optimization:** The identification of peak demand periods provides a basis for implementing surge pricing and better managing driver availability. Integrating geographic data could further refine regional strategies, enabling Uber to offer more efficient and localized services.
4. **Customer Engagement and Retention:** By leveraging these insights, Uber can strengthen customer loyalty through promotions, tailored discounts, and improved service quality, particularly during high-demand periods.
5. **Revenue Maximization:** The data highlights key windows of opportunity—such as business travel surges and seasonal peaks—where Uber can strategically optimize pricing and capitalize on increased demand.

Appendix

- Source Code

HTML CODE

```
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Uber Drives</title>
    <style type="text/css">
        *{
            text-decoration: none;
        }
        .navbar{
            background: black; font-family: calibri; padding-right: 15px; padding-left: 15px;
        }
        .navdiv{
            display: flex; align-items: center; justify-content: space-between;
        }
        .logo a{
            color: white; font-size: 35px; font-weight: 600;
        }
        li{
            list-style: none; display: inline-block;
        }
        li a{
            color: white; font-size: 18px; font-weight: bold; margin-right: 25px;
        }
        button{
            background-color: rgb(194, 82, 13); margin-left: 20px; border-radius: 20px; padding: 20px; width: 100px; margin-right: 20px;
        }
        button a{
            color: white; font-weight: bold; font-size: 10px;
        }

        /* CSS for Hero Section */
        #hero {
            display: flex;
            align-items: center;
            justify-content: center;
            height: 100vh;
            background: linear-gradient(to bottom, #0a0a0a, #333333);
            color: white;
            text-align: center;
        }
        #hero h1 {
            font-size: 48px;
            font-weight: bold;
            margin-bottom: 10px;
        }
        #hero h1 span {
            color: rgb(194, 82, 13);
        }
        #hero h2 {
            font-size: 24px;
        }
```

```
    font-weight: 300;

}

.container {
    max-width: 1200px;
    margin: 0 auto;
    padding: 0 15px;
}

.row {
    display: flex;
    justify-content: center;
    flex-wrap: wrap;
}

.col-xl-6,
.col-lg-8 {
    flex: 0 0 auto;
    width: 100%;
    max-width: 600px;
}

#features {
    background: #f9f9f9;
    padding: 50px 20px;
}

#features .container {
    max-width: 1200px;
    margin: 0 auto;
    padding: 10px 20px;
}

#features img {
    max-width: 100%;
    height: auto;
    border-radius: 10px;
    margin-left: -15px;
    float: left;
    transition: 0.5s ease;
    display: block;
    flex: 1;
    margin-right: 40px;
    overflow: hidden;
}

#features .content {
    text-align: left;
    padding: 20px;
}

#features .info-item {
    margin-bottom: 20px;
}

#features .info-item h4 {
    color: #ffc107;
    font-size: 1.2rem;
    margin-bottom: 10px;
}

#features .info-item p {
    font-size: 1rem;
```

```
color: #333;
line-height: 1.6;
}

#contact {
background: #f9f9f9;
padding: 50px 20px;
float: center;
}

h2 {
font-size: 2em;
font-weight: bold;
margin-bottom: 20px;
text-align: center;
}

.contact-info {
margin-left: -15px;
text-align: left;
float: left;
}

.contact-info .info-item {
margin-bottom: 30px;
text-align: left;
margin-right: 200px;
}

.contact-info p {
margin-bottom: 30px;
font-size: 1rem;
float: left;
text-align: left
}

.contact-form .form-control {
margin-bottom: 15px;
padding: 10px;
border-radius: 5px;
border: 1px solid #ddd;
}

.contact-form .btn {
background-color: #ffc107;
color: #fff;
font-weight: bold;
border: none;
padding: 10px 20px;
cursor: pointer;
}

.contact-form .btn:hover {
background-color: #e0a800;
}

</style>
```

```

</head>
<body>
    <nav class="navbar">
        <div class="navdiv">
            <div class="logo"><a href="#">Ride With Uber</a></div>
            <ul>
                <li><a class="nav-link scrolito active" href="#hero">Home</a></li>
                <li><a class="nav-link scrolito" href="#features">About</a></li>
                <li><a class="nav-link scrolito" href="#contact">Contact </a></li>
                <button><a href="/dashboard" class="get-started-btn-scrolito">Dashboard</a></button>
            </ul>
            <i class="bi bi-list mobile-nav-toggle"></i>
        </nav>
    </div>
    <section id="hero" class="d-flex align-items-center justify-content-center">
        <div class="container" data-aos="fade-up">
            <div class="row justify-content-center" data-aos="fade-up" data-aos-delay="150">
                <div class="col-xl-6 col-lg-8">
                    <h1>Uber Drives</h1>
                </div>
            </div>
        </div>
    </section>
    <section id="features" class="d-flex align-items-center justify-content-center">
        <div class="container">
            <div class="content-wrapper">
                <!-- Left Section: Uber Image -->
                <h2>Analysis of Uber Drives Data</h2>
                <div class="left">
                    
                </div>
                <!-- Right Section: Content -->
                <div class="Right">
                    <div class="info-item">
                        <h4>Data Collection:</h4>
                        <p>In this initial step, you gather relevant data from various sources. This could include collecting data from databases, spreadsheets, etc. It's important to ensure that the data collected is accurate, complete, and relevant to the analysis objective.</p>
                    </div>
                    <div class="info-item">
                        <h4>Data Cleaning and Preparation:</h4>
                        <p>Data often requires cleaning and preparation before analysis. This step involves checking for and handling missing values, removing duplicates. Data cleaning and preparation help ensure the data is in a suitable format for analysis.</p>
                    </div>
                    <div class="info-item">
                        <h4>Data Analysis:</h4>
                        <p>It involves applying various statistical techniques, mathematical models, or visualization tools to uncover patterns, trends, relationships, or insights within the data. The analysis will depend on the nature of the data and goals.</p>
                    </div>
                    <div class="info-item">
                        <h4>Create Dashboards and Stories:</h4>
                        <p>Combine multiple worksheets into a dashboard to create a comprehensive view of your analysis. Arrange the worksheets, add titles, captions, and filters to create a coherent story. Use Tableau's storytelling capabilities to guide viewers through your analysis and present your findings in a logical and engaging manner.</p>
                    </div>
                </div>
            </div>
        </div>
    </section>

```

```

<section id="contact" class="d-flex align-items-center justify-content-center">
  <div class="container">
    <h2 class="text-start">CONTACT US</h2>
    <div class="row">
      <!-- Left Section: Location and Details -->
      <div class="col-md-6">
        <div class="contact-info">
          <div class="info-item">
            <p><strong>Location:</strong><br>
              Survey no. 91, Sundarayya Vignana Kendram,<br>
              Technical Block, 6th floor, Madhava Reddy Colony,<br>
              Gachibowli, Hyderabad, Telangana 500032
            </p>
          </div>
          <div class="info-item">
            <p><strong>Email:</strong> info@thesmartbridge.com</p>
          </div>
          <div class="info-item">
            <p><strong>Call:</strong> +91 6304320044</p>
          </div>
        </div>
      </div>
      <!-- Right Section: Contact Form -->
      <div class="col-md-6">
        <form action="#" method="post" class="contact-form">
          <div class="form-group">
            <input type="text" name="name" placeholder="Your Name" class="form-control" required>
            <input type="email" name="email" placeholder="Your Email" class="form-control" required>
          </div>
          <div class="form-group">
            <input type="text" name="subject" placeholder="Subject" class="form-control">
          </div>
          <div class="form-group">
            <textarea name="message" rows="4" placeholder="Message" class="form-control" required></textarea>
          </div>
          <button type="submit" class="btn btn-warning">Send Message</button>
        </form>
      </div>
    </div>
  </div>
</section>

</body>
</html>

```

- GitHub Link

<https://github.com/Mohan-Sai-Yeswanth/Final---Project---Report>

- Project Demo Link

https://drive.google.com/file/d/15a0UdBi7pH8Ybn_mFOQ3dvBphPId5dKK/view?usp=drive_link

