Voyage Vista: Illuminating Insights from Uber Expeditionary Analysis

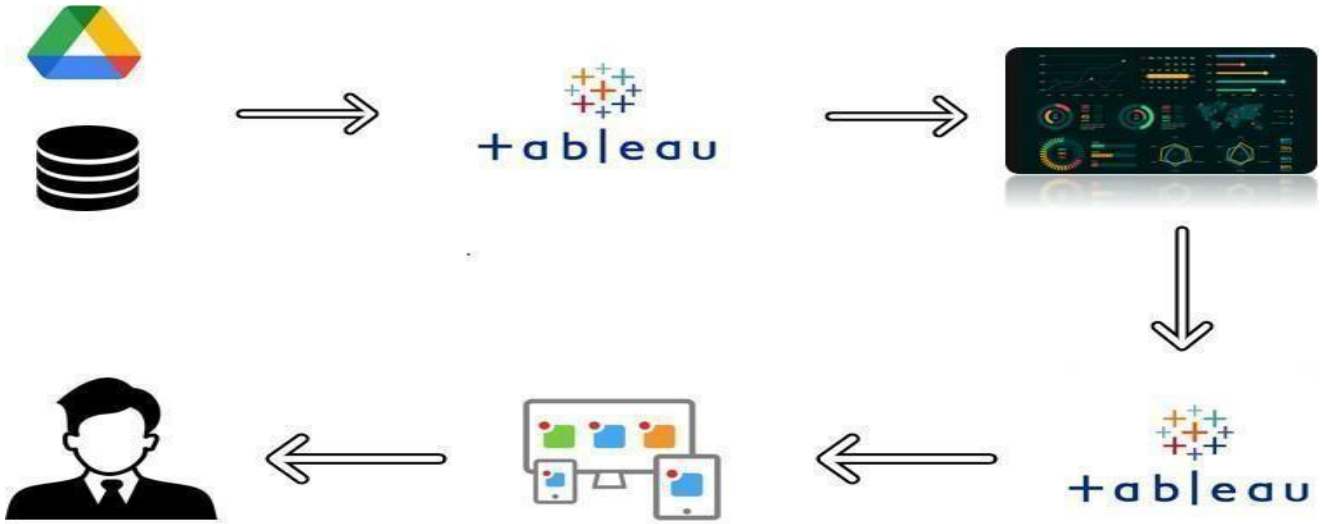
Project Based Experiential Learning Program

Voyage Vista : Illuminating Insights from Uber Expeditionary Analysis

Project Description:

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.

Technical Architecture: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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
- Data Collection & Extraction
  - 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
  - Utilization of Data Filters
  - No of Visualizations/ Graphs
- Publishing
  - Publishing Dashboard and Story on Tableau Public
- 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

Refer Project Description

Activity 2: Business requirements

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.

Activity 3: Literature Survey (Student Will Write)

A literature survey conducted by students exploring YouTube channels would typically involve researching existing studies, academic papers, and publications related to the topic

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

Please use the link to download the dataset:

https://www.kaggle.com/code/mohamed08/exploratory-data-analysis-for-uber-trips/input

Activity 1.1: Understand the data

Data contains all the meta information regarding the columns described in the CSV files. We have provided a csv file.

Column Description for Uber Drives- 2016.csv:

- START_DATE: 2 JAN 2016 – 1 JAN 2017.
- END_DATE: 2 JAN 2016 – 1 JAN 2017.
- START: Cary, New York, Durham, Downtown, Midtown, Midtown East, Houston, Gulfton, Whitebridge, Houston, Morrisville and 798 Others.
- STOP: Cary, New York, Durham, Downtown, Midtown, Midtown East, Houston, Gulfton, Whitebridge, Houston, Morrisville and 798 Others.
- Miles Covered: 0.5-1220.92
- Purpose: Meeting, Temporary Site, Customer Visit, Meal/Entertain, Errand/Supplies, Airport, Between Offices, charity, commute, moving.

Activity 3: Connect Dataset with Tableau

Explanation video link:

https://drive.google.com/file/d/1pjsP8eRr0PwPuVt4oKehaLLwpRfUFhDV/view?usp=sharing

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 our analysis.

Milestone 4: Data Visualization

Data visualization is the process of creating graphical representations of data in order to help people understand and explore 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 Visualizations

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, show distribution, and relationships between variables.

Activity 1.1: Miles Covered per Category and Purpose Analysis

Explanation video link:

https://drive.google.com/file/d/1PnqwqaTlObOvhGRca4QCbGFeKbgOW7Ji/view?usp=sharing

Activity 1.2: Miles Covered in Category Analysis

Explanation video link:

https://drive.google.com/file/d/1__WQGqcVWxi2lpx4HFdIATCLQlDRJ1Fc/view?usp=sharing

Activity 1.3: Month wise Uber Miles Analysis

Explanation video link:

https://drive.google.com/file/d/1YKwCna4MnUjOKJdbGWCIlHQEm0WFDqX5/view?usp=sharing

Activity 1.4: Week wise Uber Miles Analysis

Explanation video link:

https://drive.google.com/file/d/1zAJDlWaHTb0neFZfCl9rkr_dn9EK526V/view?usp=sharing

Activity 1.5: Quarter wise Uber Miles Analysis

Explanation video link:

https://drive.google.com/file/d/1YW1qLUoE_DtKQXA2Wd7vMBuQeO2jud81/view?usp=sharing

Activity 1.6: Month wise Uber Trips Analysis

Explanation video link:

https://drive.google.com/file/d/1ejCMFlntO-OwaFb_tV1PrW1LSATqKtg0/view?usp=sharing

Activity 1.7: Quarter wise Uber Trips Analysis

Explanation video link:

https://drive.google.com/file/d/1qsTuilI8PWFHTxo-OSEZUsxhovrwWYio/view?usp=sharing

Activity 1.8: Hour wise Uber Trips Analysis

Explanation video link:

https://drive.google.com/file/d/1a2uR0qRPl0SpXVj-FDEMlxSk1XbK5k1E/view?usp=sharing

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.

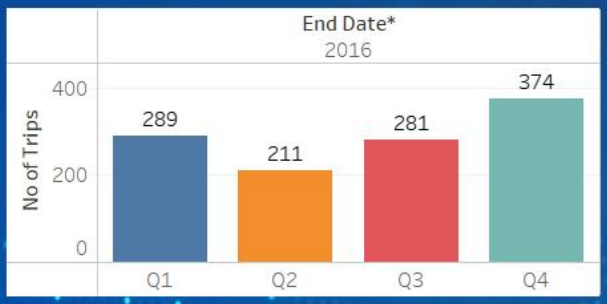
Explanation video link:

https://drive.google.com/file/d/16RPNwGAZXymkXEO3BQAkiFJK8SLkK7N5/view?usp=sharing

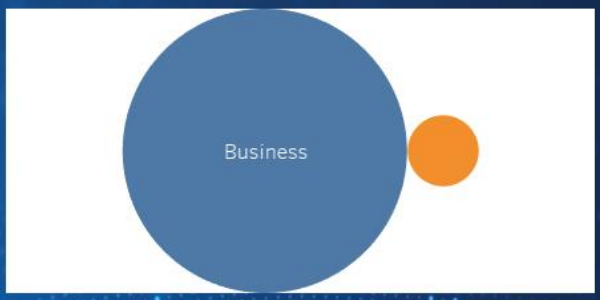
UBER DRIVES ANALYSIS

NEXT

Quarter Wise Trips

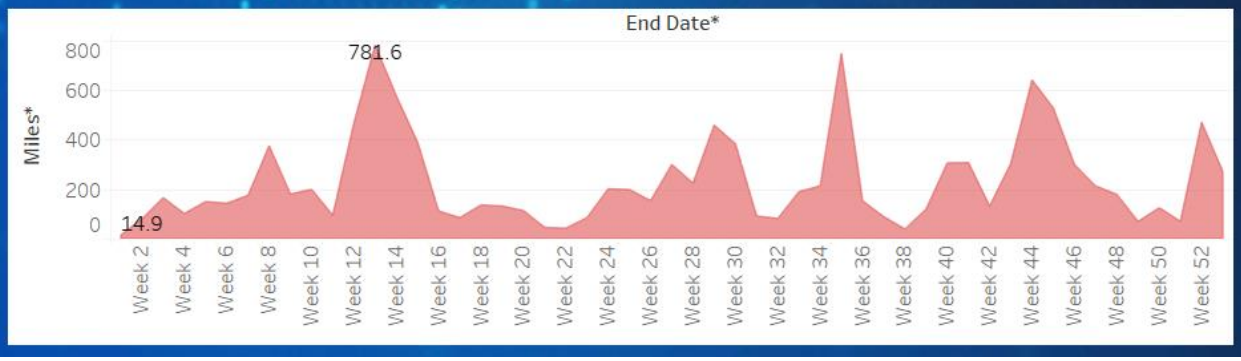


Category of Miles



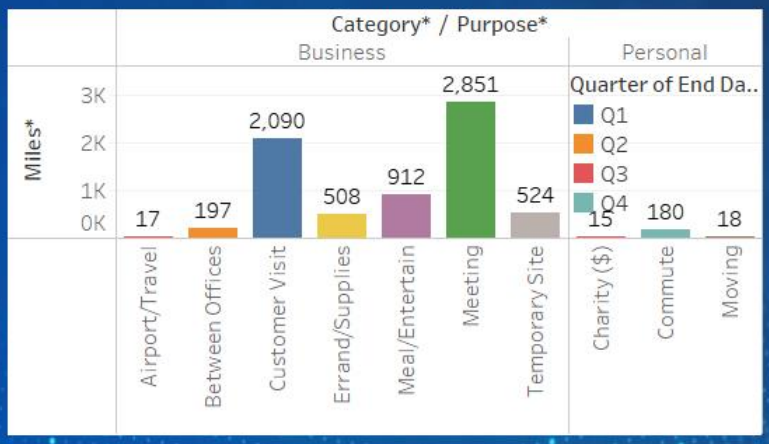
Number of Trips per Month

January 2016	Februar y 2016	March 2016	April 2016	May 2016	June 2016	July 2016	August 2016	Septem ber 20..	October 2016	Novemb er 2016	Decemb er 2016
61	115	113	54	49	108	112	133	36	106	122	146

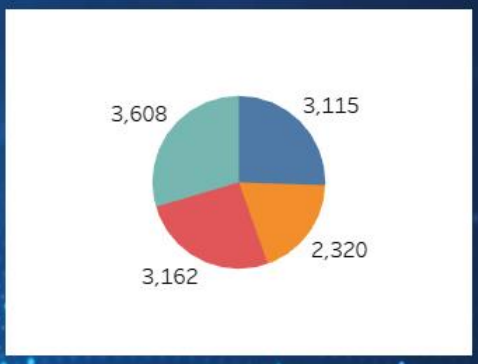


UBER DRIVES ANALYSIS

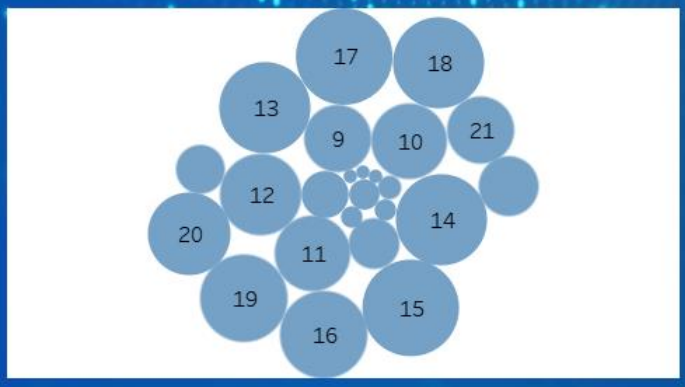
PREVIOUS



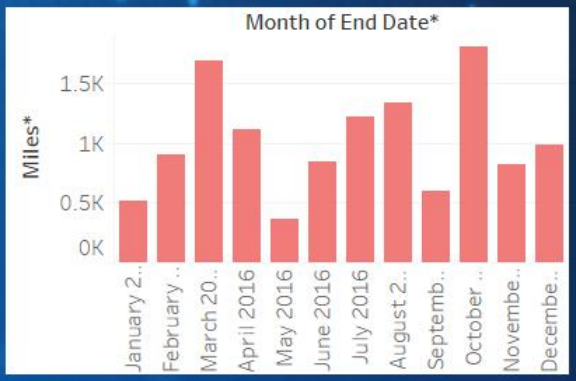
Quarter Wise Miles



Hour wise Analysis



Month Wise Miles



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.

Explanation video link:

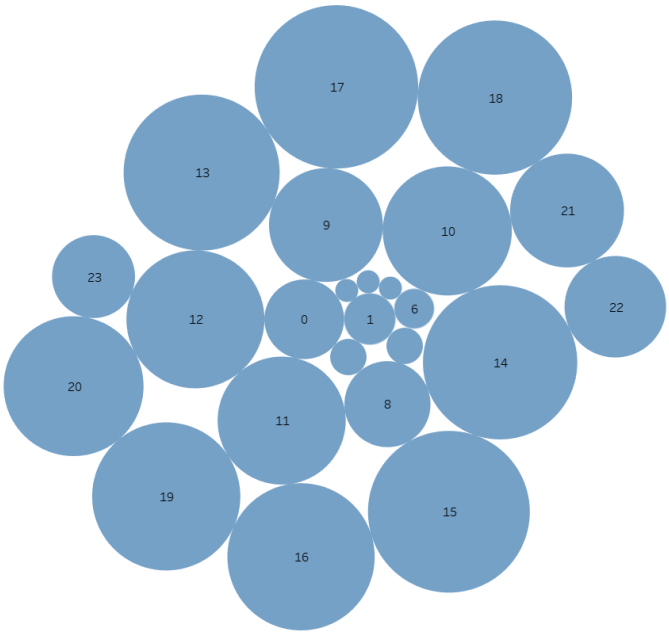
https://drive.google.com/file/d/15CDU70IE0BTqIW2cvxOiuRK3vVnWpqKU/view

In Q4 , More Uber Trips have been | In December, More Trips have | Uber is busy from 3- 7 pm

January 2016	Februar y 2016	March 2016	April 2016	May 2016	June 2016	July 2016	August 2016	Septem ber 20..	October 2016	Novemb er 2016	Decemb er 2016
61	115	113	54	49	108	112	133	36	106	122	146

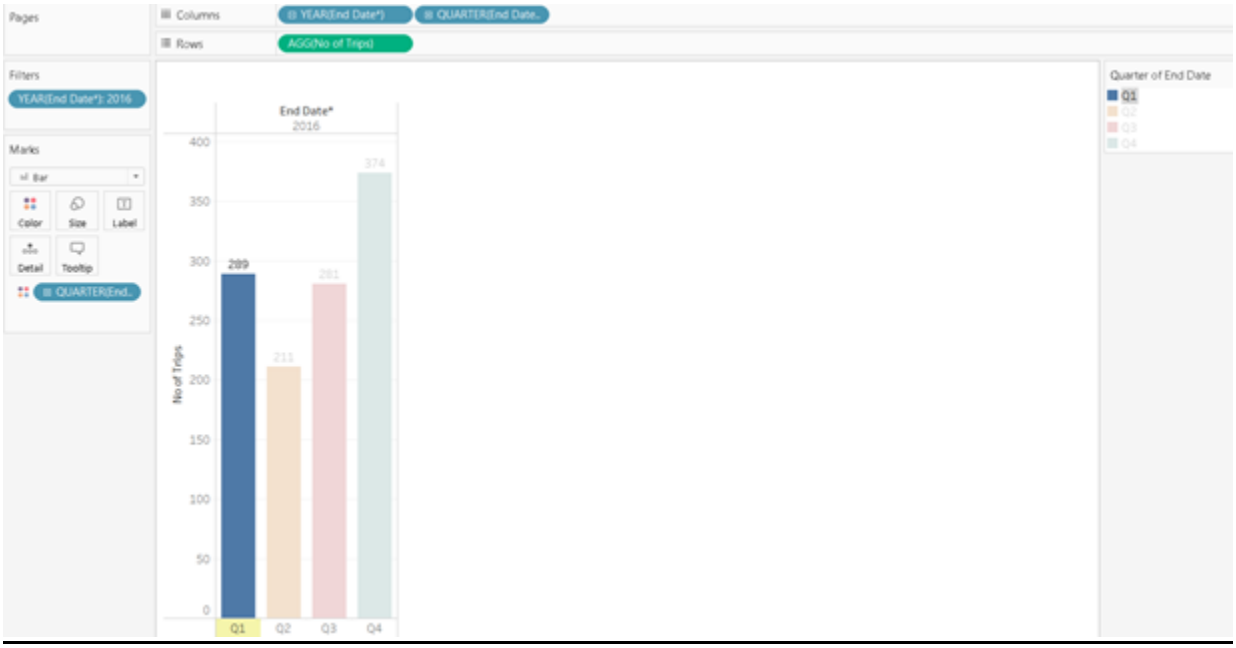
No of Trips
36 146

In Q4 , More Uber Trips have been | In December, More Trips have | Uber is busy from 3- 7 pm



Milestone 7: Performance Testing

Activity 1: Utilization of Filters



Activity 2: No of Visualizations/ Graphs

1. Bar graph showing Purpose of Uber with Miles covered.
2. Bubble chart showing distribution of Miles with Category.
3. Bar graph showing Quarter with Number of Trips

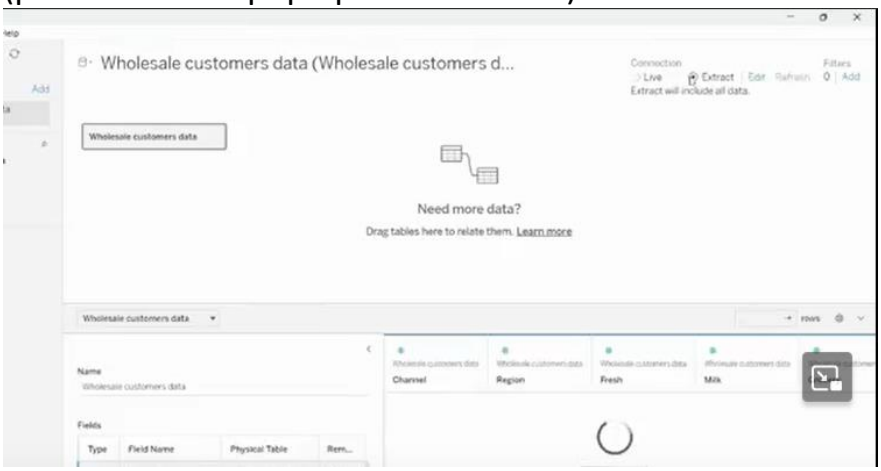
4. Highlight Table shows Month with Number of Trips.
5. Bar graph showing Month with Miles.
6. Area Chart showing Week with Miles.
7. Pie chart showing Quarter with Miles.
8. Bubble Chart showing Hour with Number of Trips.
9. Tree Map showing Distance between the Start and Stop Locations.

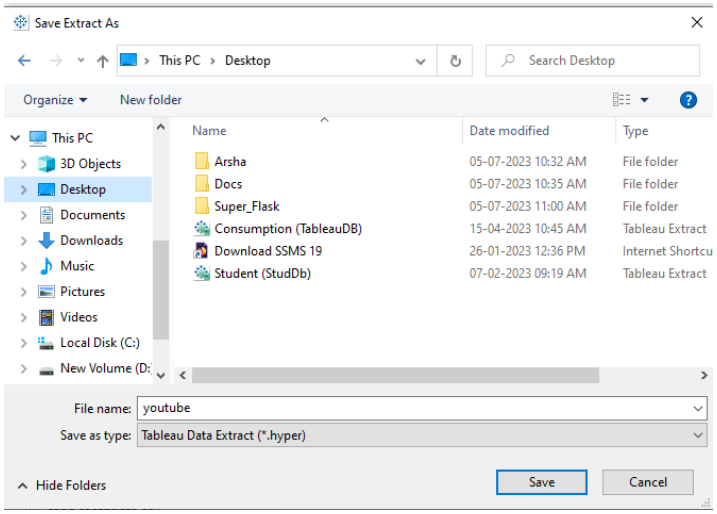
Milestone 8: Publishing

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

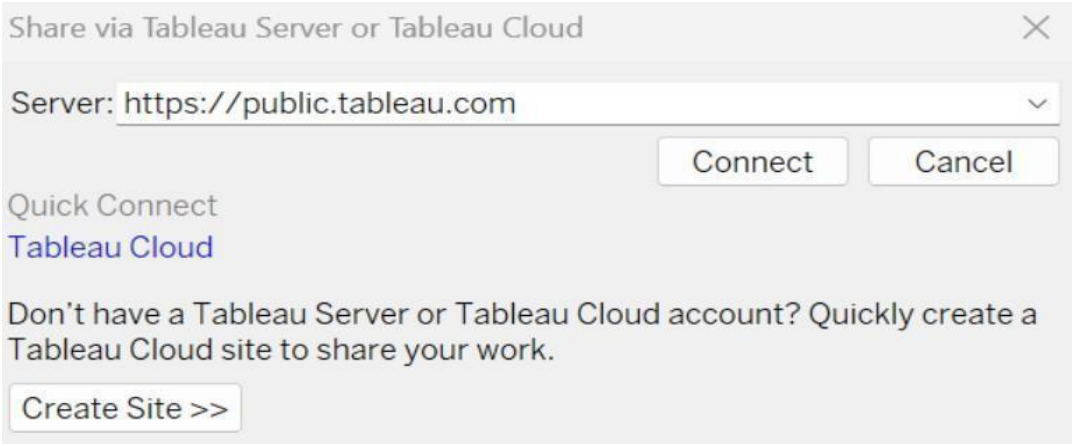
Publishing dashboard and reports to tableau public

Step 1 Go to data Source and Select Extract so that .hyper extension files are created and save it at your desktop.
(please wait for pop up of file to save)

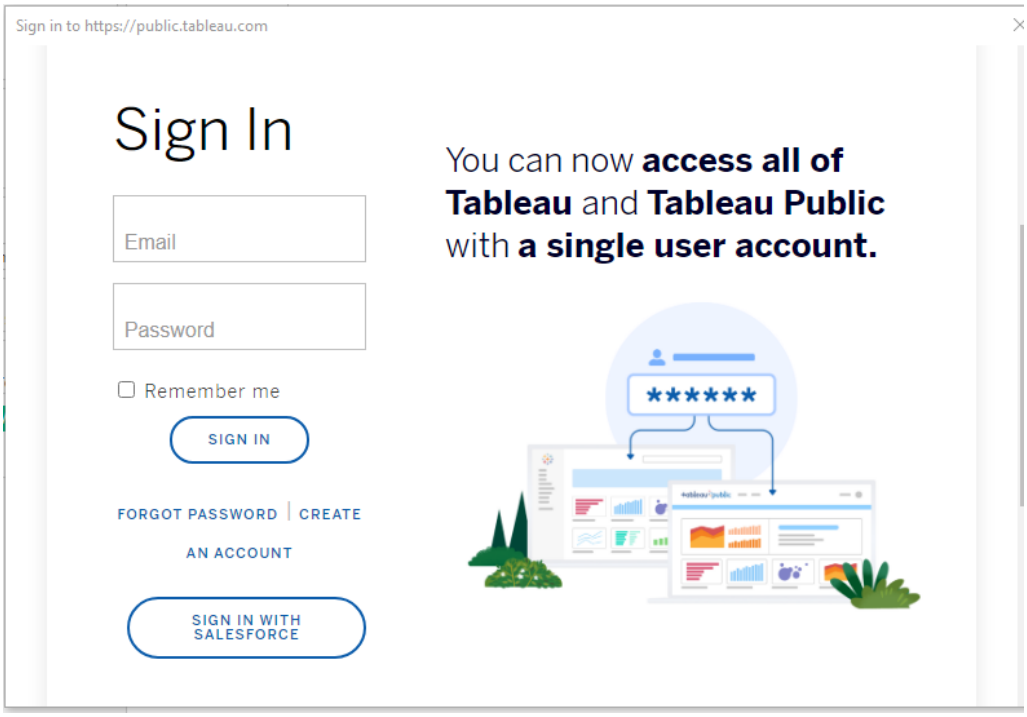




Step 2: Go to Dashboard/story, click on share button on the top ribbon



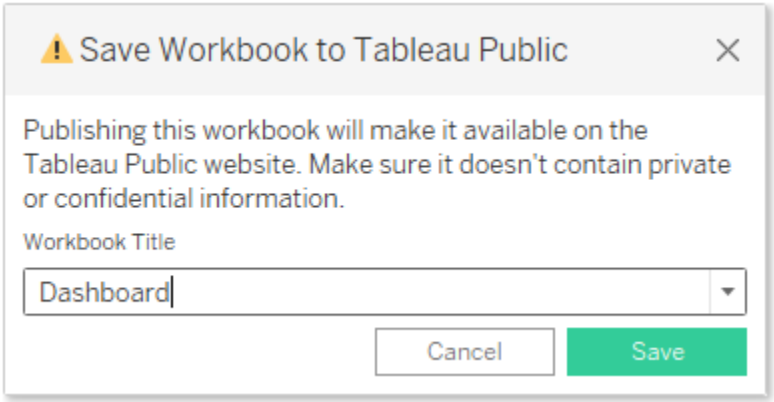
Give the server address of your tableau public account and click on connect.



Sign in to your Tableau Public account or create a new account if you don't have one. You can visit the Tableau Public website (public.tableau.com) and click on the "Sign In" or "Join" button.

In the "Tableau Public Sign In" window, enter your Tableau Public account credentials and click "Sign In."

Next, you'll need to provide a title and description for your workbook. Fill in the appropriate details in the provided field of workbook Title



Click on the "Save" button to start the publishing process. Tableau Desktop will upload your workbook to Tableau Public.

Once the upload is complete, a browser window will automatically open, displaying your published workbook on Tableau Public. Review the workbook to ensure that everything appears as expected.

So in Similar way we can also publish Story to tableau public.

ExplanationVideo1:

https://drive.google.com/file/d/1ueEaxP0Usd_LIl5JmGdhz3x_xWXSWFV8/view

?usp=sharing

Milestone 9: Project Demonstration & Documentation

Below mentioned deliverables to be submitted along with other deliverables.

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

Activity 2: Project Documentation-Step by step project development procedure

Create a document as per the template provided.