

DOCUMENTATION OF

DATA ANALYSIS.

 *A Comprehensive Analysis of
Financial Performance: Insights from a
Leading Banks*

COMPLETED BY:

P. JANITA

**T. QUEEN MACLINE
ANGEL**

J. YOGESH

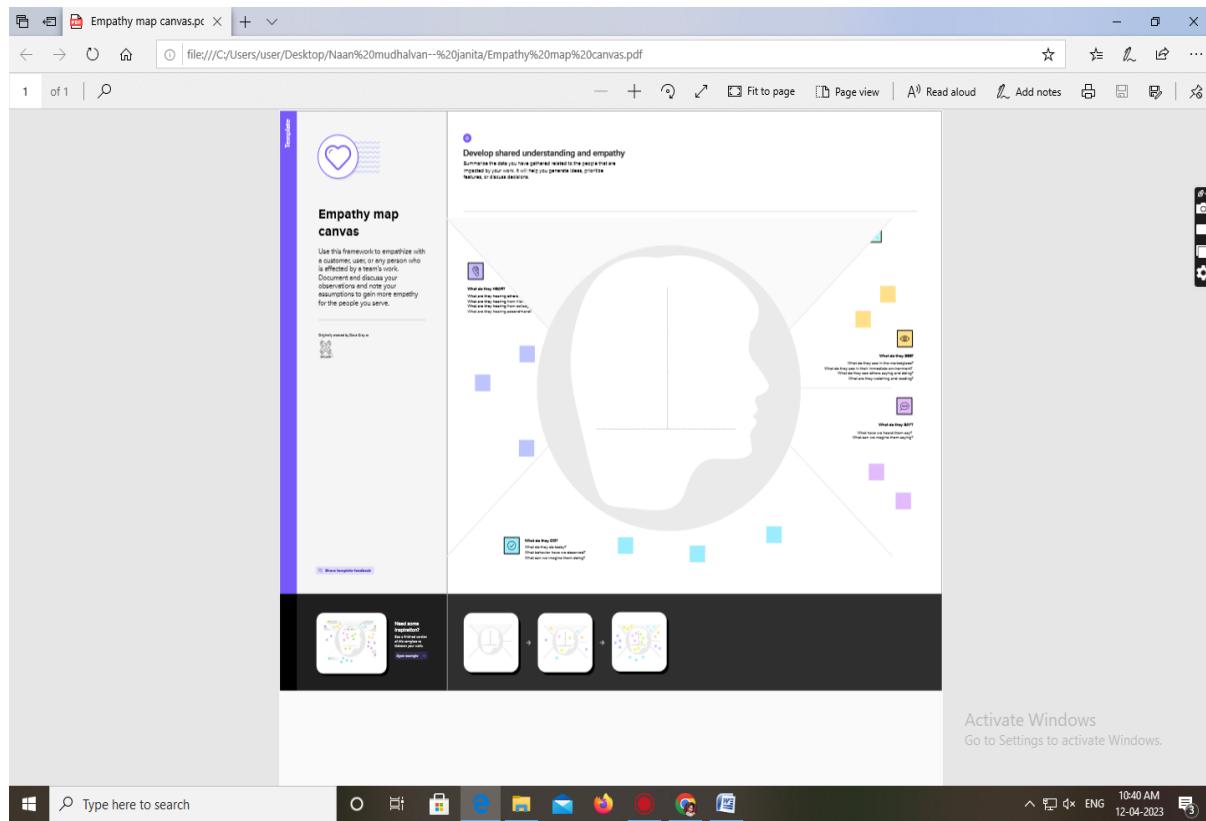
U. ANTHONY RUBAN

A COMPREHENSIVE ANALYSIS OF FINANCIAL PERFORMANCE: INSIGHTS FROM A LEADING BANKS

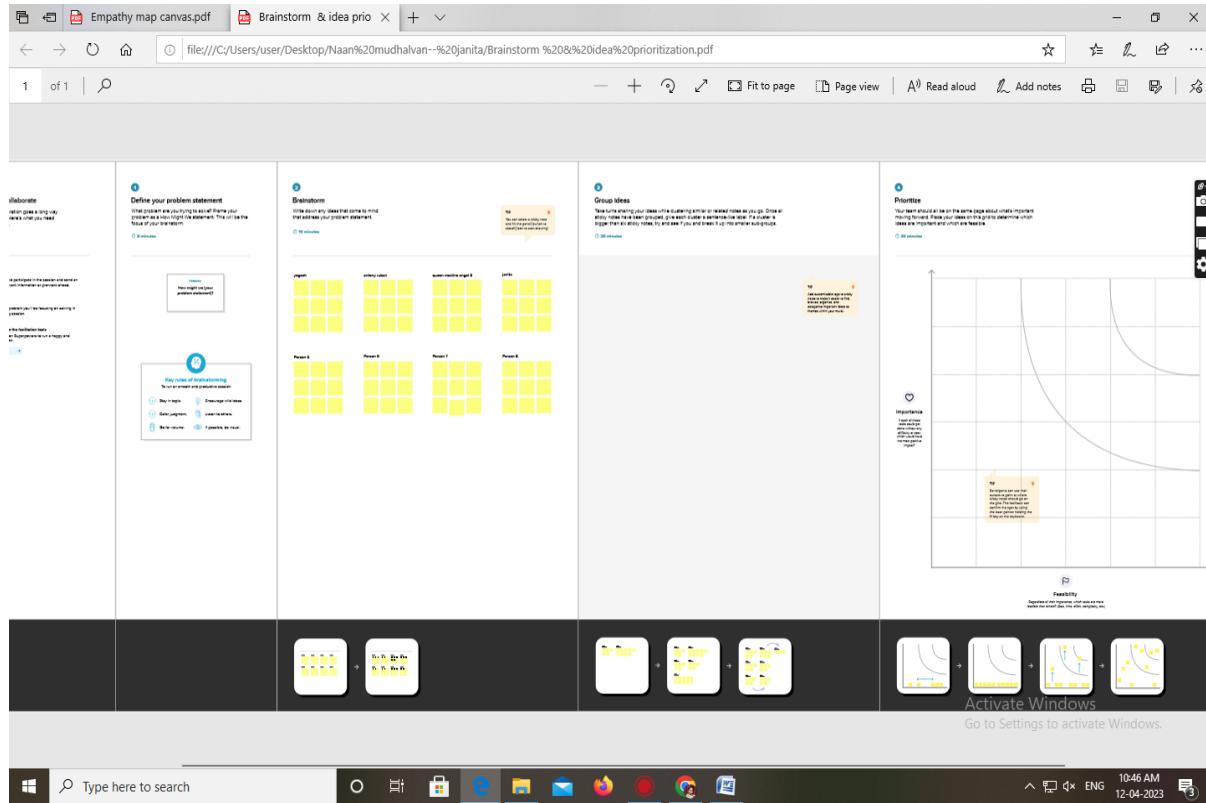
The banking industry world-wide is being transformed. The global forces for change include technological innovation, the deregulation of financial services at the national level and opening-up to international competition; and - equally important - changes in corporate behavior, such as growing disintermediation and increased emphasis on shareholder value.

In this project we are trying to analysis the bank related data and able to extract some insights from the data using Business Intelligence tools. To Extract the Insights from the data and put the data in the form of visualizations, Dashboards and Story we employed Tableau tool.

EMPATHY MAP



IDEATION & BRAINSTORMING MAP



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
- Storing Data in DB
- Perform SQL Operations
- Connect DB 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:** -

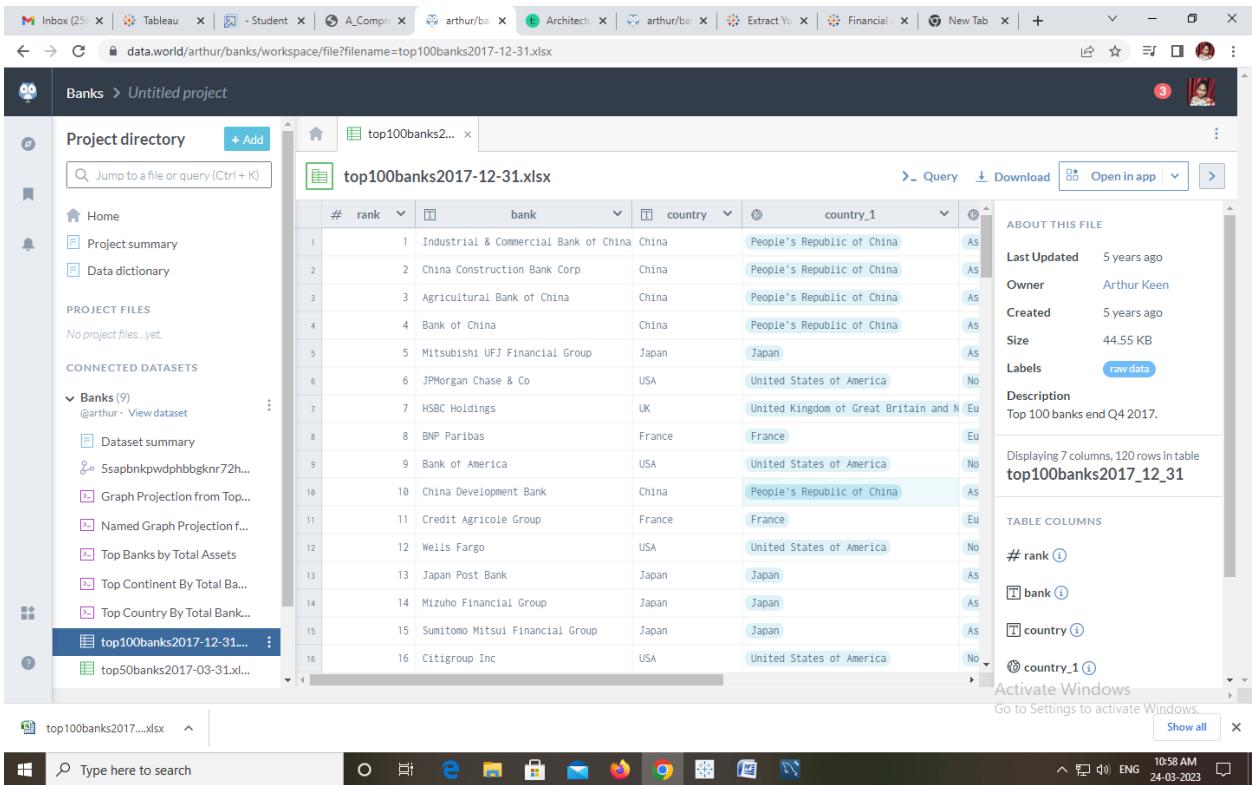
- Record explanation Video for project end to end solution
- Project Documentation-Step by step project development procedure

MILESTONE 1

Data Collection & Extraction from Database

- ACTIVITY 1:

Downloading the dataset.



The screenshot shows a web browser window with multiple tabs open. The active tab displays a dataset titled "top100banks2017-12-31.xlsx" in a spreadsheet application. The left sidebar shows a project directory with a "Banks" section containing various datasets like "Dataset summary", "Graph Projection from Top...", and "Top Banks by Total Assets". The main view shows a table with columns: #, rank, bank, country, and country_1. The data includes rows for Industrial & Commercial Bank of China, China Construction Bank Corp, Agricultural Bank of China, Bank of China, Mitsubishi UFJ Financial Group, JPMorgan Chase & Co, HSBC Holdings, BNP Paribas, Bank of America, China Development Bank, Credit Agricole Group, Wells Fargo, Japan Post Bank, Mizuho Financial Group, Sumitomo Mitsui Financial Group, and Citigroup Inc. The right side of the screen shows "ABOUT THIS FILE" details such as Last Updated (5 years ago), Owner (Arthur Keen), Created (5 years ago), Size (44.55 KB), Labels (raw data), and Description (Top 100 banks end Q4 2017). Below the table, it says "Displaying 7 columns, 120 rows in table top100banks2017_12_31". The bottom of the screen shows the Windows taskbar with the search bar containing "top100banks2017....xlsx" and various pinned icons.

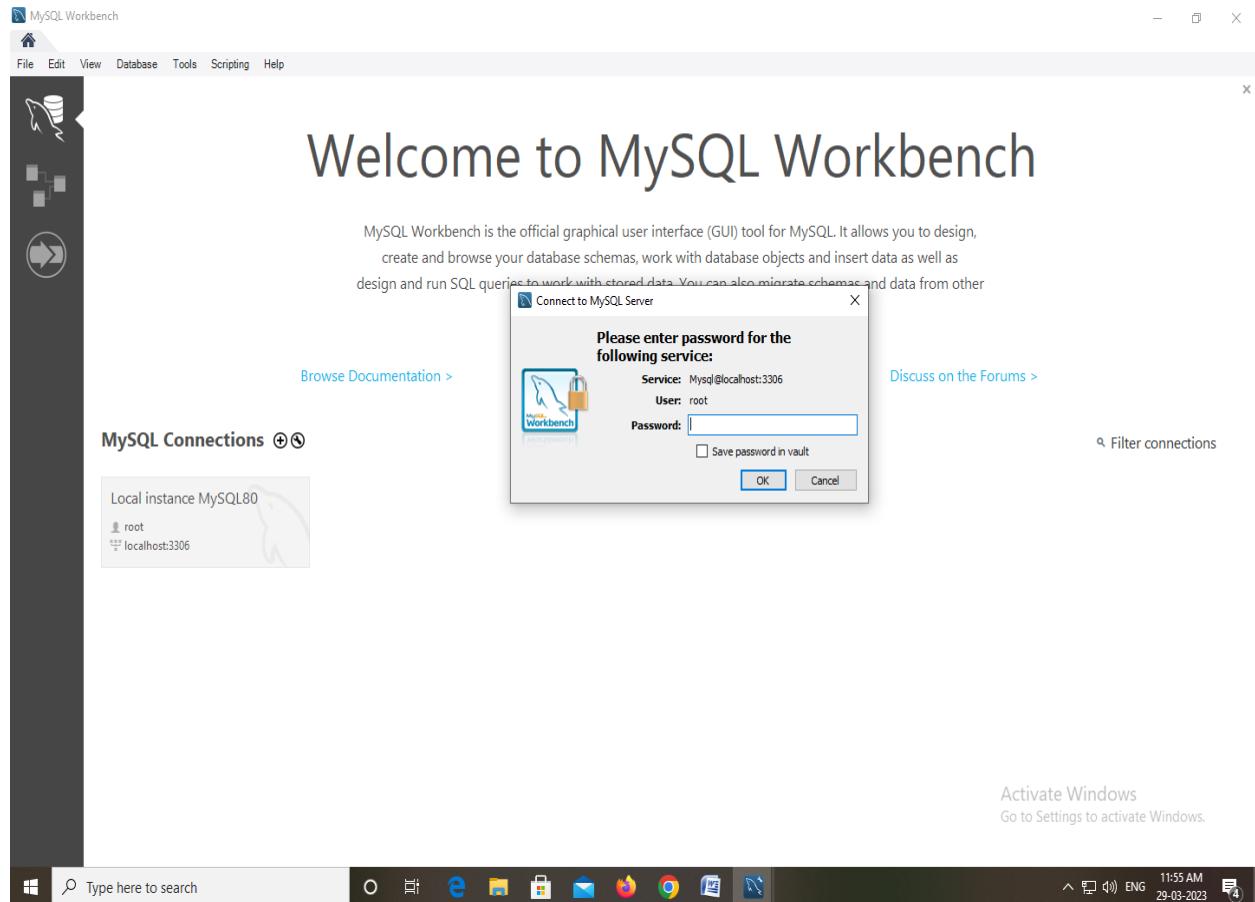
In this activity we can able to understand to create the data which contains all the Meta information regarding the columns described in the CSV files i.e.:

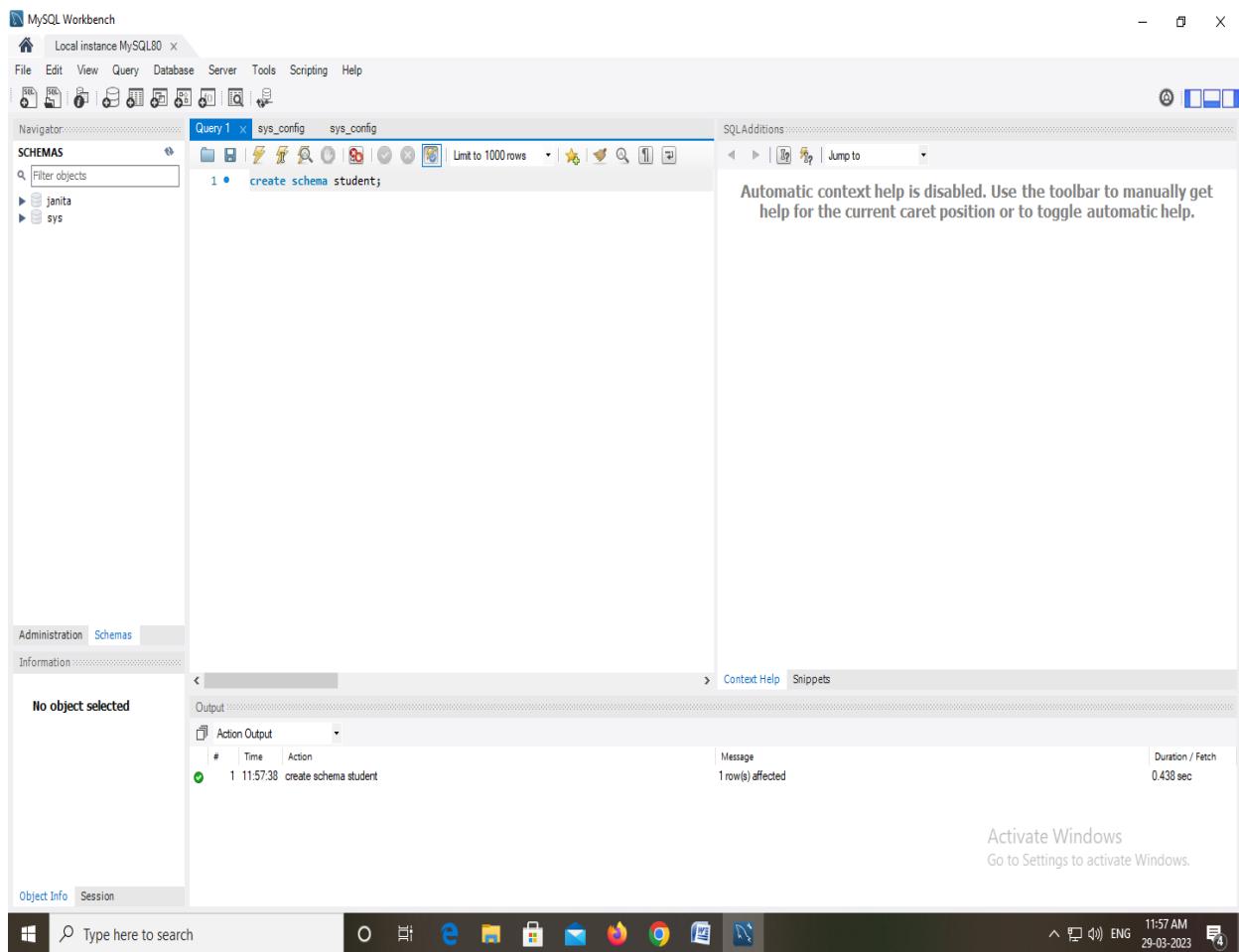
- 1) Bank: Name of the bank

- 2) Country: In which country the bank is operating
- 3) Total Assets: Total assets of the banks
- 4) Rank: Rank of the bank among the world
- 5) Landmass: Under which continent the bank belongs to

- **ACTIVITY 2:**

Storing Data in DB & Perform SQL Operations.





In this activity we can able to understand to store the data in DB and perform the SQL operations.

- **ACTIVITY 3:**

Connect DB with Tableau

The screenshot shows the Tableau desktop application interface. The title bar reads "Tableau - Financial analysis of banks story board - Tableau license expires in 6 days". The menu bar includes File, Data, Server, Window, and Help. The left sidebar shows a connection to "top100banks2017-12-31" (Microsoft Excel) and a sheet named "Sheet1". A note says "Use Data Interpreter" and "Data Interpreter might be able to clean your Microsoft Excel workbook." Below the sidebar are options for "New Union" and "New Table Extension". The main workspace is titled "Sheet1 (top100banks2017-12-31)". It displays a table with 5 fields and 120 rows. The table structure is as follows:

#	Rank	Bank	Country	Total Assets US B	Balance Sheet
1	Industrial & Commercial Ban...	China		4,005.58	31-12-2017
2	China Construction Bank Corp	China		3,397.13	31-12-2017
3	Agricultural Bank of China	China		3,232.68	31-12-2017
4	Bank of China	China		2,989.16	31-12-2017
5	Mitsubishi UFJ Financial Group	Japan		2,773.82	31-12-2017
6	JPMorgan Chase & Co	USA		2,533.60	31-12-2017
7	HSBC Holdings	UK		2,521.77	31-12-2017

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray indicating the date and time as 24-03-2023 at 10:57 AM.

In this activity we can able to understand, how to connect the data base with tableau



MILESTONE 2

Data Preparation

- ACTIVITY 1:

Prepare the Data for Visualization

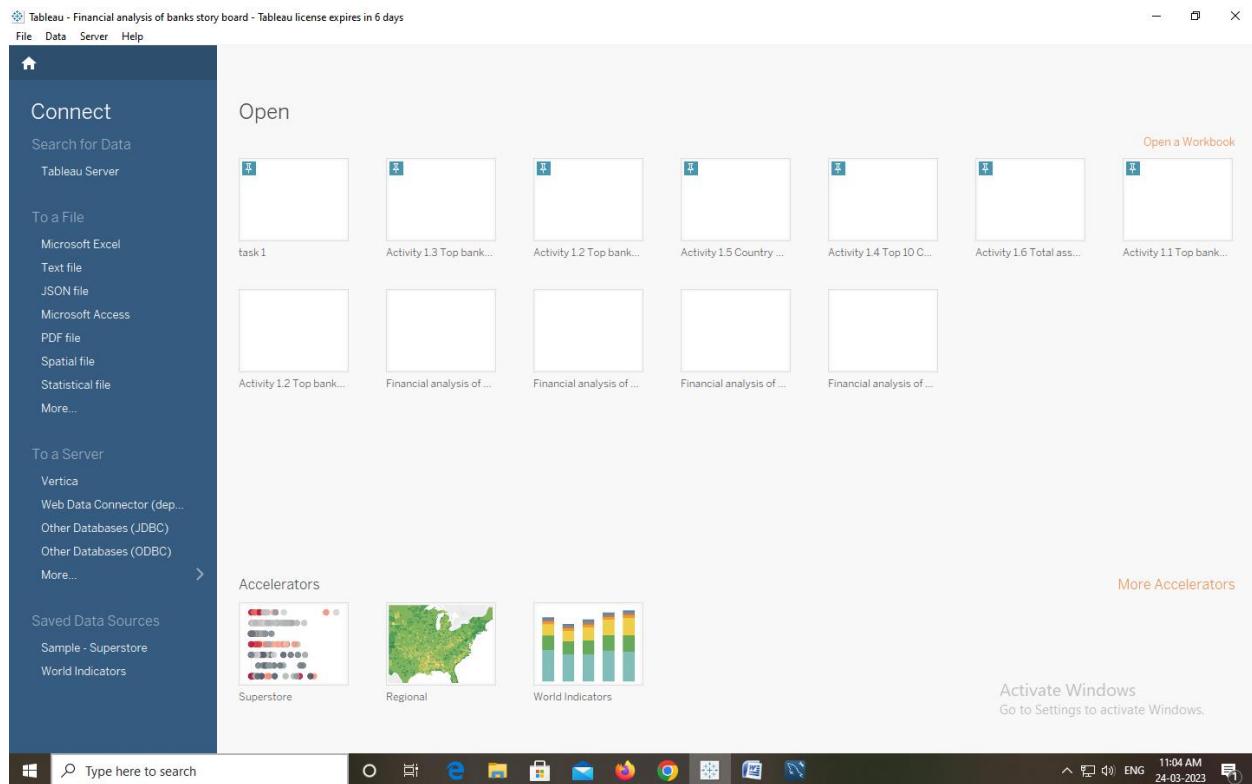


Tableau - Financial analysis of banks story board - Tableau license expires in 6 days

File Data Server Window Help

Connections Add

top100banks2017-12-31 Microsoft Excel

Sheet1

Use Data Interpreter

Data Interpreter might be able to clean your Microsoft Excel workbook.

Sheet1

New Union

New Table Extension

Sheet1 (top100banks2017-12-31)

Connection

Live Extract Edit Refresh

Filters 0 Add

Extract contains subset of data. 24-03-2023 10:16:48

Sheet1 5 fields 120 rows

100 rows

Name Sheet1

Fields

Type	Field Name	Physical Table	Remote Fi...
#	Rank	Sheet1	rank
Abc	Bank	Sheet1	bank
@	Country	Sheet1	country

#	Sheet1	Sheet1	Sheet1	Sheet1	Sheet1
Rank	Bank	Country	Total Assets Us B	Balance Sheet	
1	Industrial & Commercial Ban...	China	4,005.58	31-12-2017	
2	China Construction Bank Corp	China	3,397.13	31-12-2017	
3	Agricultural Bank of China	China	3,232.68	31-12-2017	
4	Bank of China	China	2,989.16	31-12-2017	
5	Mitsubishi UFJ Financial Group	Japan	2,773.82	31-12-2017	
6	JPMorgan Chase & Co	USA	2,533.60	31-12-2017	
7	HSBC Holdings	UK	2,521.77	31-12-2017	

Activate Windows Go to Settings to activate Windows

Data Source Activity 1.1: Top banks accordin... Activity 1.3: Top banks accordin... Activity 1.4: Top 10 Countries wit... Activity 1.5: Country with total as... Activity 1.6: Total assets analysi... Activity 1.7: Visualizing the data ... Dashboard 1 Dashboard 1 (2)

Janita P 10:57 AM ENG 24-03-2023

In this activity we can able to understand, how to prepare the data for visualization in tableau.



MILESTONE 3

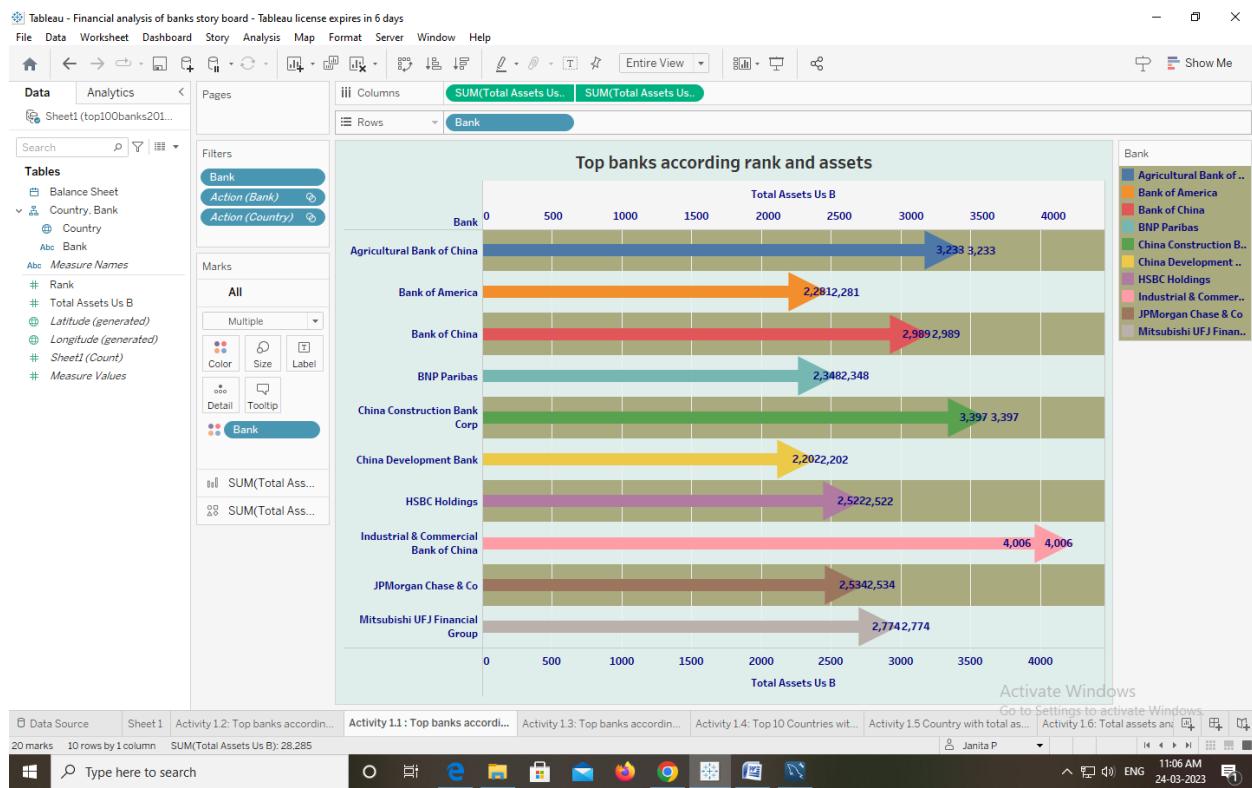
Data Visualization

- **ACTIVITY 1:**

No of Unique Visualizations

- ✓ **ACTIVITY 1.1:**

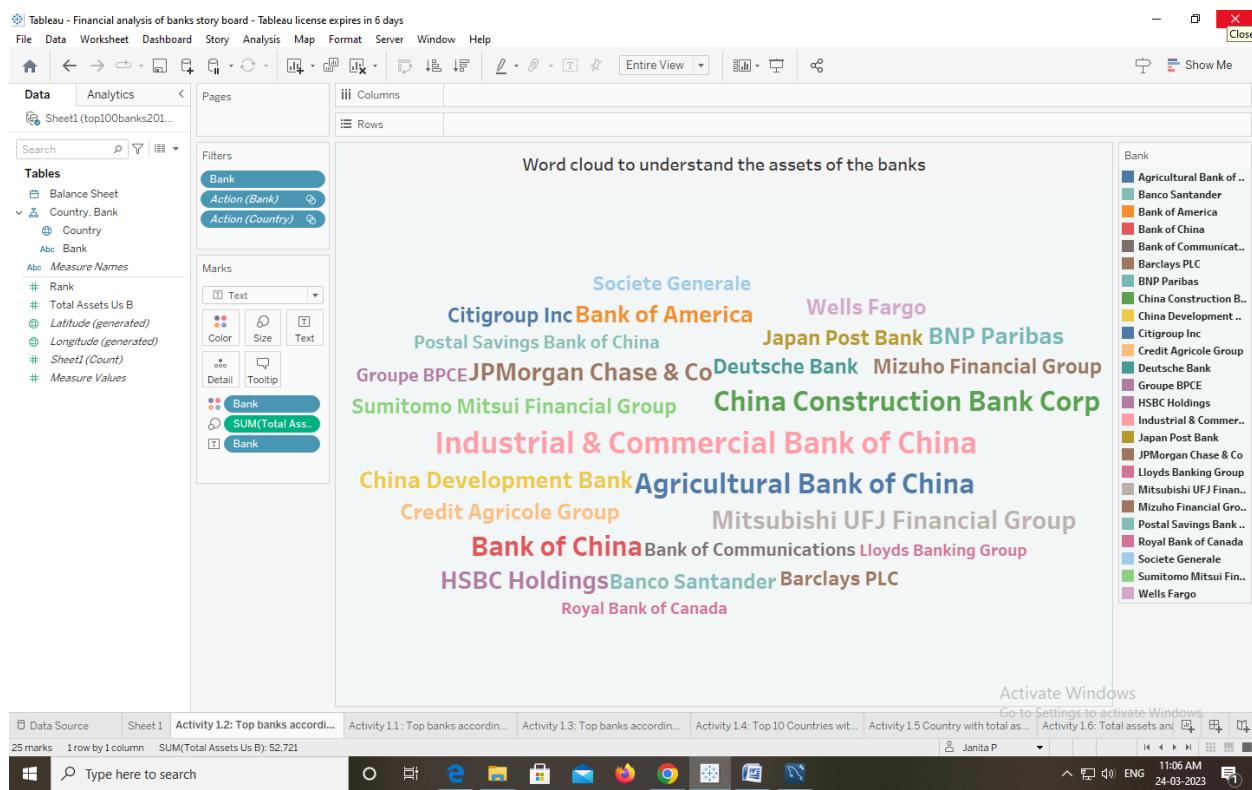
Top banks according rank and assets



In this activity we can able to understand, how to create the arrow graph of the top banks according to its ranks and assets. In this graph it contains two types of graphs i.e., bar graph and arrow graphs.

✓ **ACTIVITY 1.2:**

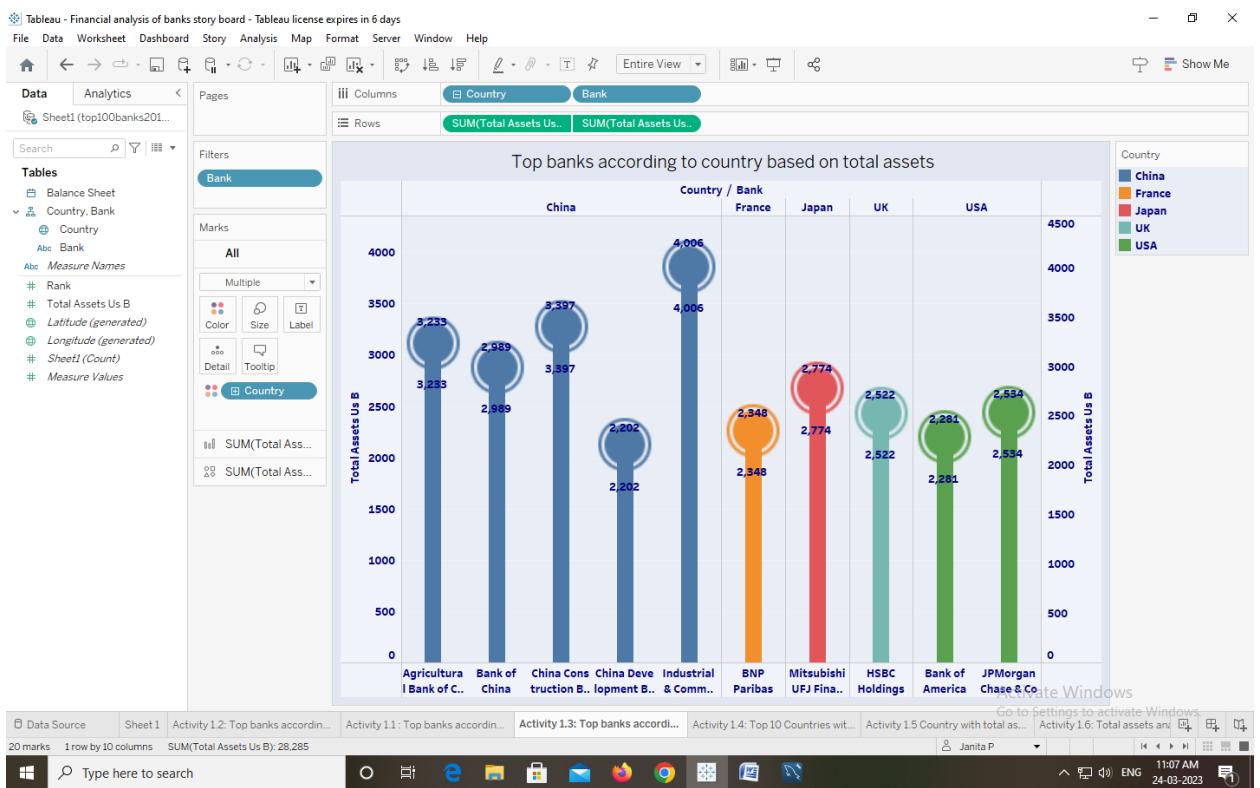
Top banks according to total assets



In this activity we can able to understand, how to create the word cloud, where we can able to understand the assets of the banks.

✓ **ACTIVITY 1.3:**

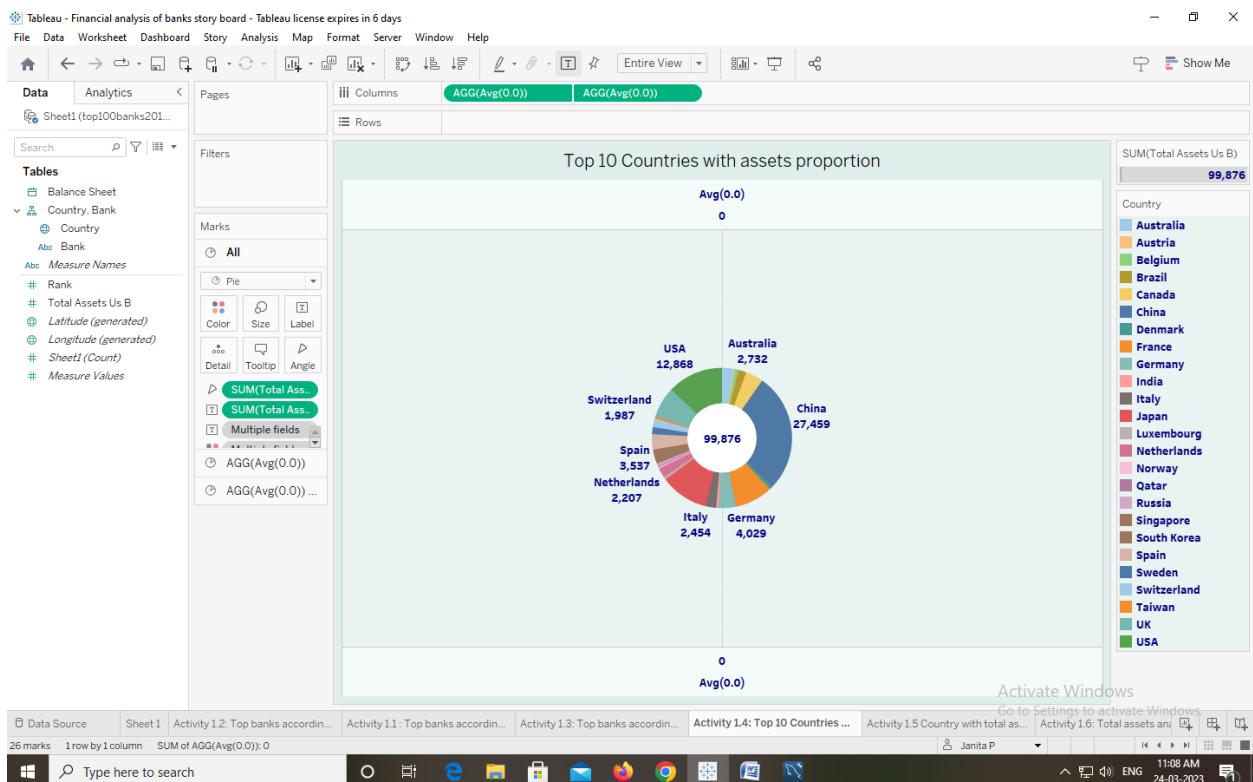
Top banks according to country based on total assets



In this activity we can able to understand, how to create the lollipop chart, where we can able to understand the top banks according to the country based on the total assets.

✓ **ACTIVITY 1.4:**

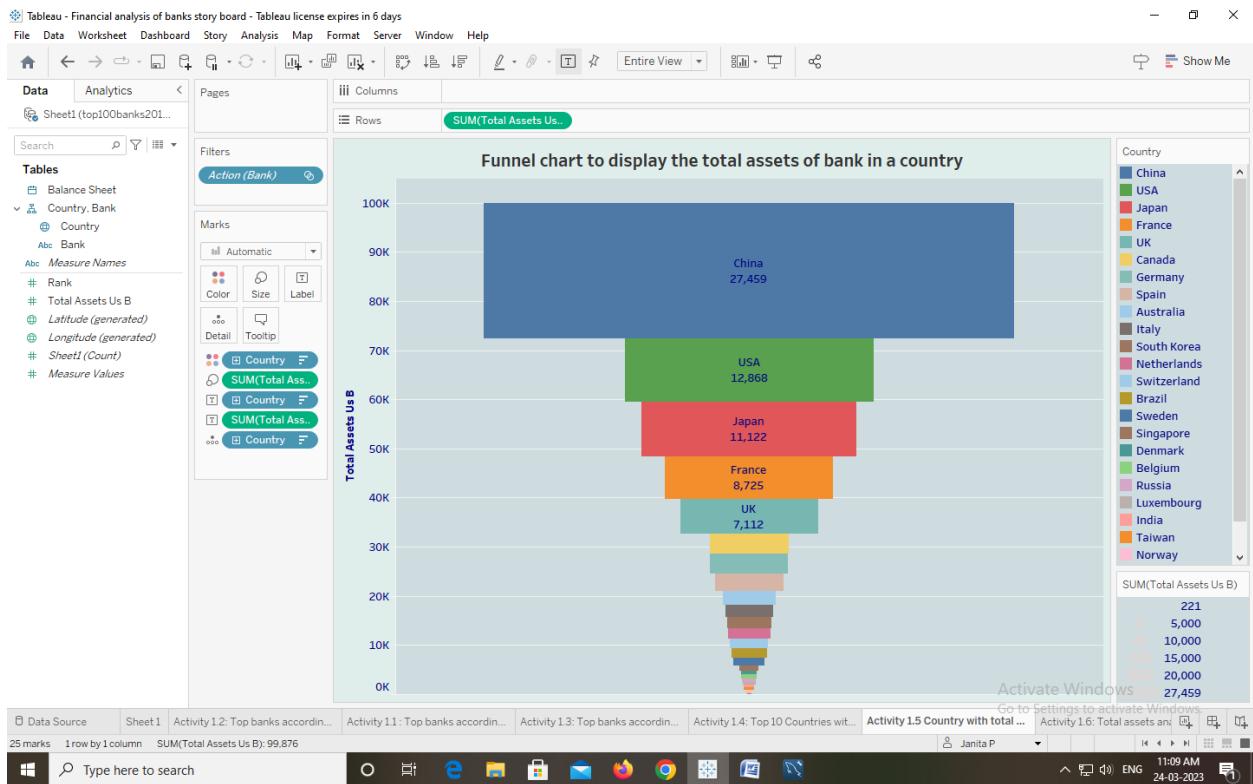
Top 10 Countries with assets proportion



In this activity we can able to understand, how to create the pie/dough-nut chart, where we can able to understand the top 10 countries with assets proportion.

✓ **ACTIVITY 1.5:**

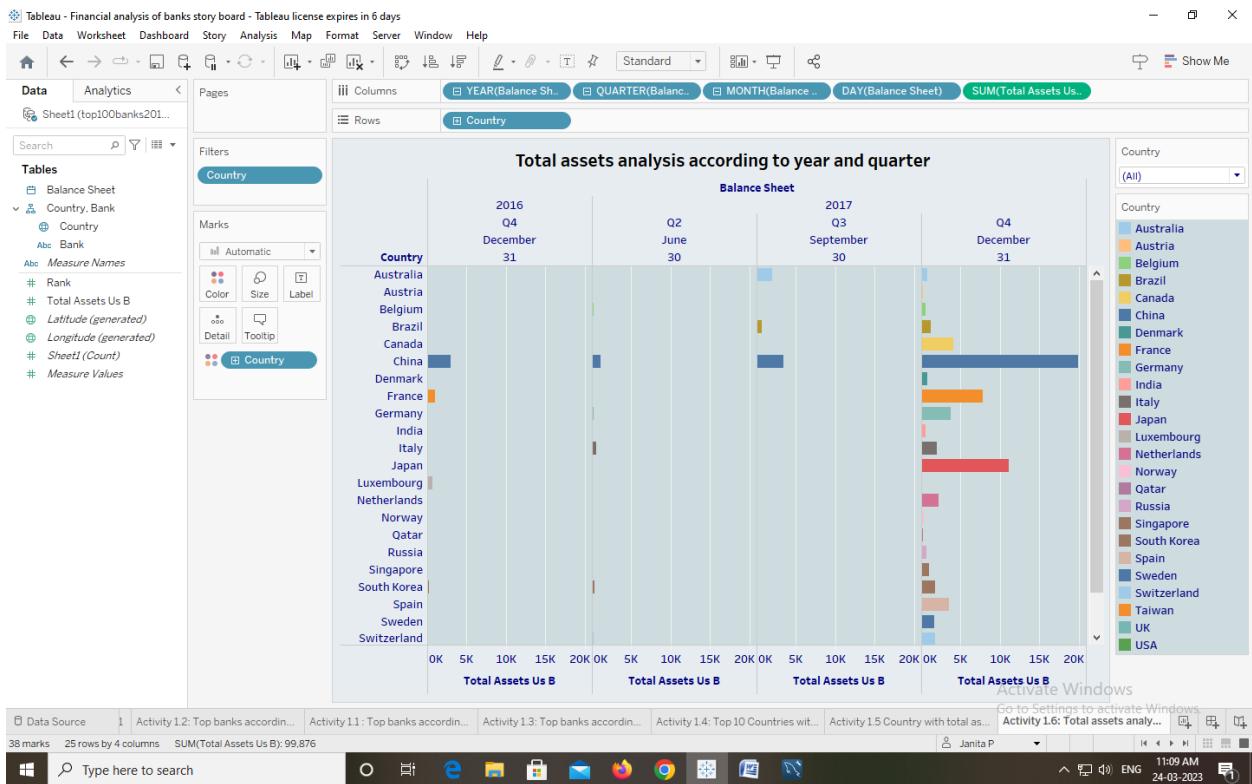
Country with total assets using funnel chart in increasing order



In this activity we can able to understand, how to create the funnel chart, where we can able to understand and display the total assets of banks in the country.

✓ ACTIVITY 1.6:

Total assets analysis according to year and quarter



In this activity we can able to understand, how to create the chart, bar where we

can able to understand the total assets analysis according to the year and quarter.

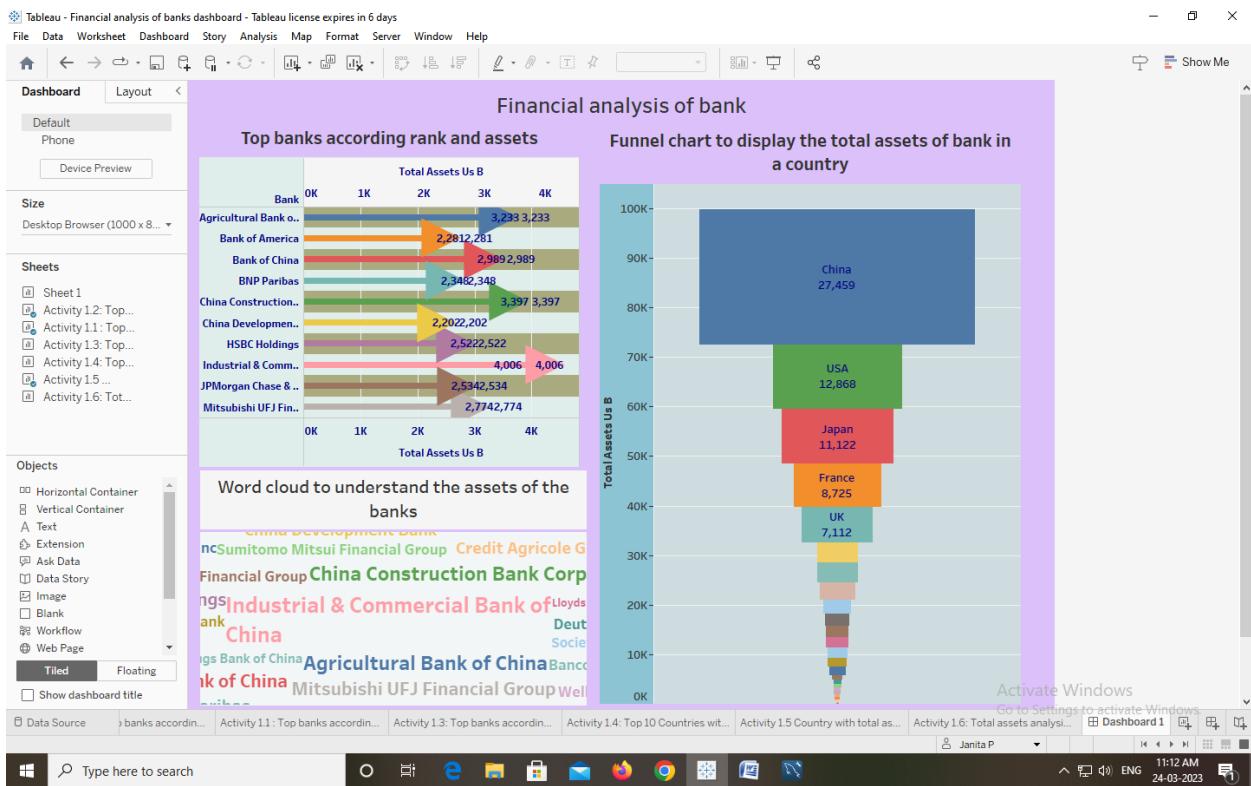


MILESTONE 4

Dashboard

- ACTIVITY 1:

Responsive and Design of Dashboard



In this activity we can able to understand, how to create the responsive and the design of dashboard. In this dashboard we can able to analysis the financial of the banks.

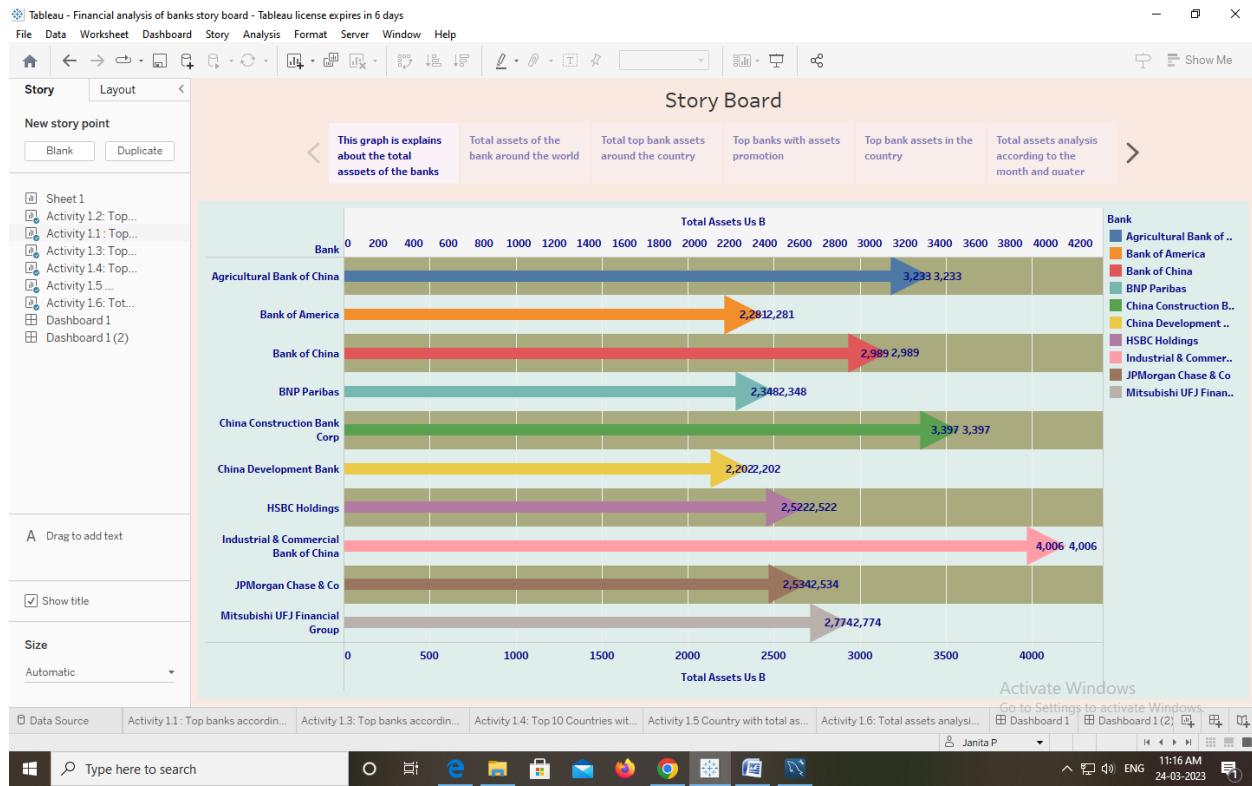


MILESTONE 5

Story

- **ACTIVITY 1:**

No of Scenes of Story



In this activity we can able to understand, how to create the story board.

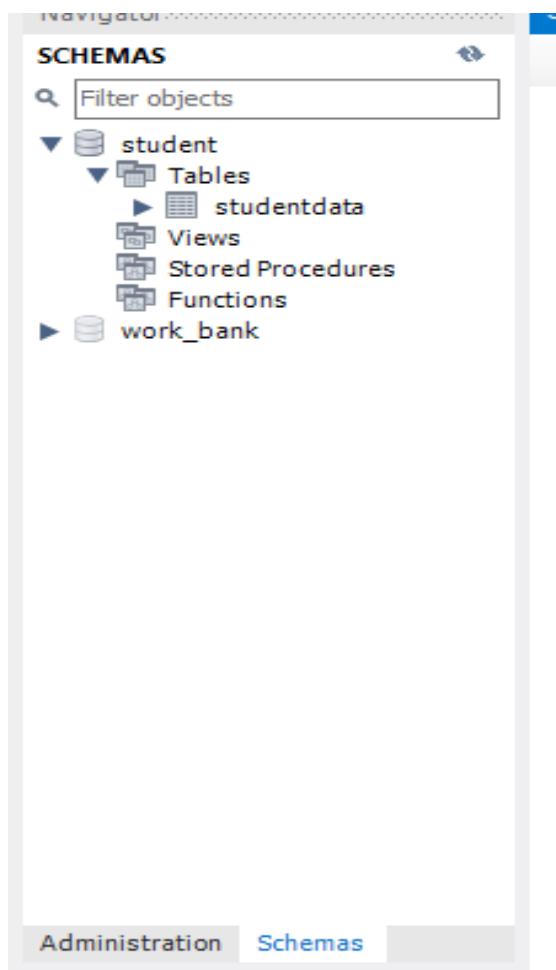


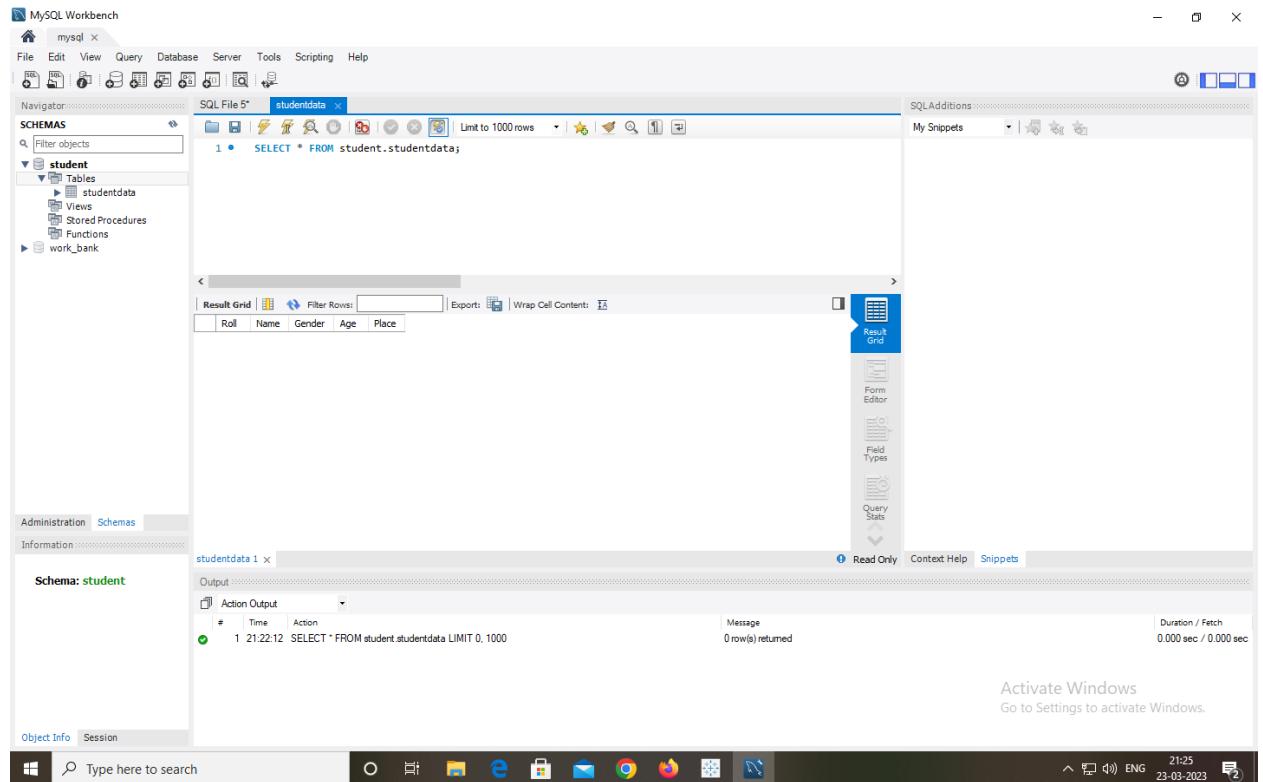
MILESTONE 6

Performance Testing

- ACTIVITY 1:

Amount of Data Rendered to DB

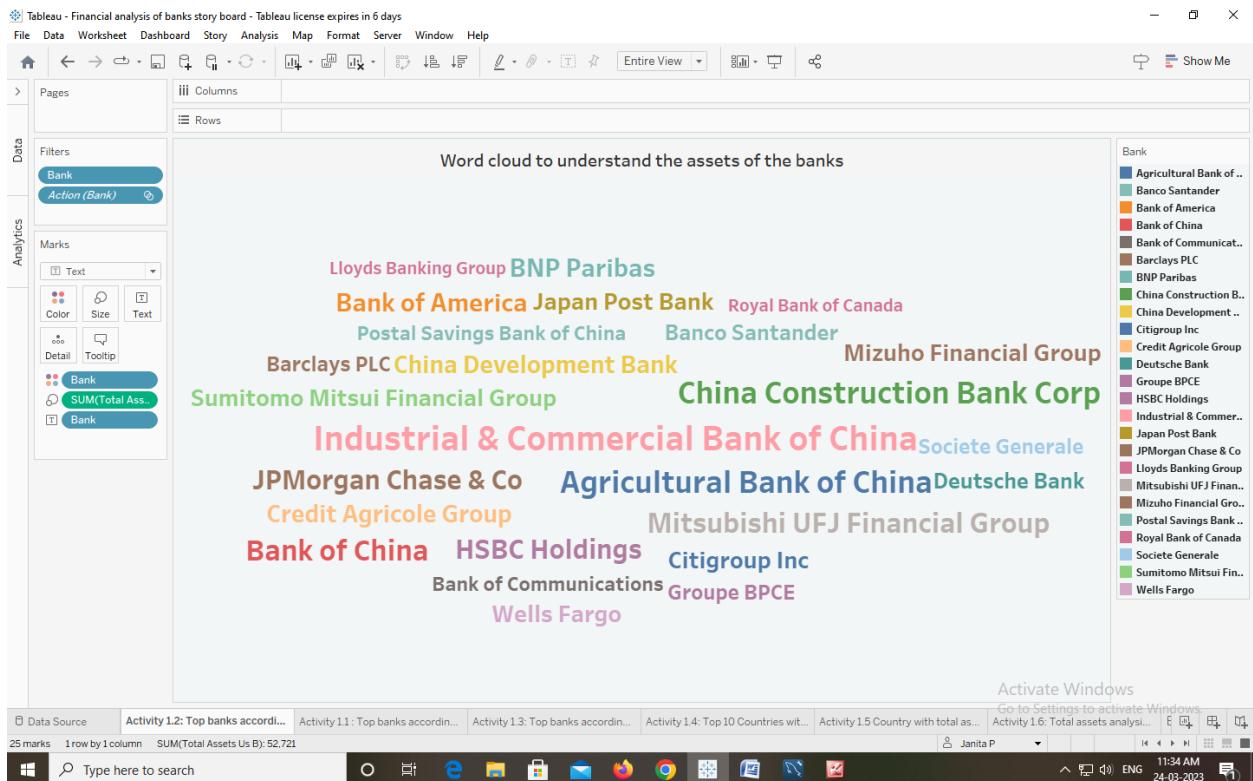


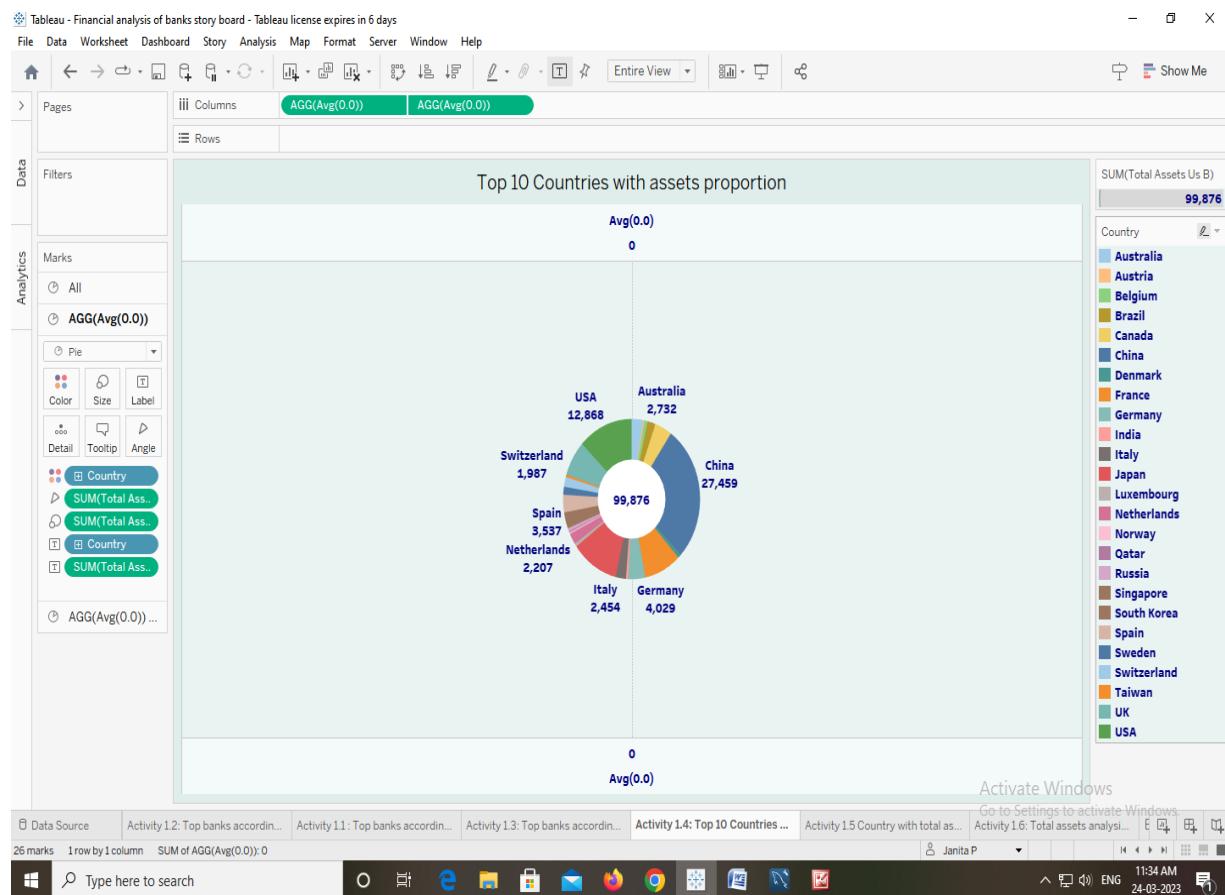


The amount of data that is rendered to a database depends on the size of the dataset and the capacity of the database to store and retrieve data with the help of the schemas in MySQL Workbench.

- **ACTIVITY 2:**

Utilization of Data Filters

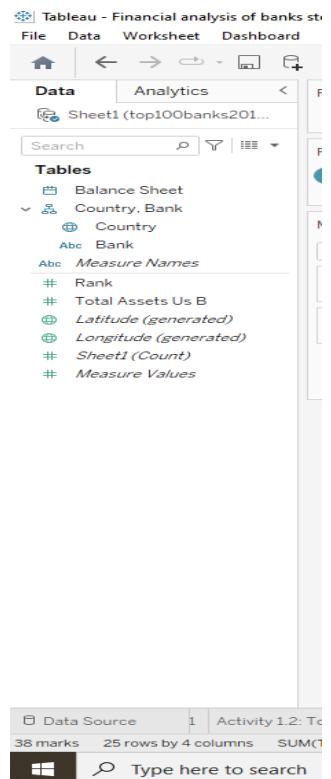




In this activity we can able to understand, how to utilize the data filters.

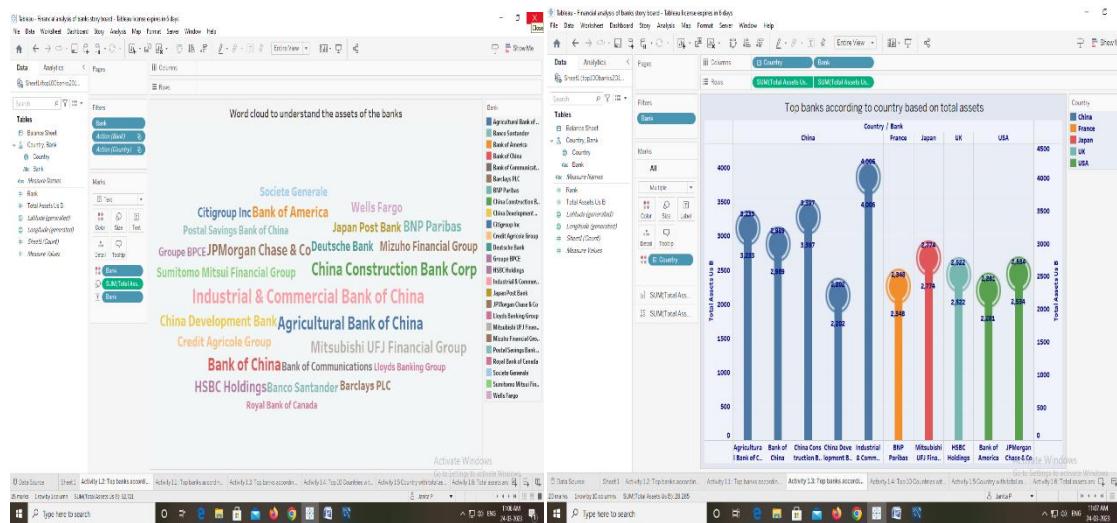
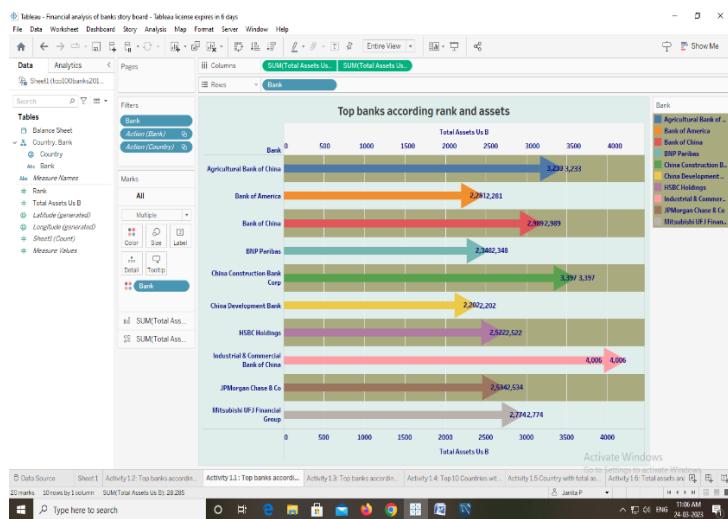
- **ACTIVITY 3:**

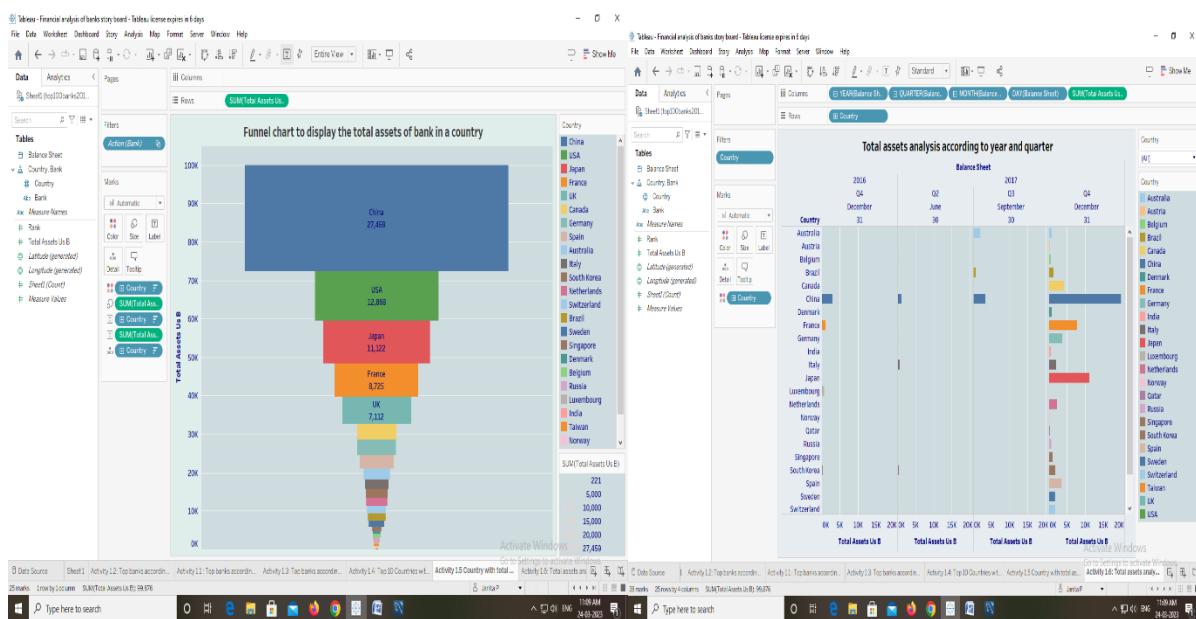
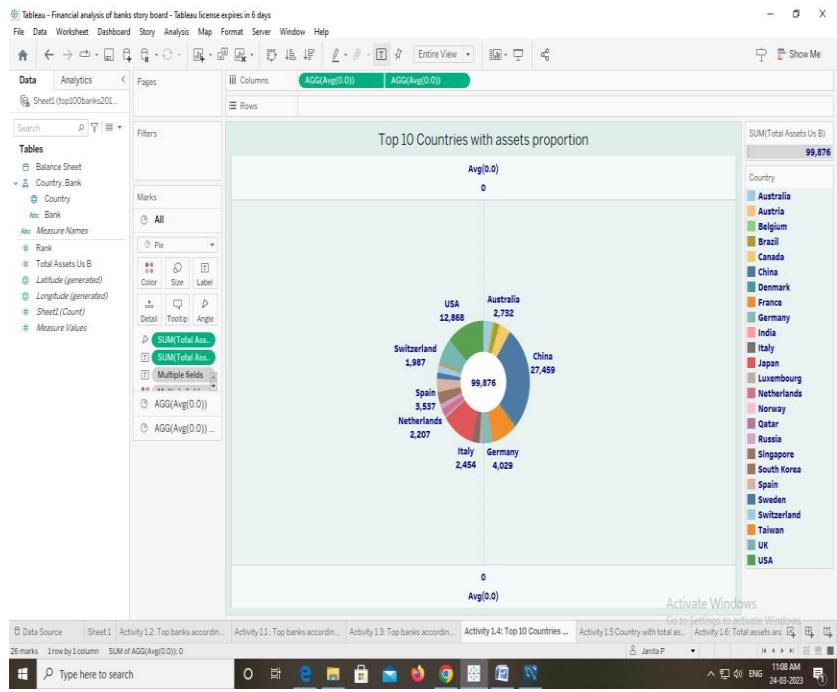
No of Calculation Fields



- ACTIVITY 4:**

No of Visualizations/ Graphs







MILESTONE 7

Web integration

Publishing dashboard and reports to tableau public

The screenshot shows the Tableau desktop interface with a dashboard titled "Activity 1.1 Top banks according rank and assets". The dashboard contains several visualizations, including a bar chart of top banks by total assets and a map of countries based on total assets. A "Tableau Public Sign In" dialog is overlaid on the dashboard, prompting the user to sign in using their Tableau account. The dialog includes fields for Email and Password, a Remember me checkbox, and Sign In and Forgot Password buttons.

Dashboard Layout:

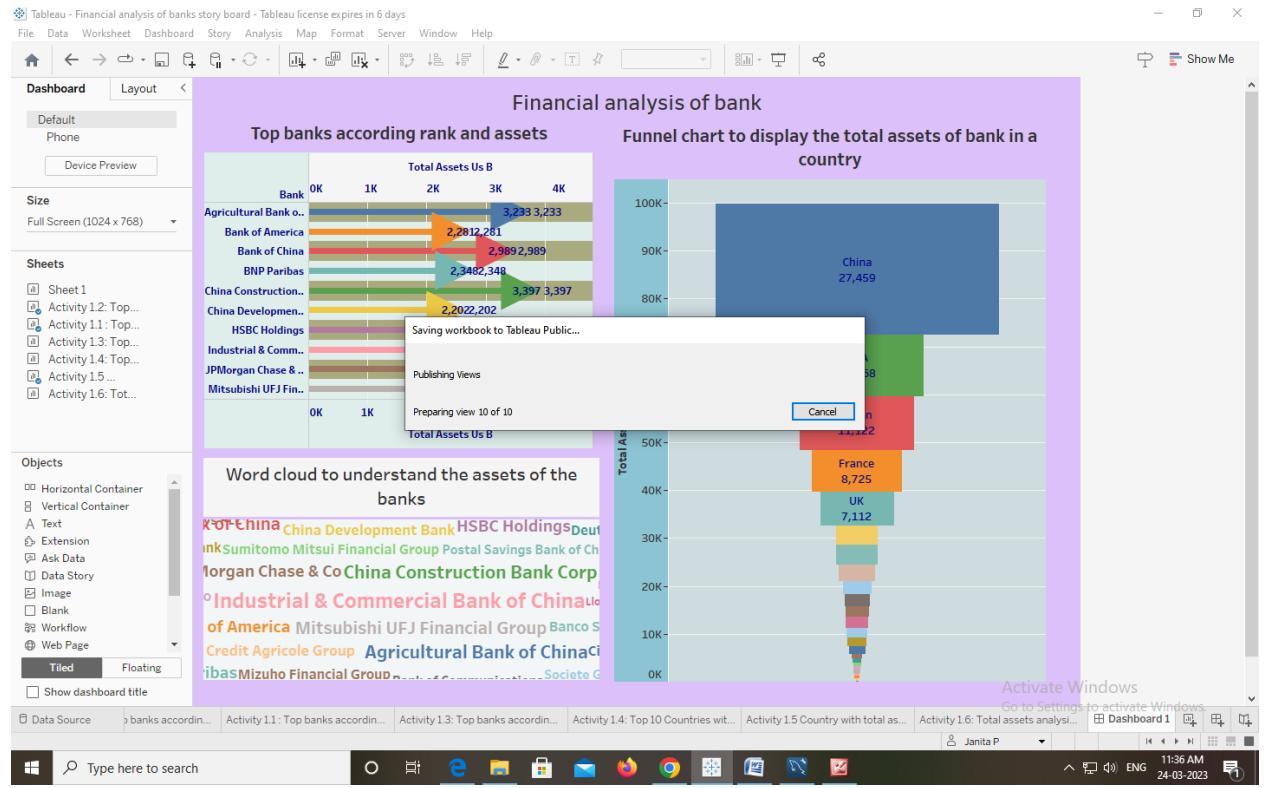
- Default Phone
- Device Preview
- Size Automatic
- Sheets
 - Activity 1.1 Top ...
 - Activity 1.2 Top ...
 - Activity 1.3 Top ...
 - Activity 1.4 Top ...
 - Activity 1.5 ...
 - Activity 1.6: Tot...
- Objects
 - Horizontal Container
 - Vertical Container
 - A Text
 - Extension
 - Ask Data
 - Data Story
 - Image
 - Blank
 - Workflow
 - Web Page
- Tiled Floating
- Show dashboard title

Data Guide:

- Activity 1.1 Top banks according rank and assets
- Viz Details
- Viz description
- Additional resources
- Applied Filters
- Data in This Viz
 - Sheet1 (top100banks2017-12-31)
 - Abc Bank
 - Total Assets Us B
- Data Summary
- Detected Outlier (1)
 - Industrial & Commercial Bank of Chi... Sum of Total Assets Us B: 4.006

Bottom Taskbar:

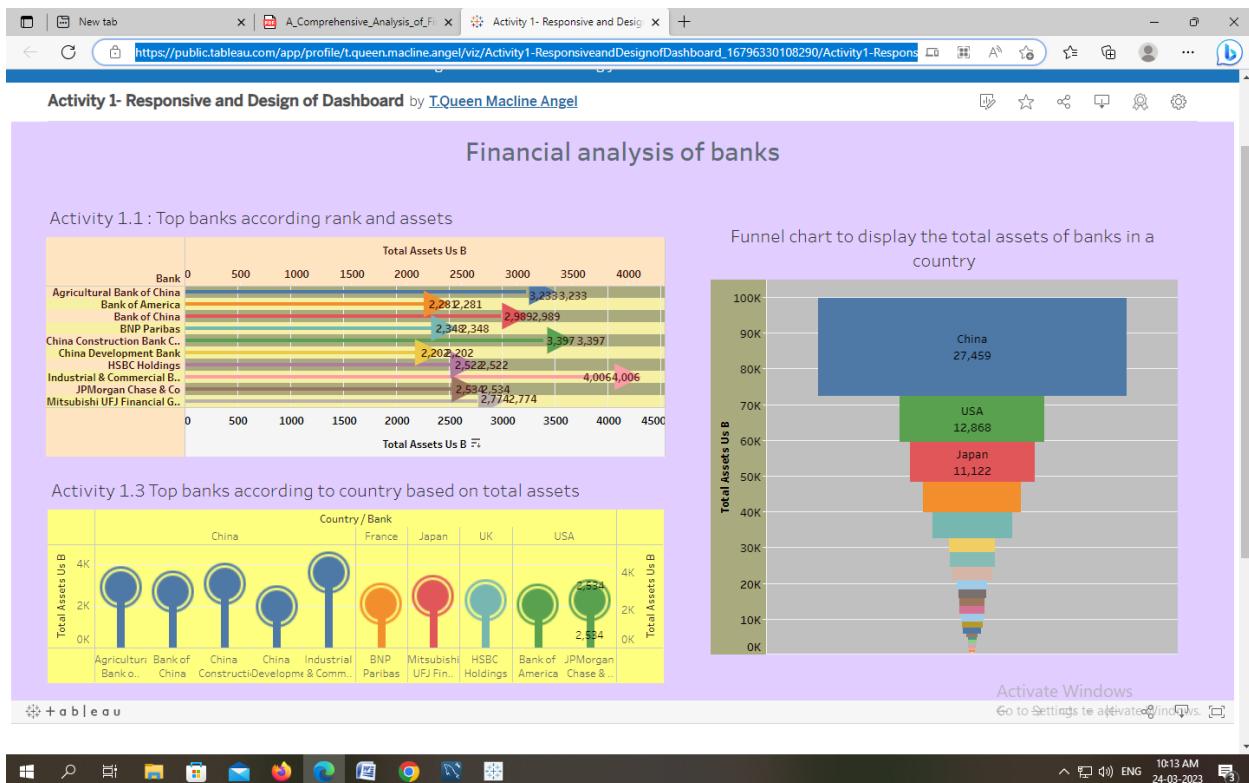
- Data Source
- banks according...
- Activity 1.2 Top banks according...
- Activity 1.3 Top banks according...
- Activity 1.4 Top 10 Countries wit...
- Activity 1.5 Country with total as...
- Activity 1.6: Total assets analysi...
- Dashboard 1
- File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
- Entire View
- 12:16 PM ENG 29-03-2023



In this activity we can able to understand, how to publish dashboard and reports to tableau

- **ACTIVITY 1:**

Embed Dashboard & Story with Web Bootstrap

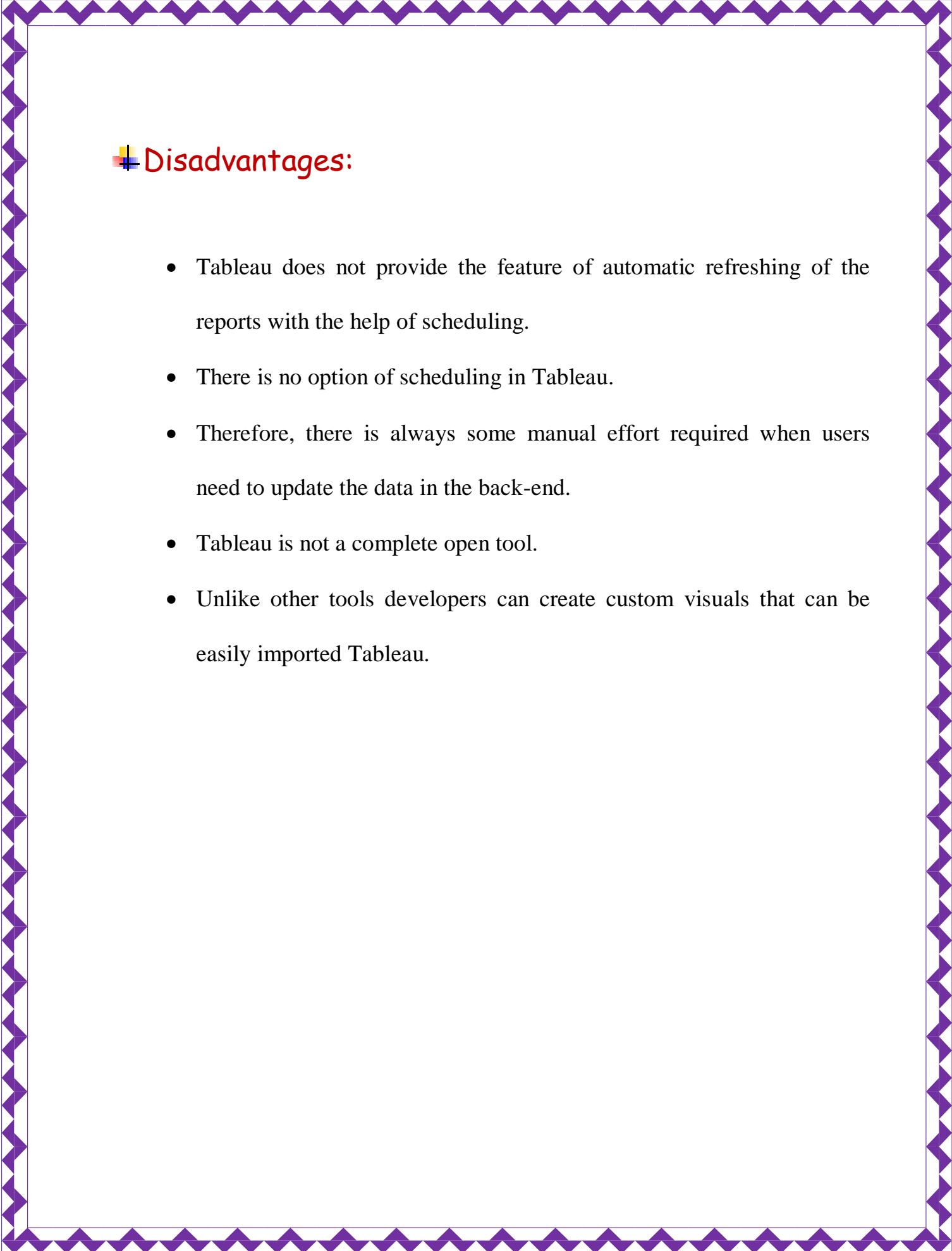


In this activity we can able to understand, how to embed dashboard and story with web bootstrap.

ADVANTAGES AND DISADVANTAGES:

Advantages:

- Tableau is a data visualization tool first and foremost.
- Tableau can handle millions of rows of data with ease.
- Therefore, its technology is there to support complex computations, data blending and dash boarding for the purpose of creating beautiful visualizations that deliver insights that cannot easily be derived from staring at a spreadsheet.
- Different types of visualization can be created with a large amount of data without impacting the performance of the dashboards.
- In Tableau there is an option where the user can make “live” to connections to different data sources like SQL etc.,



Disadvantages:

- Tableau does not provide the feature of automatic refreshing of the reports with the help of scheduling.
- There is no option of scheduling in Tableau.
- Therefore, there is always some manual effort required when users need to update the data in the back-end.
- Tableau is not a complete open tool.
- Unlike other tools developers can create custom visuals that can be easily imported Tableau.



Applications

- Tableau is greatly used because data can be analyzed very quickly with it.
- The visualizations are generated as dashboards and worksheets.
- Tableau allows one to create dashboards that provide actionable insights and drive the business forward.
- Tableau products always operate in virtualized environments when they are configured with the proper underlying operating system and hardware.
- Tableau is used by data scientists to explore data with limitless visual analytics.

Conclusion

In this project, we learnt different ways to create calculated fields in Tableau as well as different types of calculated fields and plotting the appropriate graph. Our data sources will not have all the possible fields we want to use in our analysis. Calculated fields allow us to derive values based on logic and expressions; they ultimately add more flexibility and drive more insights into our Tableau dashboards.

Future Scope

A tableau is a powerful tool for data visualization and analysis. Data analysts can use the tool to create valuable reports that help them make intelligent decisions quickly and easily.

THE END
