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

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AKSHAYA R



APRIL 3, 2023

FIN ANALYTICA

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# INTRODUCTION

## **Project Description**

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 behaviour, such as growing disintermediation and increased emphasis on shareholder value. In addition, recent banking crises in Asia and Latin America have accentuated these pressures. The banking industries in central Europe and Latin America have also been transformed because of privatisations of state-owned banks that had dominated their banking systems in the past. 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.

## **Milestone 1: Define Problem / Problem Understanding**

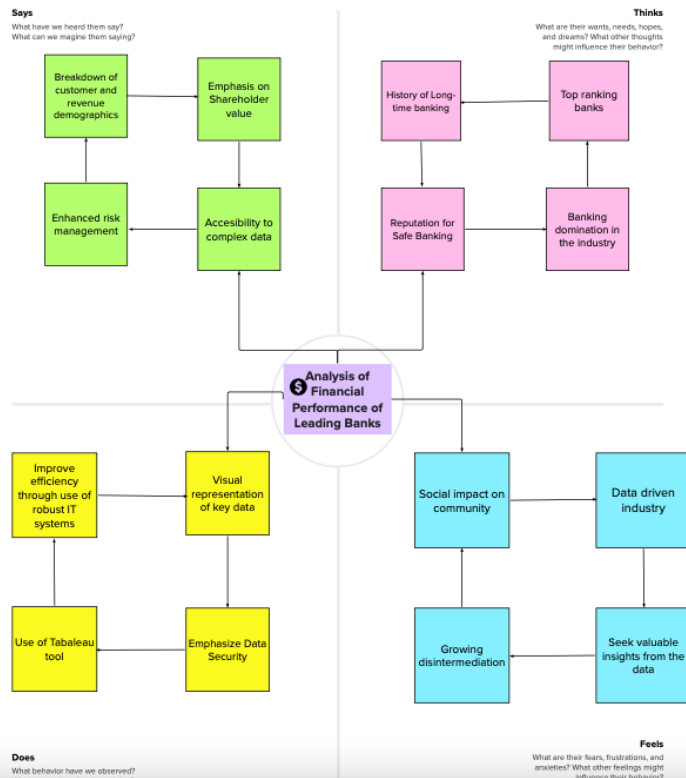
In this milestone, we will go through defining the problem and gaining an understanding of the problem that needs resolution. This section underlines the importance of defining the problem within the system to be improved, following understanding the system and as a precursor to developing the solution and collecting the evidence.

This involves understanding the global forces that affect the banking sector in Asia and Latin America and how the deregulation of the financial services sector helps to increase shareholder value.

## Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

[Share template feedback](#)



1

## Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

 5 minutes

### PROBLEM

Prior to privatisation of state owned banks, the efficiency of the banks around the world needs to be analysed by identifying the KPIs and trends across countries over time.



#### Key rules of brainstorming

To run an smooth and productive session



Stay in topic.



Encourage wild ideas.

Defer judgment.



Listen to others.

Go for volume.



If possible, be visual.

2

## Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

### Akshaya R

Development of forecasting models to analyse future performance.

Identify a bank's net profit on interest-earning assets, such as loans or investment securities using Net Interest Margin calculator

Calculate the return-on-assets ratio to identify the profitability ratio, which indicate the per-dollar profit a bank earns on its assets

Analyse the Fintech activity of a bank which is directly proportional to the economic development

Modernize and open up financial infrastructures to enable competition and contestability between them

Identify the financial experience of growth performance and macroeconomic adjustment of private banks in various sectors

Identify the bank's liabilities and stockholders' equity

Identify credit risk, liquidity risk, interest rate risk, and capital risk

Analyse the Cash flows in a financial year to ensure the steady performance

### Bhavani S

There is a fundamental tradeoff between bank profitability and risk

Analyse a bank that reports above average profits either takes on above average risk

A bank's net income can be divided into four components that potentially reveal differences in performance: net interest income, provision for loan losses, burden, and taxes.

Bank assets can generally be classified in one of four categories: cash and equivalents, investment securities, loans, and other assets.

### Gayathri N

There are seven fundamental risks in banking: credit risk, liquidity risk, interest rate risk, capital risk, operational/fraud risk, off-balance sheet risk, and foreign exchange risk. Analyse the above key risk across various banks

Different-sized banks exhibit different profitability and risk profiles. compare these across different geographies

Different types of banks operate in different geographic markets. this leads to volatility in the banking industry

Liabilities include transaction accounts, time and savings deposits, purchased liabilities, as federal funds purchased. These significantly deter a bank's efficient performance

### Rajesh Kanna G

Wholesale banks work primarily with commercial loan and deposit customers. failure to repay the loans affects the bank's performance

Non repaying retail consumer negatively affect the bank's cash flow and its performance.

The Uniform Bank Performance Report (UBPR) is available quarterly for anyone to evaluate a bank's risk and return performance. This indicates if a bank is operating at profit or not.

ROE decomposes return on assets into its contributing factors

3

## Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

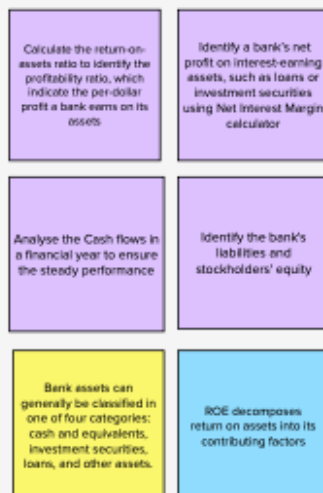
### Risk Identification and Mitigation



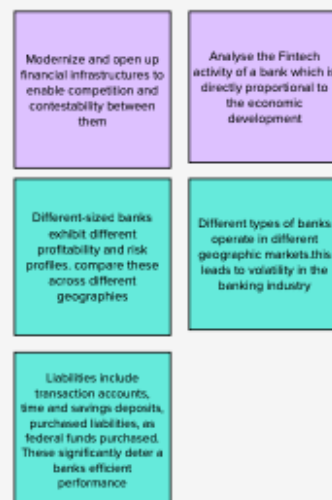
### Key Performance Indicator(KPIs)



### Financial Ratios



### Generic Inference



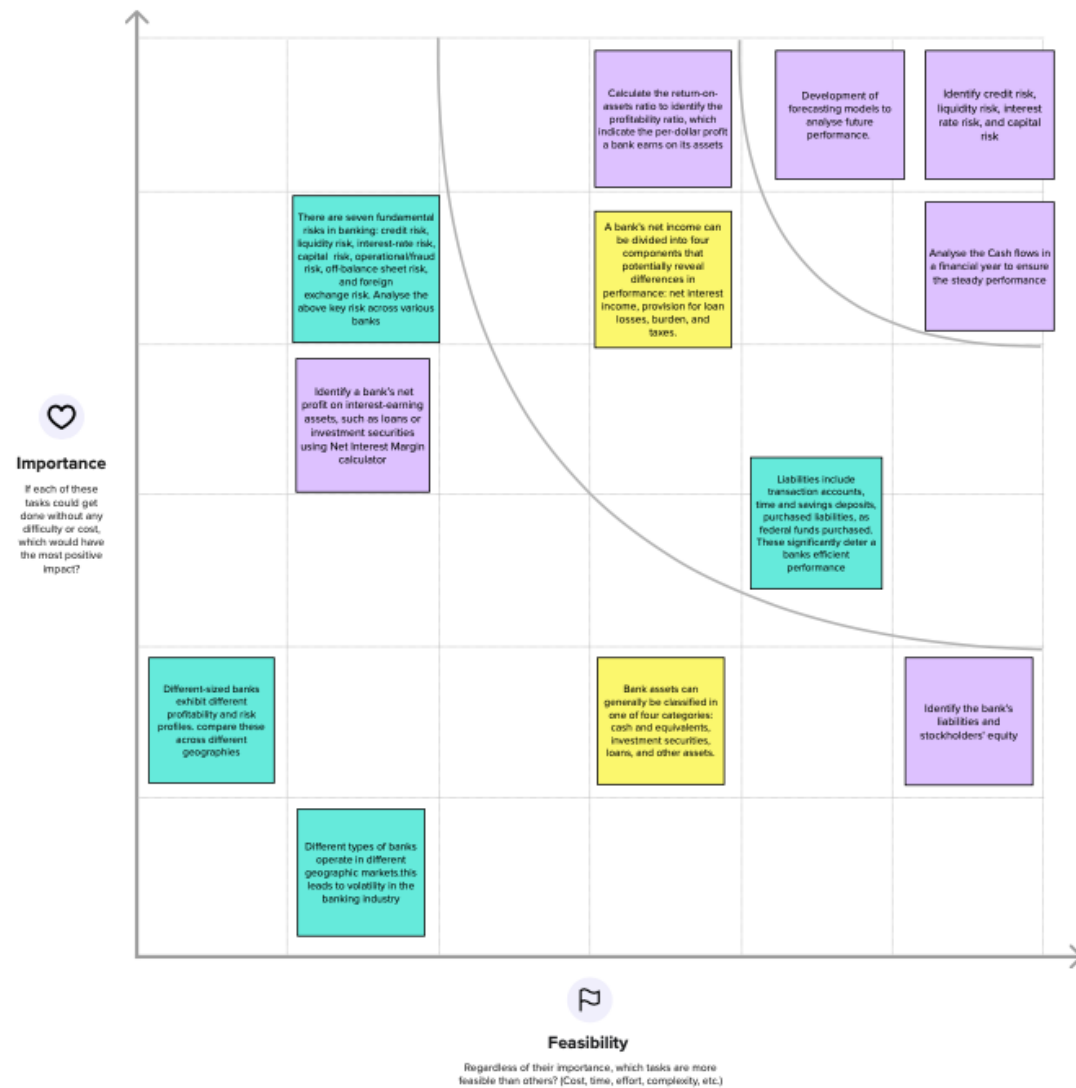


4

## Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕒 20 minutes



### **1.1 Specify the Business Problem**

The essence of solving a business problem is to reduce uncertainty regarding action; after all, it is uncertainty about action that makes a problem a problem. This section examines the banking sector across two continents to inspect the kinds of issues involved in reducing uncertainty regarding action in relation to business problems.

### **1.2 Business Requirements**

This section details everything the project requires for success and outlines the project objectives, the expectations throughout the project lifecycle, and the success factors required to successfully accomplish the project.

The various demographic and technological factors are scrutinised to through understand the requirements.

### **1.3 Literature Survey**

This section conducts a survey of scholarly sources such as books, journal articles, and theses related to research question. In this project we have referred a variety of financial journals and publications from the experts across Europe and Latin America. In completing the project, the banking regulations in different market, the financial impact of these regulation and the consequences of these are scrutinised to develop the literature survey.

### **1.4 Social or Business Impact**

Microfinance and co-operative finance are often established models in many countries in Europe and Latin America. But over the last decade or so, new social or impact investment initiatives and funds have emerged across these geographies. The team members have analysed the social and business impacts of deregulating the financial industry and it was identified that deregulation of the industry will increase the access to funding for organisations that deliver both economic and social returns, such as microfinance institutions, impact investment funds and other social enterprises.

## Milestone 2: Data Collection & Extraction from Database

The various activities of this milestone are explained as follows.

### 2.1. Downloading The Dataset using link url

Firstly, we narrowed down the search and have downloaded the url of the data which provide the basis of the data collection. The data collected had records of various public sector banks across the world.

<https://data.world/arthur/banks/workspace/file?filename=top100banks2017-12-31.xlsx>

top100banks2017-12-31.xlsx						Query	
	#	rank	bank	country	country_1		
1		1	Industrial & Commercial Bank of China	China	People's Republic of China		
2		2	China Construction Bank Corp	China	People's Republic of China		
3		3	Agricultural Bank of China	China	People's Republic of China		
4		4	Bank of China	China	People's Republic of China		
5		5	Mitsubishi UFJ Financial Group	Japan	Japan		
6		6	JPMorgan Chase & Co	USA	United States of America		
7		7	HSBC Holdings	UK	United Kingdom of Great Britain and		
8		8	BNP Paribas	France	France		
9		9	Bank of America	USA	United States of America		
10		10	China Development Bank	China	People's Republic of China		
11		11	Credit Agricole Group	France	France		
12		12	Wells Fargo	USA	United States of America		
13		13	Japan Post Bank	Japan	Japan		
14		14	Mizuho Financial Group	Japan	Japan		
15		15	Sumitomo Mitsui Financial Group	Japan	Japan		

#### 2.1.1: Understand the Data

Accurate data collection is necessary to make informed business decisions, ensure quality assurance, and keep research integrity. During data collection, the team have identified the data types, the sources of data, and what methods are being used. We have checked the integrity of the data collected and have developed theories to substantiate our work and in-turn enabled the team members to develop a strategic approach.

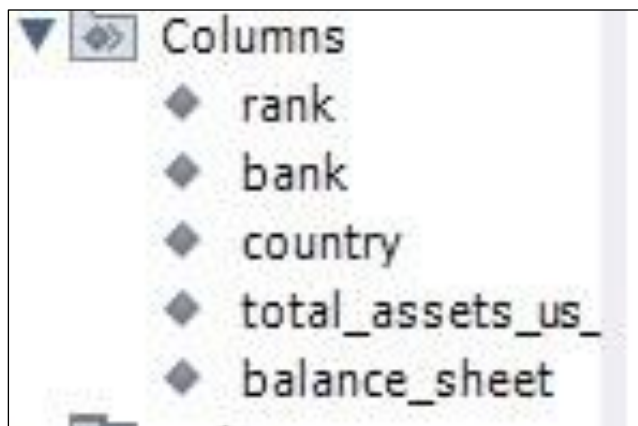
Top 100 banks 2017-12-31.csv - Google Drive

rank	bank	country	total_assets_us	balance_sheet
1	Industrial	China	4,005.58	#####
2	China Con	China	3,397.13	#####
3	Agricultur	China	3,232.68	#####
4	Bank of C	China	2,989.16	#####
5	Mitsubish	Japan	2,773.82	#####
6	JPMorgan	USA	2,533.60	#####
7	HSBC Holc	UK	2,521.77	#####
8	BNP Parib	France	2,348.11	#####
9	Bank of A	USA	2,281.23	#####
10	China Dev	China	2,201.86	#####
11	Credit Agr	France	2,112.04	#####
12	Wells Far	USA	1,951.76	#####
13	Japan Pos	Japan	1,873.50	#####
14	Mizuho FI	Japan	1,850.10	#####
15	Sumitomc	Japan	1,847.47	#####
16	Citigroup	USA	1,843.06	#####
17	Deutsche	Germany	1,766.85	#####
18	Banco San	Spain	1,730.08	#####
19	Barclays	P UK	1,528.89	#####
20	Societe G	France	1,527.43	#####

## 2.1.2: Column Description of The Dataset

The data collected was based on the type of bank, the county of operation, the total assets under management, the global ranking, and the landmass it covers which indicate the continent the bank belongs to. These are listed as mentioned below.

1. Bank
2. Country
3. Total Assets
4. Rank
5. Landmass

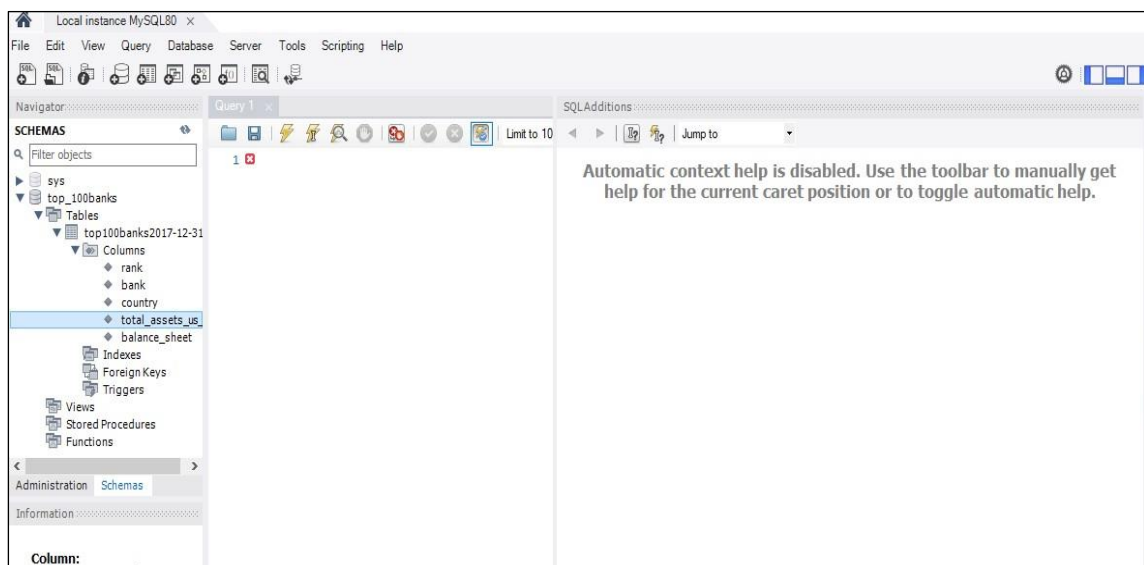


## 2.2. Storing Data in DB & Perform SQL Operations

In databases, information is stored in tables, columns, and rows for easy processing. That storage is managed by the DBMS – database management system. There are relational (SQL) and non-relational (NoSQL) databases. A relational database is generally said to be the most common kind.



The team then progressed to perform complex comparisons to basic arithmetic operations; which is equivalent of an operator in SQL like the different buttons on a calculator function. There are six types of SQL operators that we covered such as Arithmetic, Bitwise, Comparison, Compound, Logical and String.

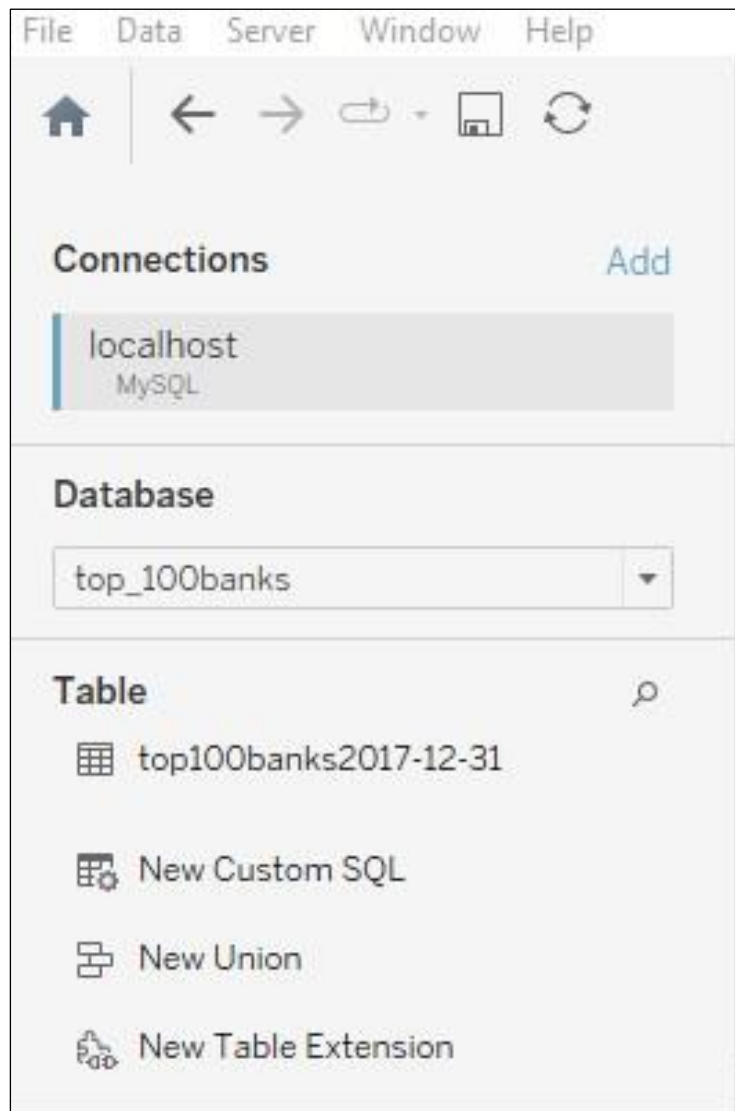


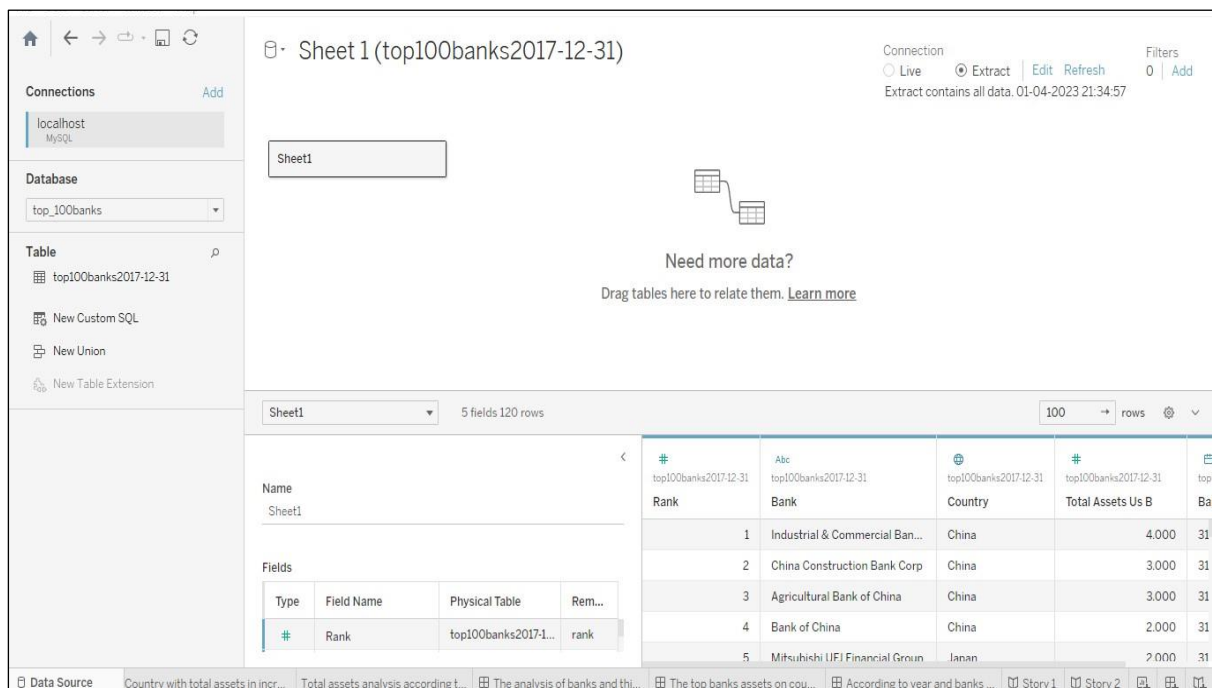
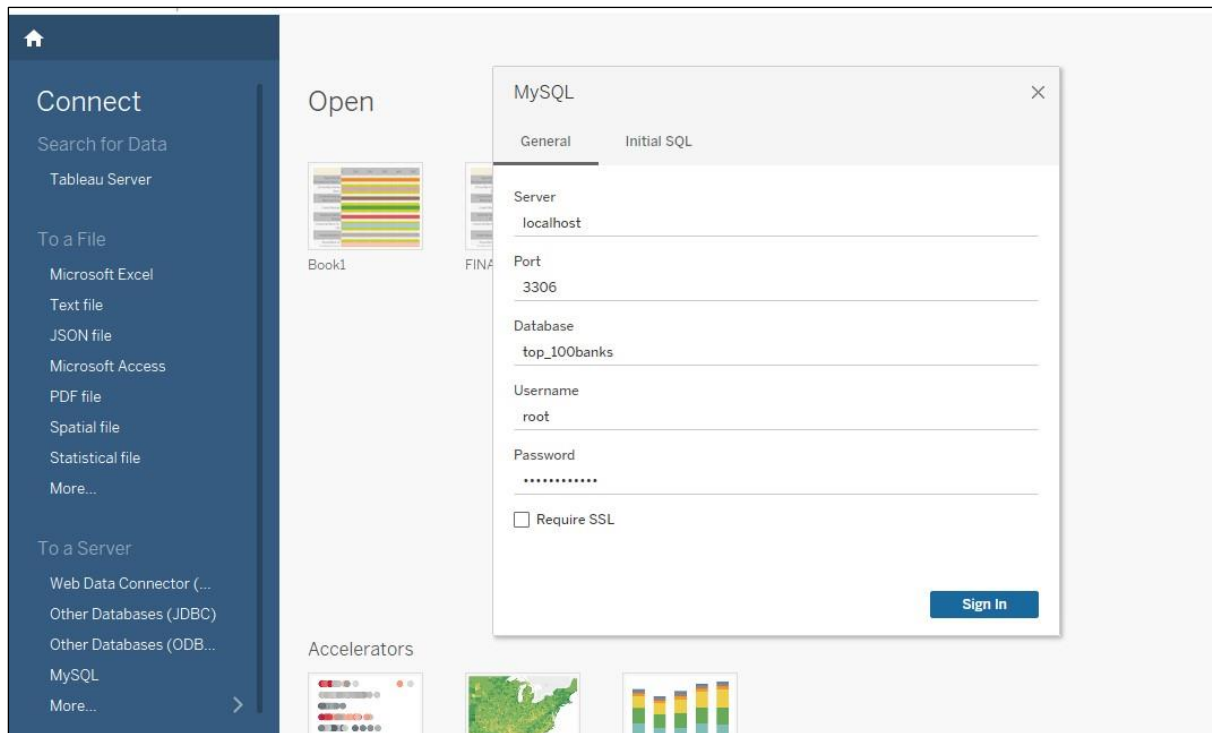
## 2.3. Connect DB With Tableau

This is carried out by identifying the Tableau Catalogue which is available with Data Management in Tableau Server and Tableau Cloud. When Tableau Catalogue is enabled in the environment, in addition to connecting to published data sources from Tableau Server or Tableau Cloud, the team connected to the databases and tables from the Search for Data

results on Tableau Desktop. Data Management included virtual connections, a central access point to data.

These are illustrated in the set of diagrams as below.





## **Milestone 3: Data Preparation**

### **3.1: Prepare the Data for Visualization**

This involve cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualised, 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.

After the data was collected and extracted from the database, the project team addressed the nuances of the data and deciphered in such as way to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.



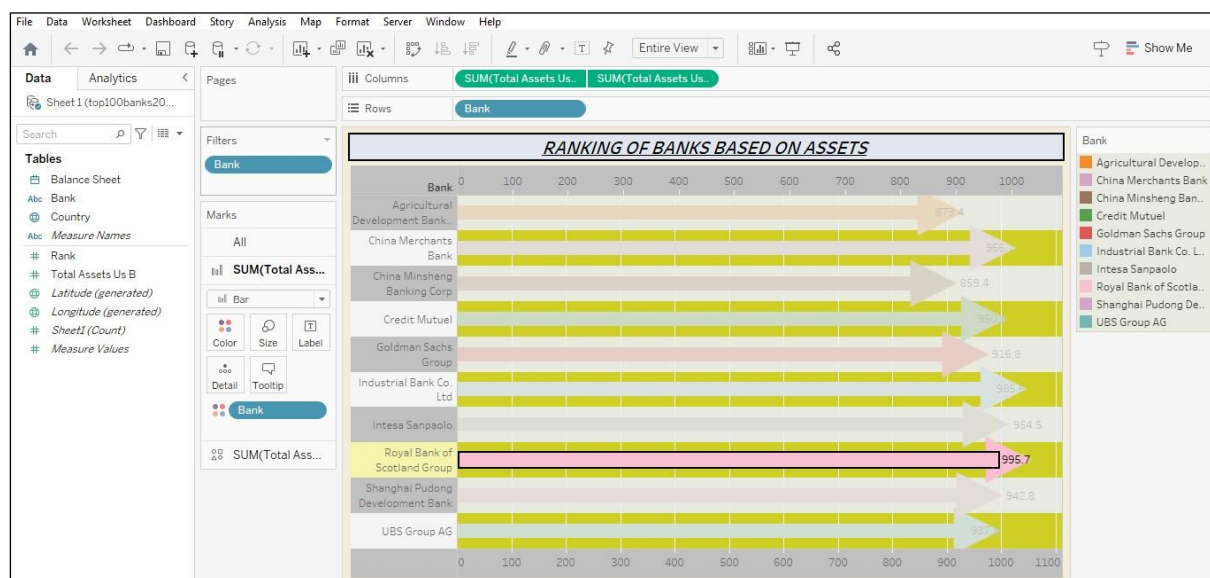
## Milestone 4: Data Visualization

### 4.1: No of Unique Visualizations

The number of unique visualizations that can be created with a given dataset was trialled by the team members using bar charts, line charts, heat maps, scatter plots, pie charts, maps. These visualizations can be used to compare performance of the banks across various geographies, track their changeover time, show distribution of assets, and the relationship between various variables, breakdown of the revenues of these banks in various landmasses and customer demographics.

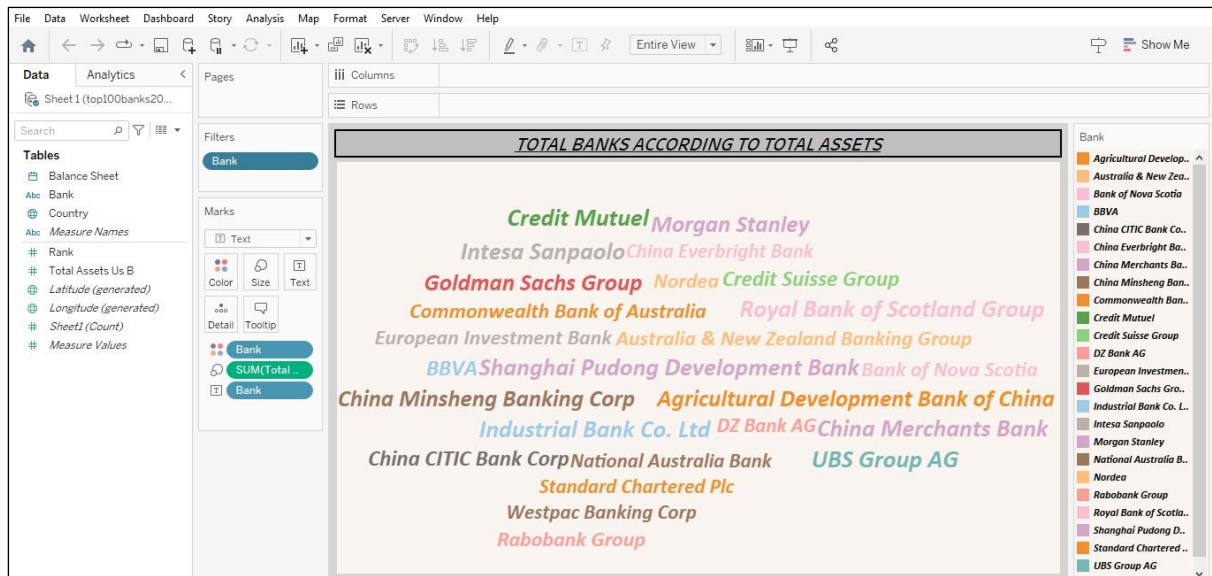
#### 4.1.1: Top Banks According Rank and Assets

After the data was scrutinised the top bank according to the ranks and assets are shown below.



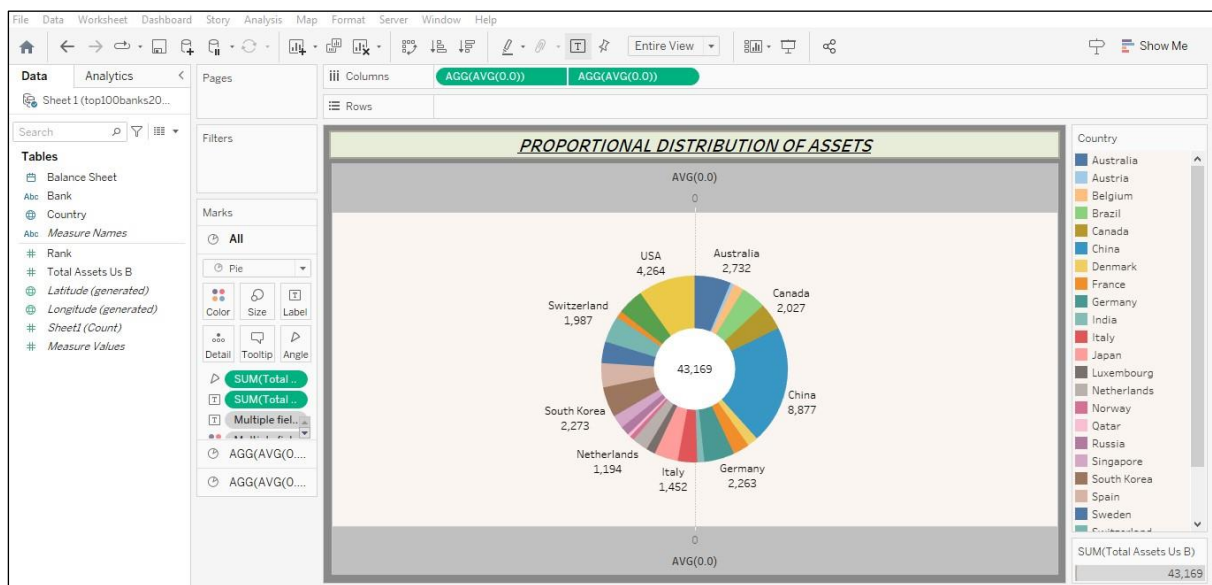
#### 4.1.2: Top banks according to total assets

The top banks according to the total assets under management is illustrated below.



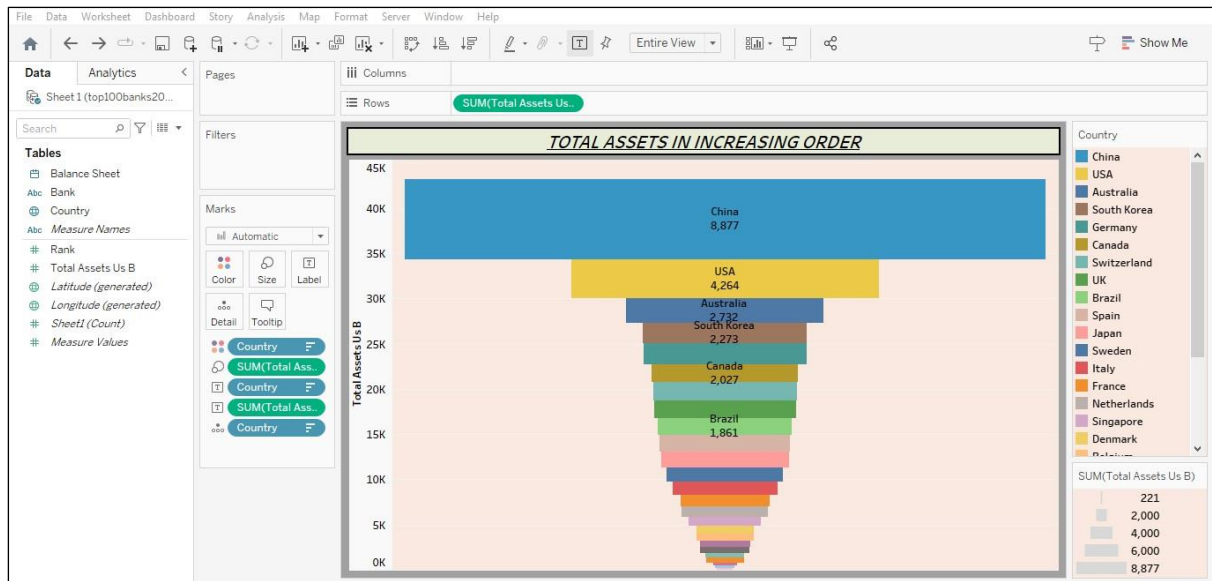
### 4.1.3. Top 10 Countries with Assets Proportion

Top 10 countries with assets proportion are shown below.

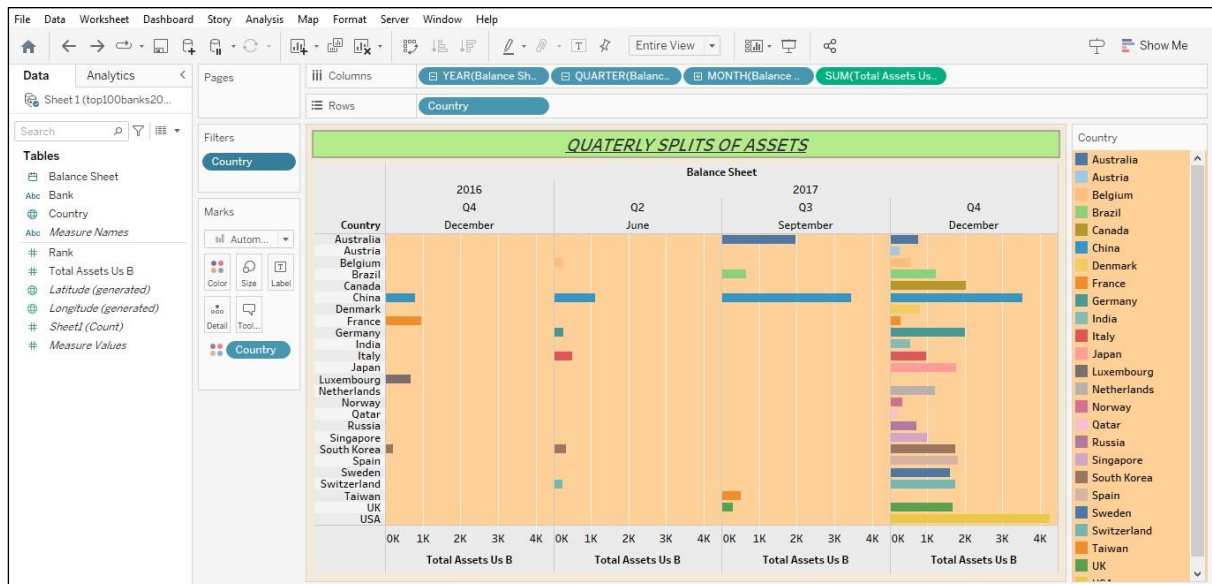


### 4.1.4: Country with Total Assets Using Funnel Chart in Increasing Order

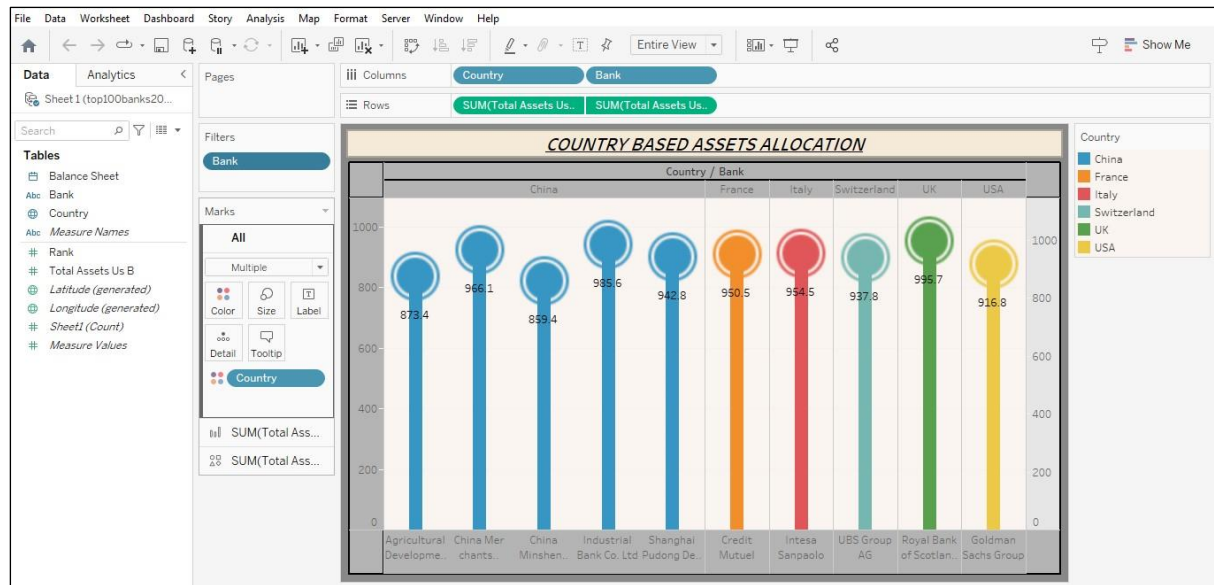
Country with Total Assets Using Funnel Chart in Increasing Order are illustrated below.



#### 4.1.5: Total Assets Analysis According to Year and Quarter



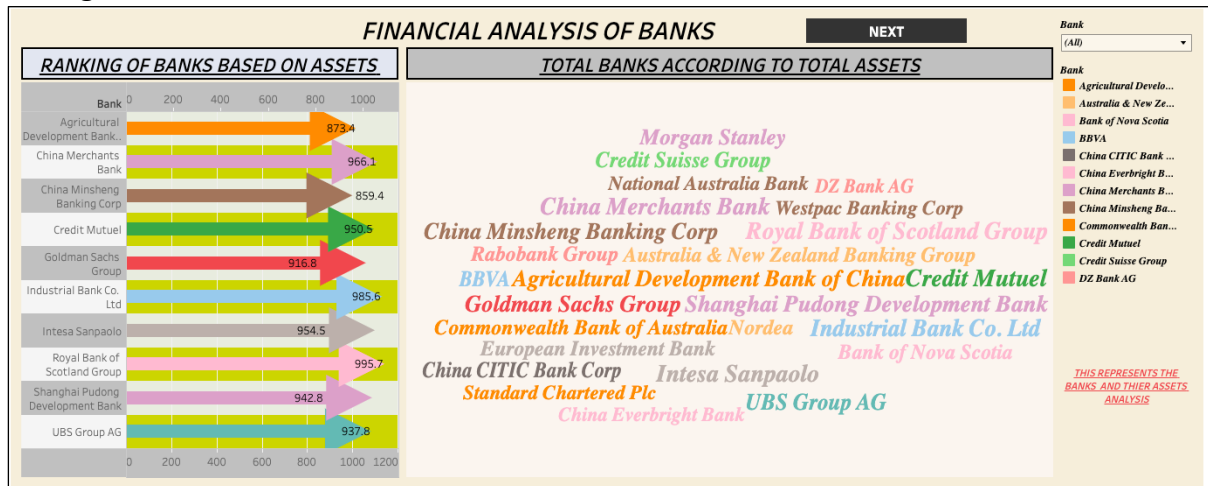
#### 4.1.6: Top banks according to country based on total assets.



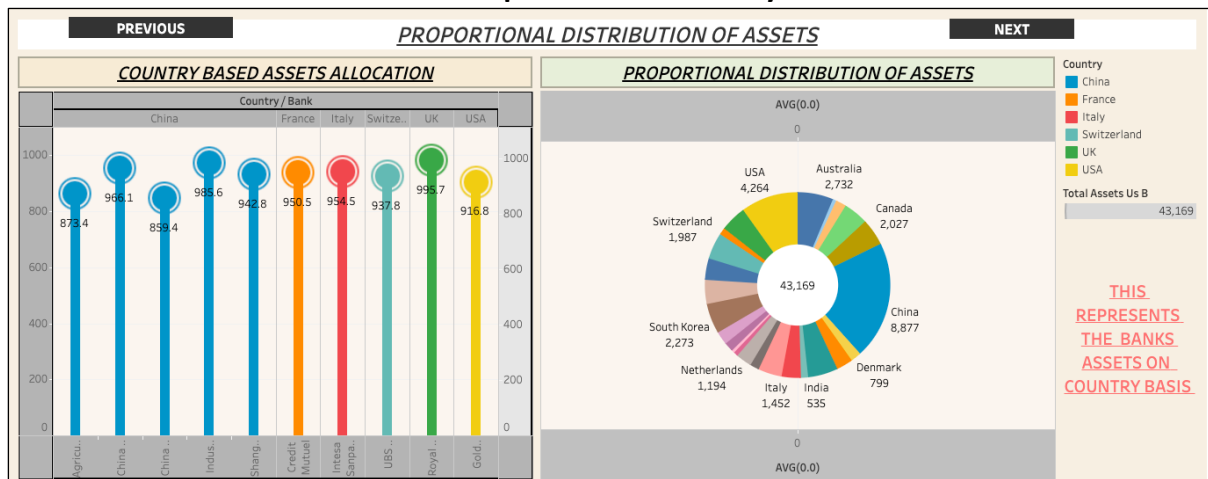
# Milestone 5: Dashboard

## 5.1 Responsive and Design of Dashboard

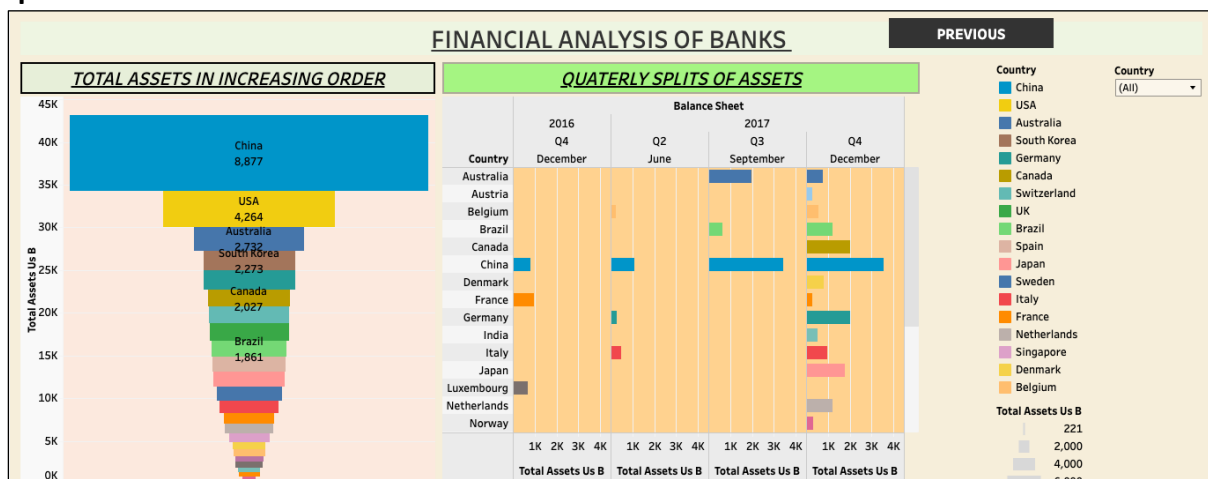
**DASHBOARD1** – The team presented this dashboard based on the assets under management.



**DASHBOARD 2** – This dashboard represents the country based allocation of assets.



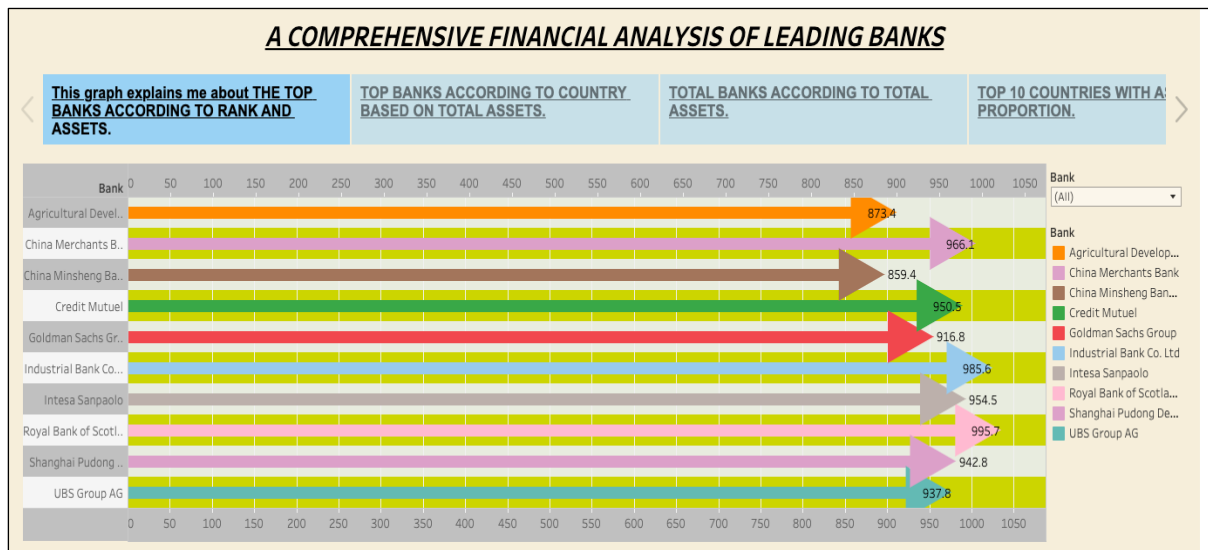
**DASHBOARD 3** – The below dashboard gives a split of total assets and the quarterly split of assets.



## Milestone 6: Story

### 6.1: No of Scenes of Story

The number of scenes in a storyboard for a data visualization analysis of the performance of banks 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 as illustrated below.

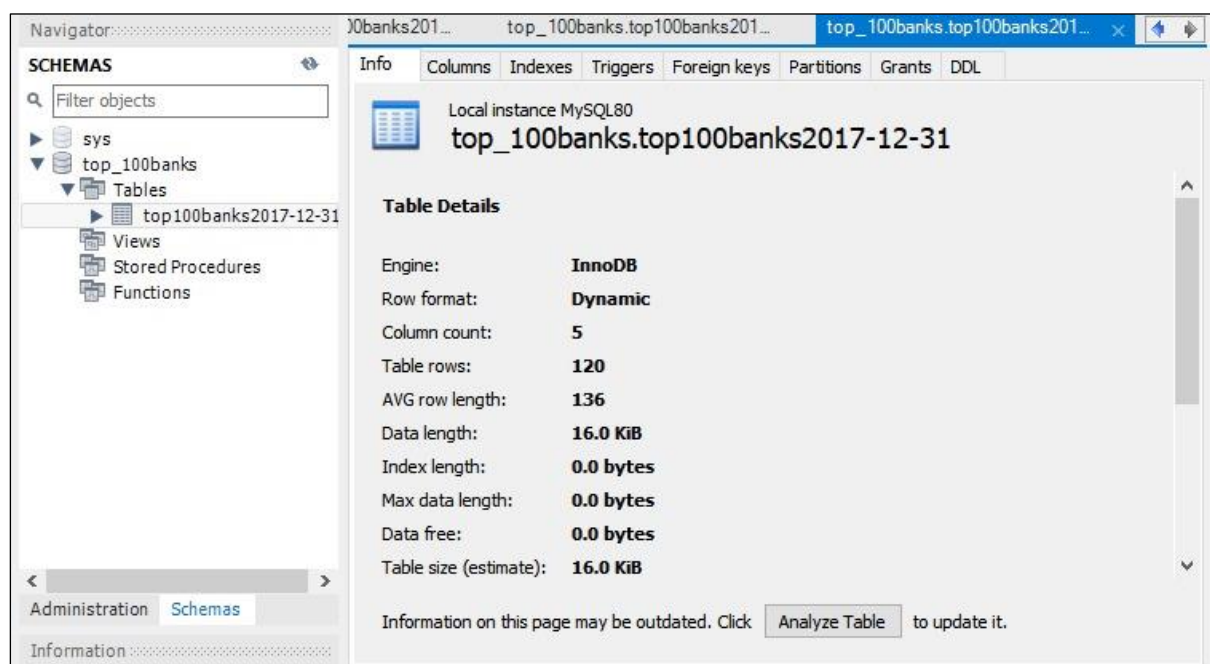
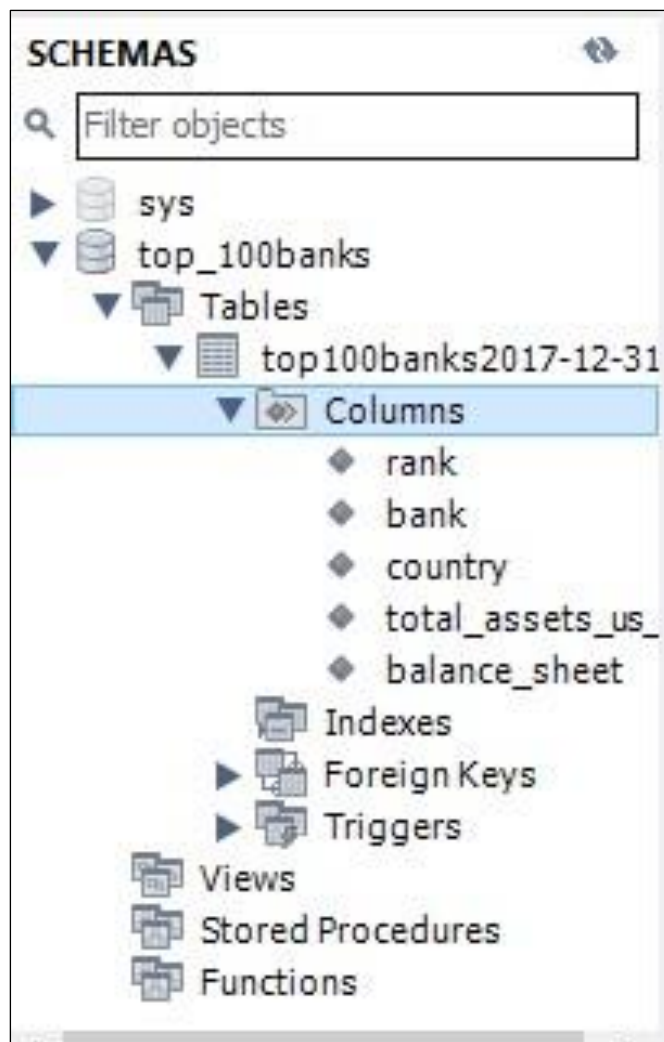


## Milestone 7: Performance Testing

### 7.1: Amount of Data Rendered To DB

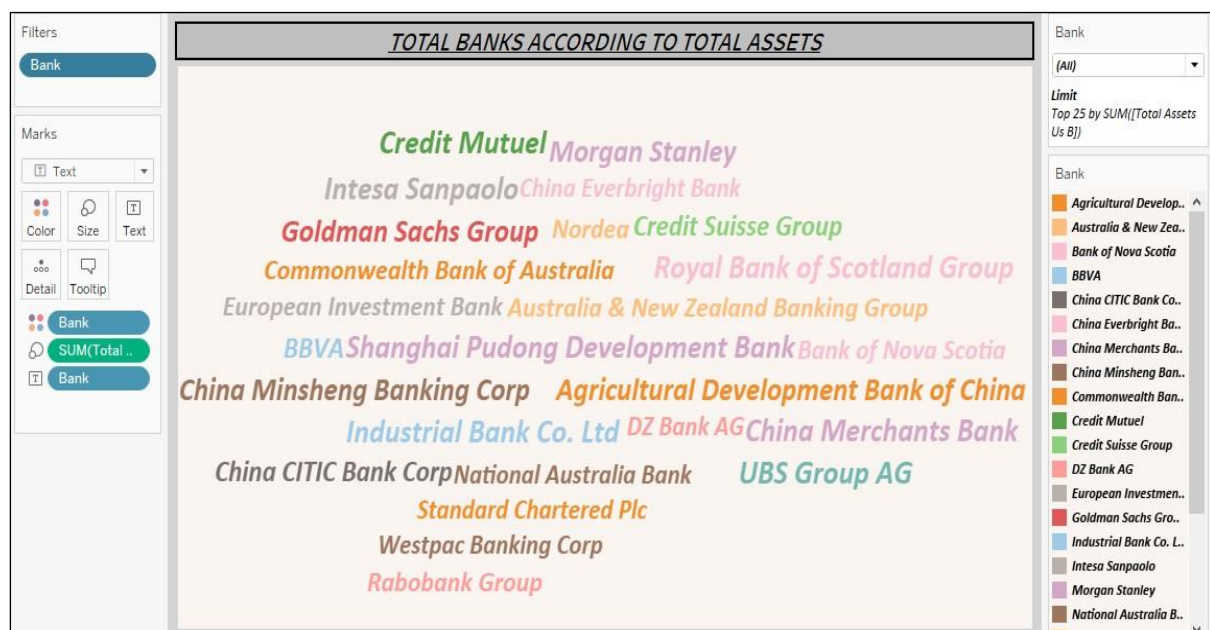
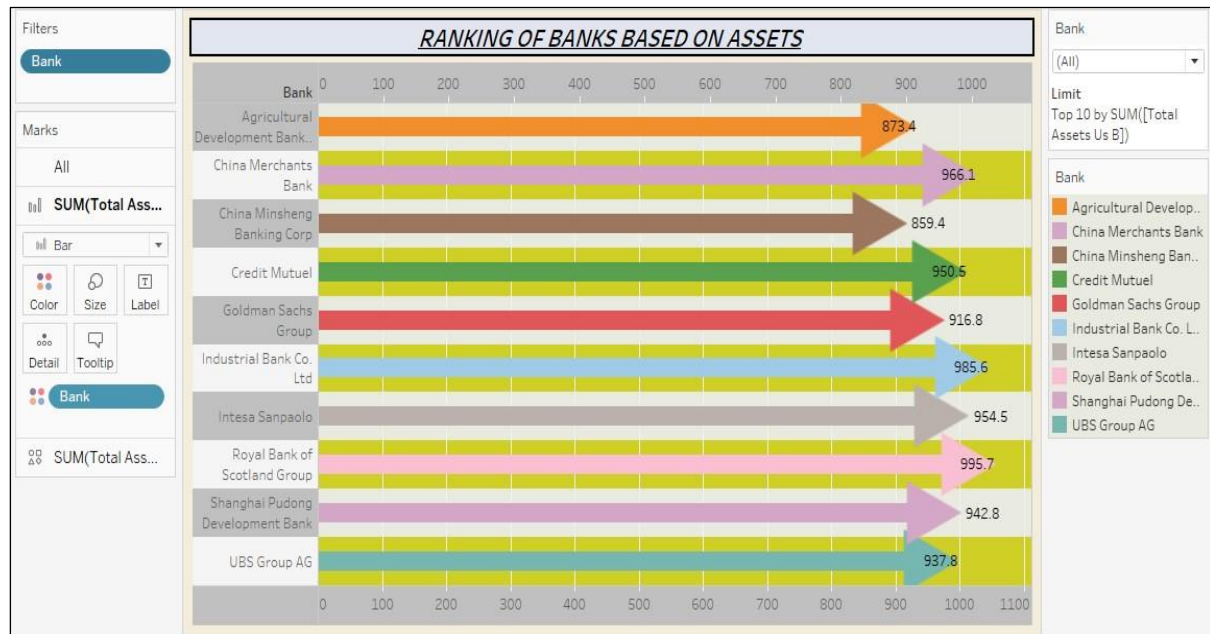
The amount of the data that is rendered to a database depends on the size of the dataset and the capacity of the database to store and retrieve data. This is schematically represented below.



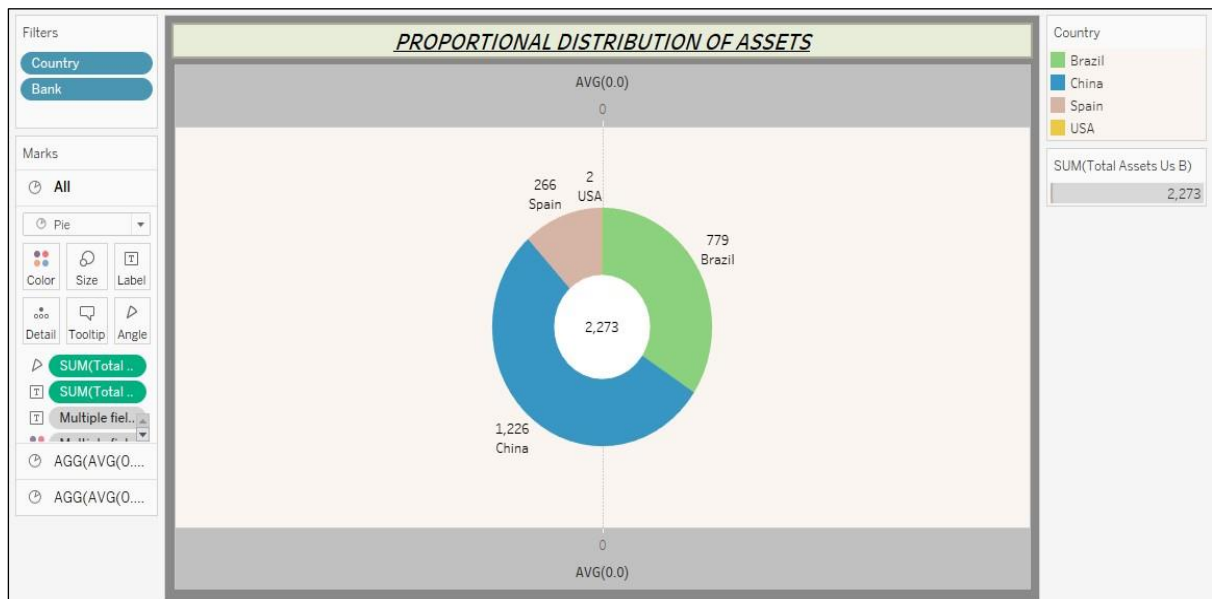
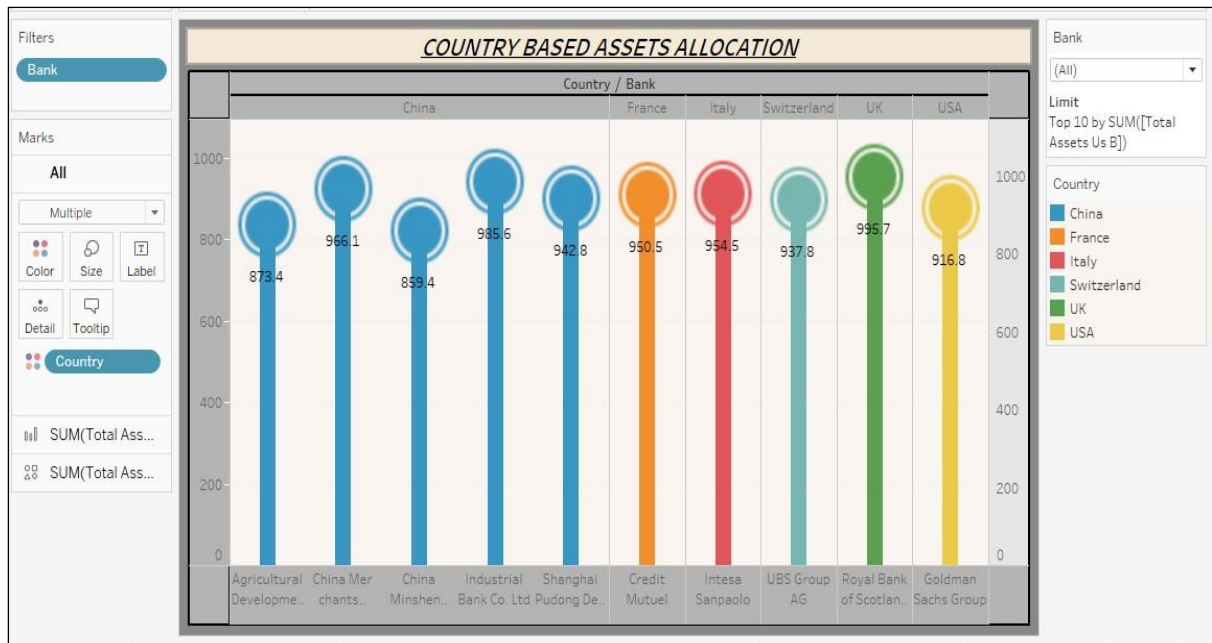


## 7.2: Utilization of Data Filters

In the project, Data filtering was used to filter down the relevant data from a wide variety of information. This process has helped the project team to eliminate unnecessary data and facilitated the project team to filter the information to suit the out requirements specified in the project brief. This enabled the team to clearly target the problem statement and by analysis the funnelled- down data.










## Tables


 Balance Sheet

▼  Country, Bank

 Country

Abc Bank

 Action (Bank)

 Action (Country)

Abc Measure Names


---

# rank

# Total Assets Us B

# bankdata (Count)

 Latitude (generated)

 Longitude (generated)

# Measure Values

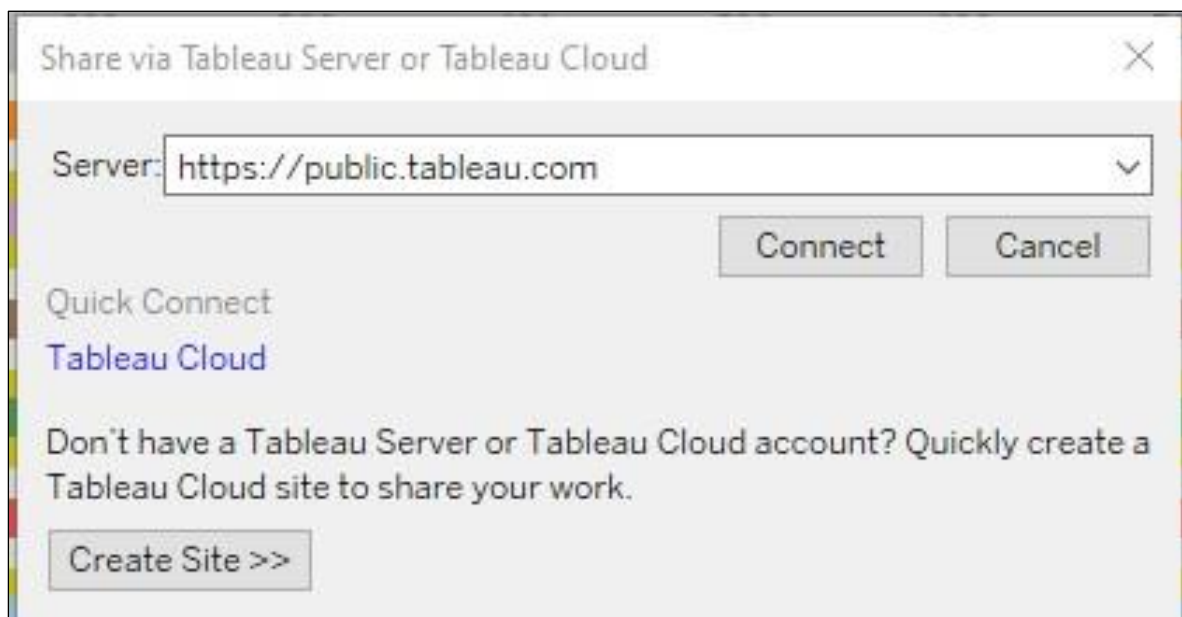
## **7.4 No of Visualizations / Graphs**

1. The project team from the data pool identified the Top banks according to the rank and assets under management and then filtered them to segregate these based on the geography.
2. The team then filtered the Top banks according to total assets and has represented them in the dashboard.
3. A list of top banks according to country in Europe and Latin America, based on total assets were also visually represented in a graphical format.
4. Top 10 Countries with assets proportion was then represented in a pe-chart format.
5. Country with total assets using funnel chart in increasing order was also pictorially represented.
6. Total assets analysis according to year and quarter was then illustrated graphically.

## Milestone 8: Web integration

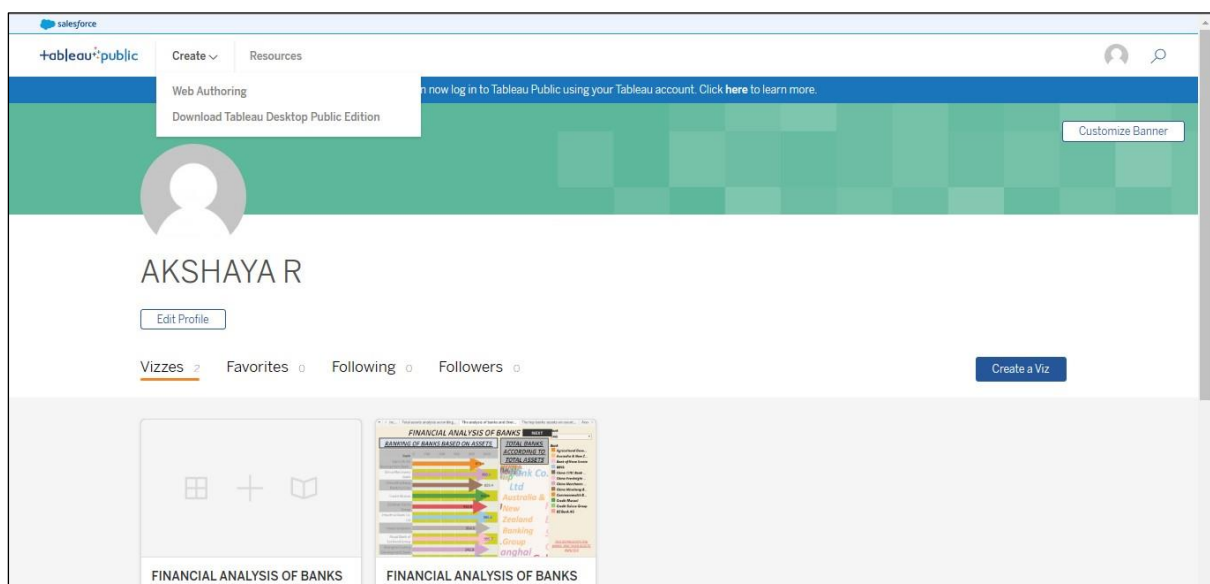
After conducting the analysis and visually representing these on the graphs, the project team integrated the data visualisation from Tableau to the web page design. This will enable the end users to gain a visual representation of the key performance and the sectorial representation of the banks in both Asia and Latin America.

### Publishing dashboard and reports to tableau public

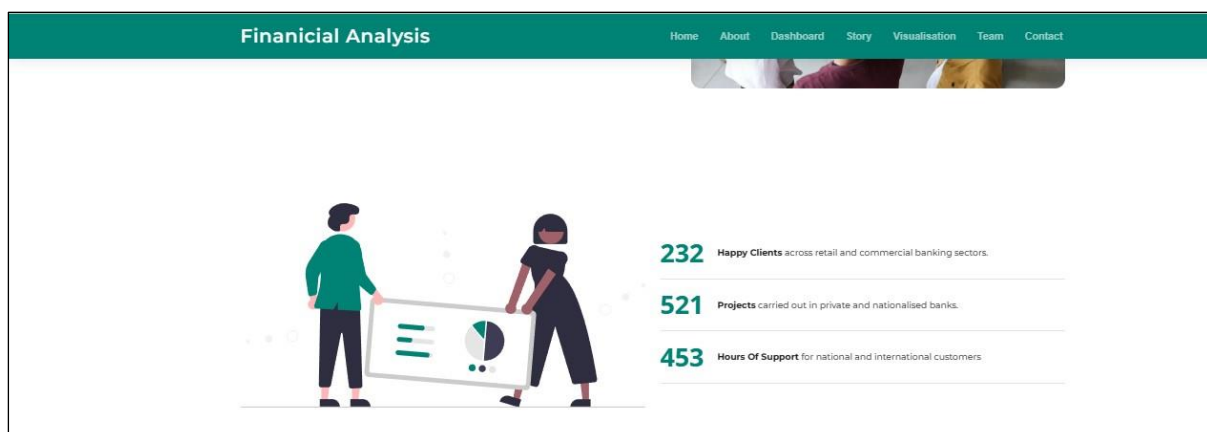
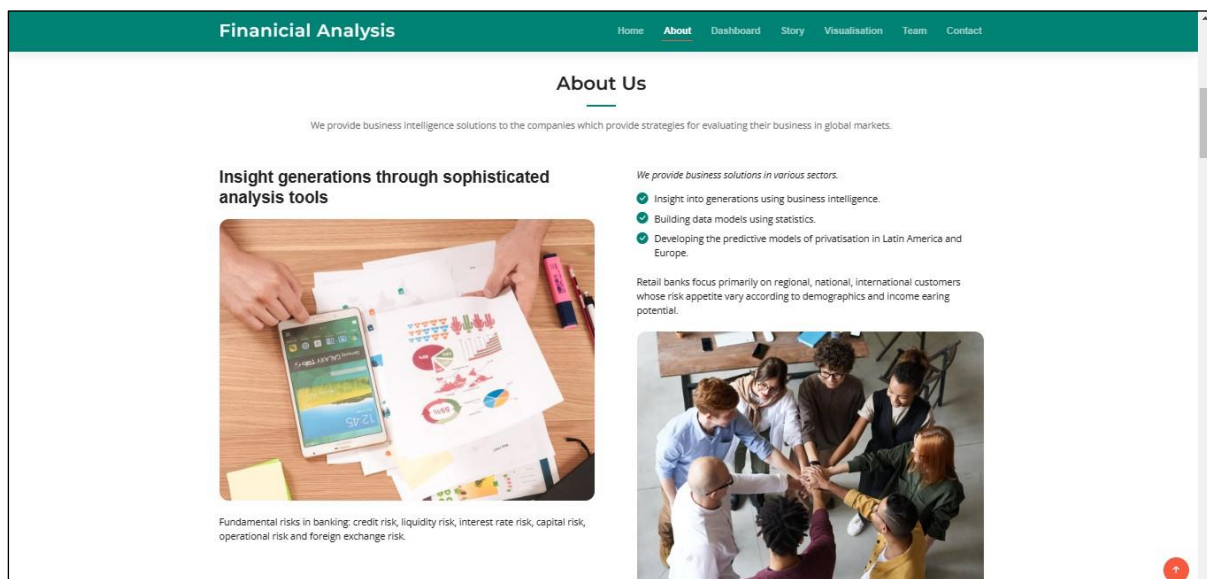
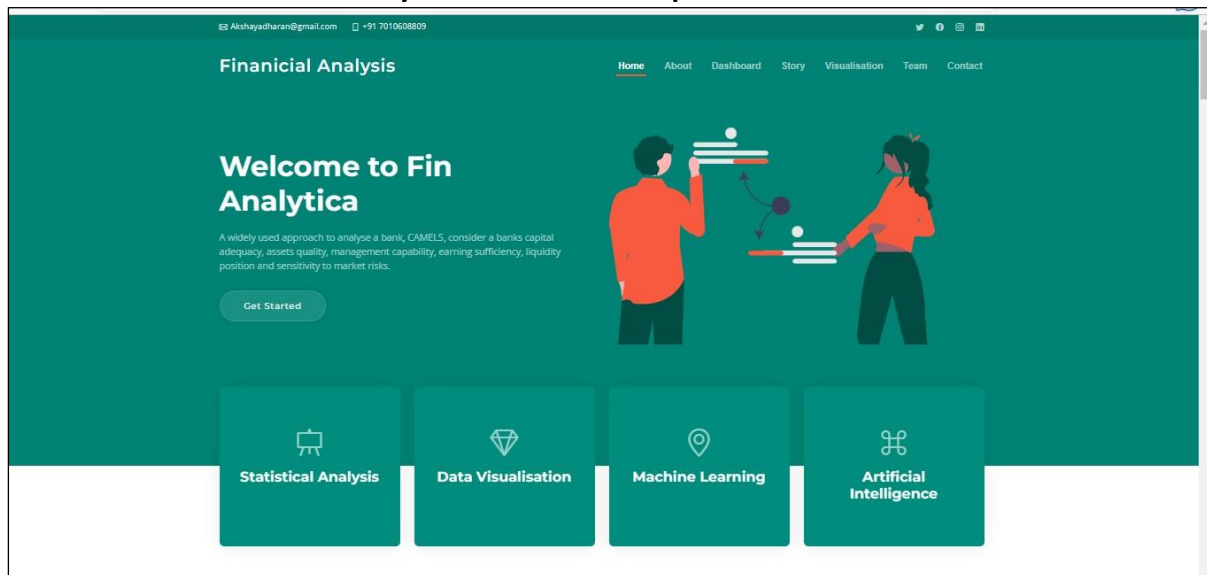


### URL FOR TABLEAU PUBLIC

<https://public.tableau.com/app/profile/akshaya.r5464>

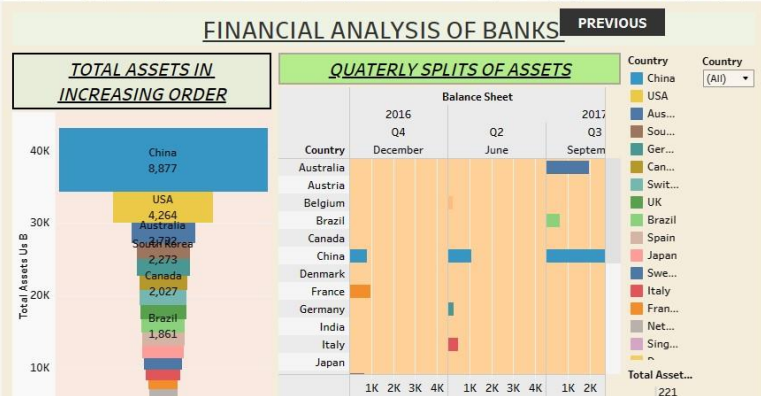


## 8.1: Embed Dashboard & Story with Web Bootstrap



to achieve strategic business objectives.

▼ < According to year and banks a... Story 1 >



Work along side data scientists these colleagues build high quality data pipelines to identify which customers need financial support.

▼ < According to year and banks assets on count... The top banks assets on count... The analysis of banks and thier... According to year and banks a... Story1 >

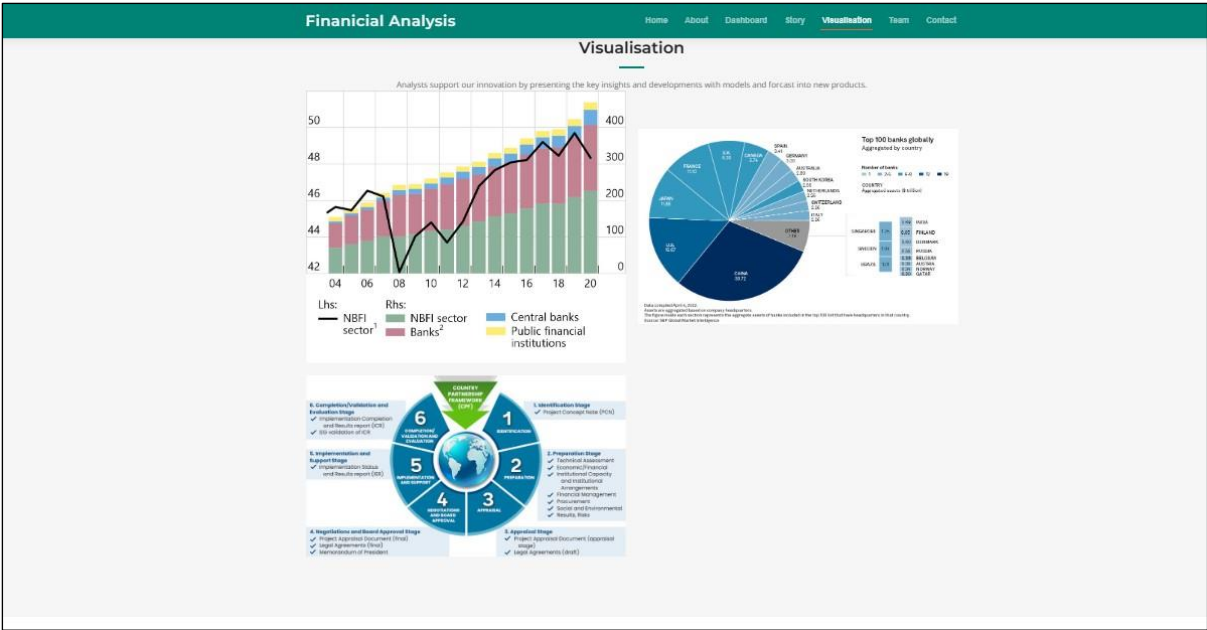
## A COMPREHENSIVE FINANCIAL ANALYSIS OF LEADING BANKS

This graph explains me about THE TOP BANKS ACCORDING TO RANK AND ASSETS.

**TOP BANKS ACCORDING TO COUNTRY  
BASED ON TOTAL ASSETS.**

TOTAL E  
ASSETS





Financial Analysis

### Our Team

Our team comprises of an executive group which set the strategy and oversee its delivery, monitoring financial performance and ensure that appropriate succession planning arrangements are in place.

**Akshaya R**  
Team Lead

**Bhavani S**  
Team Member

**Gayathri N**  
Team Member

**Rajesh Kanna G**  
Team Member

↑



Financial Analysis

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1047, 345,  
Thiruvottiyur High Rd,  
Mottai Garden, Old Washermanpet,  
Chennai,  
Tamil Nadu 600021,  
India

Phone: +917010608809  
Email: info@finalaytica.com

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## **ADVANTAGES AND DISADVANTAGES**

This project highlights the positive trends in the banking sector and the advantages of privatisation of the banks and the benefits it brings to the customers and to the public. However, as the project focus only on European and Latin American market, the analysis will be limited to the banks in these countries.

## **APPLICATIONS**

The main application of the project is that it is used to compare the performance of the banks before and after privatisation and how privatisation will benefit the customers of these banks.

## **FUTURE SCOPE**

From the analysis of the project, it can be concluded that it can be used as a baseline for future comparison in other markets and other countries.

**END OF REPORT**