Low Level Design(LLD)

Investment Analytics

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Version1.0

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❖ Problem Statement

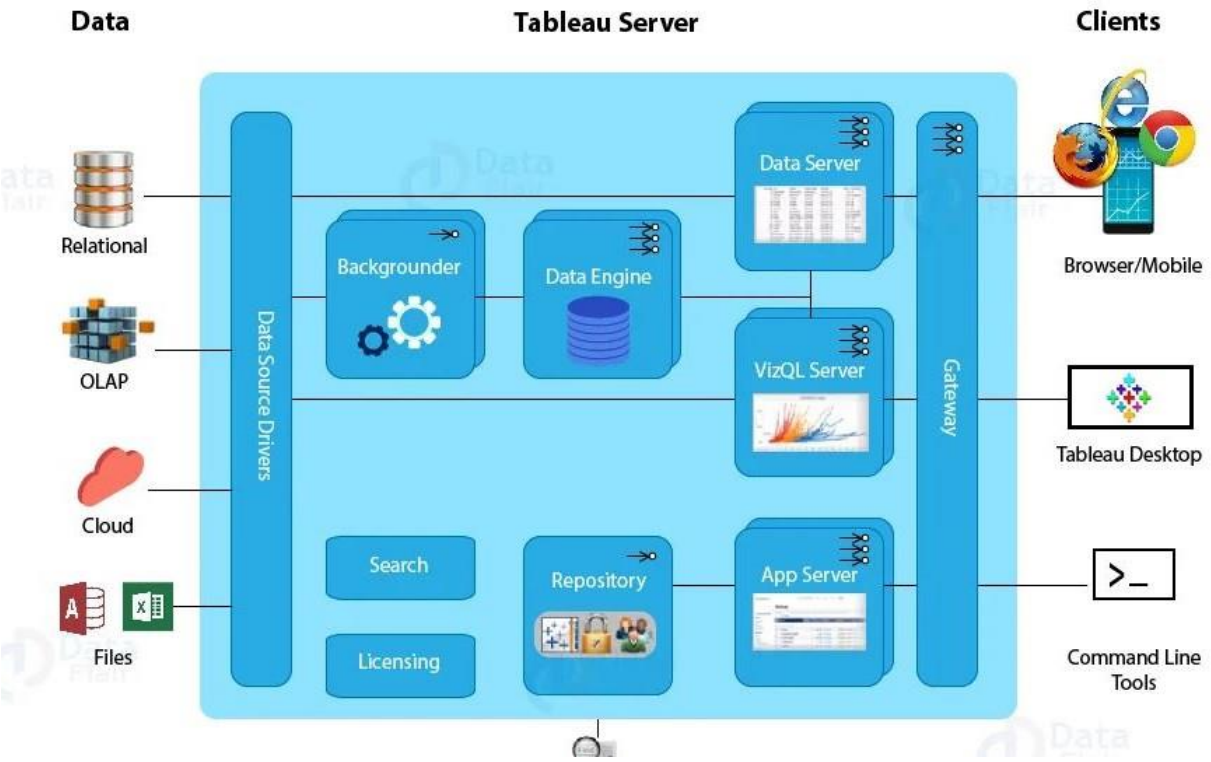
An investment involves putting capital to use today in order to increase its value over time. One of the examples of investments are Foreign Direct Investments(FDI).So to minimize the risk before investing into things we always look for historic data of investment to reduce the risk of loss that may happen in future. This project focuses on analysis of FDI made in India from the year 2000 - 2017 in various sectors.

The objective of the project is to perform data visualization techniques to understand the insight of the data. This mainly aims to apply visualization tools such as Tableau . Also use Microsoft Excel to get a better understanding of the data.

❖ Scope

The aim of this project is to find year- wise and sector - wise investments made from the year 2000 - 2017 and to find the highly invested and least invested sectors. All insights are found using MS Excel and also the dashboard is created using it. Tableau is used for better experience of data visualization. Through this dashboard one can easily find the Foreign Direct Investments made year-wise and sector-wise.

❖ Architecture



1. Data server:- Data sources are the primary component of Tableau Architecture. It is capable of blending data from a variety of sources. Furthermore, it can be used to establish relationships between different types of data an excel file, a database, and a web application at the same time.
2. Data connector:- The Data Connectors provide an interface to connect external data sources with the Tableau Data Server.
   Tableau has an in-built SQL/ODBC connector that can be connected to any database without using its native connector. Tableau Desktop has the option to select both extracted and live data.

3. Components of Tableau server: Different types of components of the Tableau server are:
    (1) Application server
    (2) VizQL server
    (3) Data server

4. Gateway: The gateway that directs requests from users to Tableau components. When the client sends a request, it is forwarded to the external load balancer for processing. The gateway works as a distributor of processes to different components.
5. Clients: The visualizations and dashboards in the Tableau server can be edited and viewed using different clients. Clients are web browsers, mobile applications, and Tableau Desktop.
6. Web Browser: Web browsers like Google Chrome, Safari, and Firefox support the Tableau server. By using these web browsers, you can edit the visualization and content on the dashboard.
7. Mobile Application: The dashboard from the server can be interactively visualized using a mobile application and browser.

❖ Data Description

1. Dataset consist of Sectors and Years in which investments were made from year 2000 – 2017.
2. For getting the insights and to visualize it in tableau. First we analyzed the data using different features.
3. Data was distributed into different sheets so make charts out of it for creating a dashboard.
4. In the Transformation Process, we will convert our original datasets with other necessary attributes format.
5. Following are the features/attributes descriptions that we found out from excel so to include them in Tableau.

i) Sector- Wise Analysis – Consist of all sectors as row and years as columns which included the investment amount in billion (US dollars) sector wise.

ii) Year wise Analysis – Consist of all the year and their sum of investments, year wise

iii) Top 5 sectors – It consisted of the top 5 sectors in which the investments were made from the year 2000 – 2017.

iv)Bottom 5 sectors - It consisted of the bottom 5 sectors in which the investments were made from the year 2000 – 2017.

v) Rising Sectors - It consisted of the sectors in which the investments found to be increased in from the year 2014 – 2017.

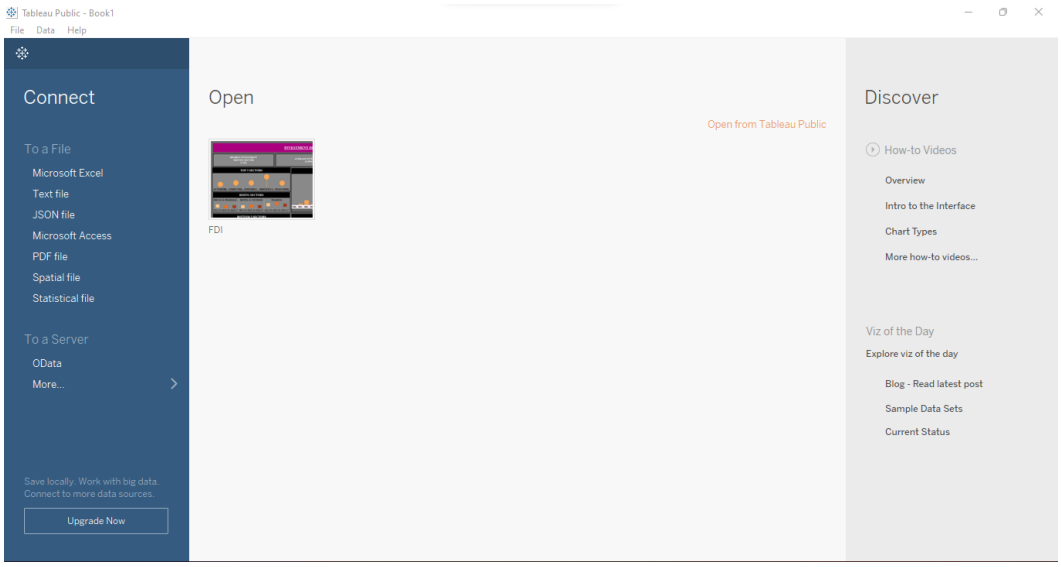
vi)Highest Investments – This is text box which actually shows the sector in which highest investments were made throughout the years and its total sum.

vii) Lowest Investments – This is text box which actually shows the sector in which lowest investments were made throughout the years and its total sum.

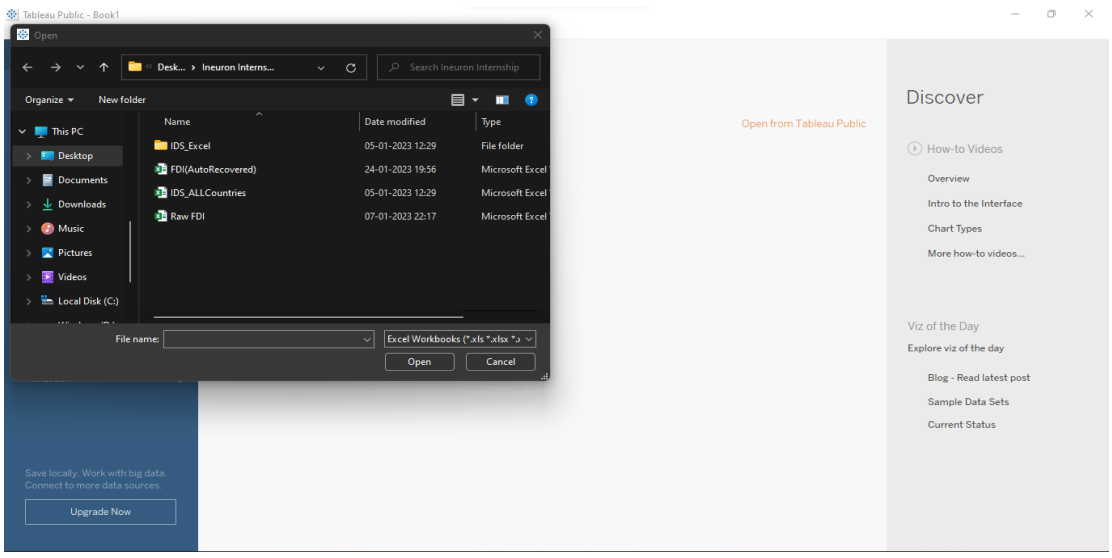
viii) Average Investments - This is text box which actually shows the sector in which average investments were made throughout the years and its total sum.

❖ Data Insertion into Tableau –

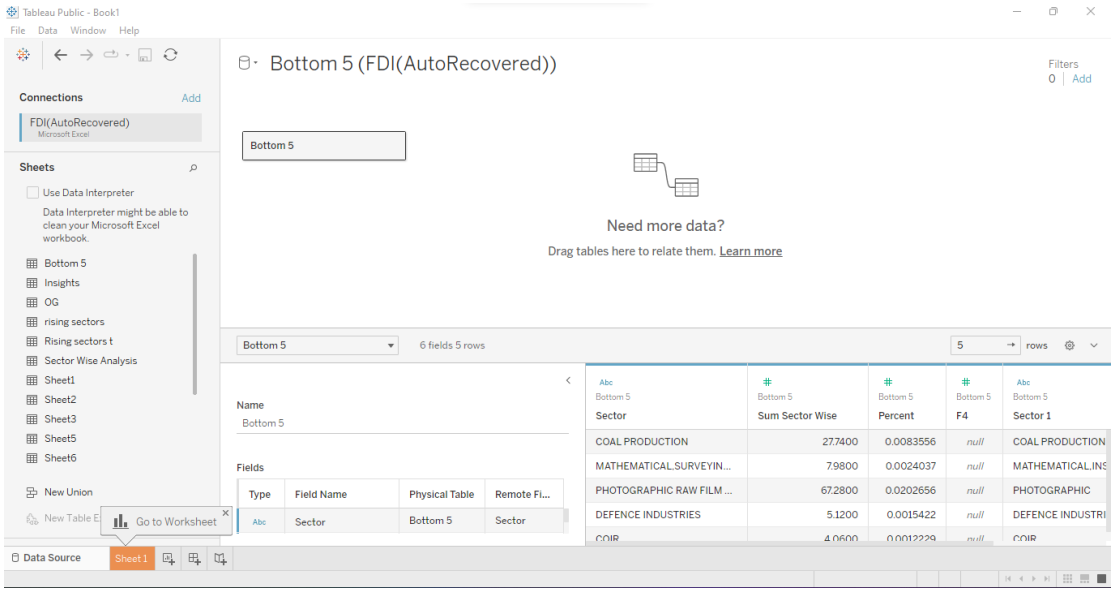
1) From above steps we created different sheets for different attributes to showcase them into charts.
2) Now, we will open the Tableau Public and insert out data to create charts.
3) Following are the steps to select and visualize data:



4)Click on Microsoft Excel, since we have our data in Excel file
5) Select your Excel file.

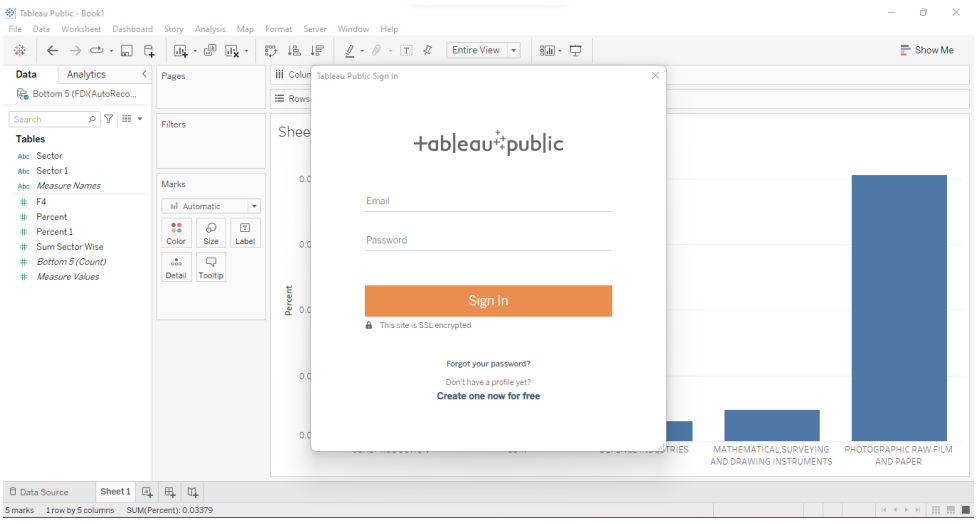


6) After the file is loaded in Tableau, select the table you want to make chart out of it.



❖ Deployment

1)After the charts are created, align them into dashboard to create a visual.
2) To save dashboard we have to Sign In first.



3)After entering the email and password you'll sign in into Tableau Public and work will be saved.