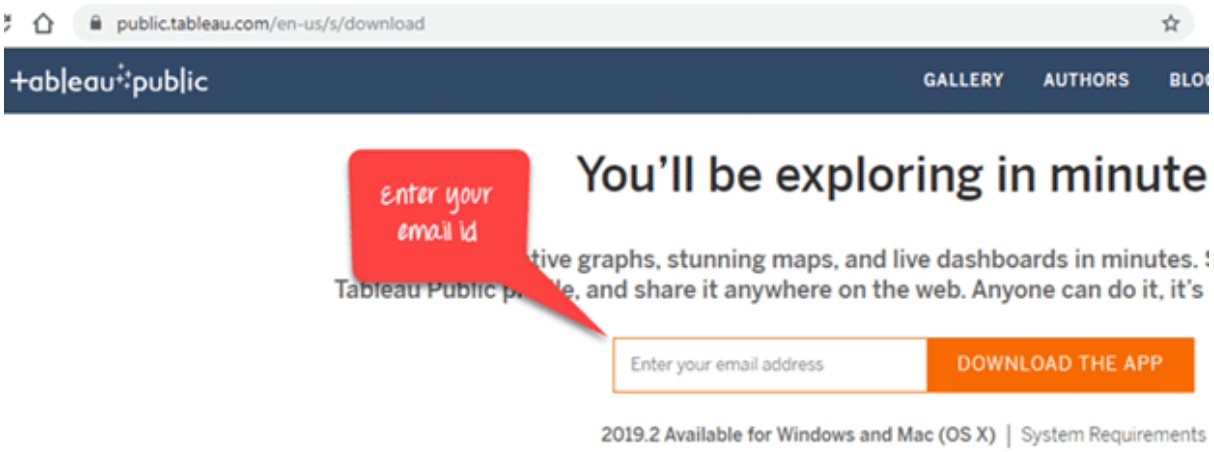
EXPERIMENT NO. 10

Aim: Creating an interactive drill-down dashboard to explore sales data by product categories using Tableau. Also, visualise using scatterplot, stacked area chart, bar chart, waterfall chart etc.

Theory : Explain feature of Tableau.
Describe the application of Tableau.

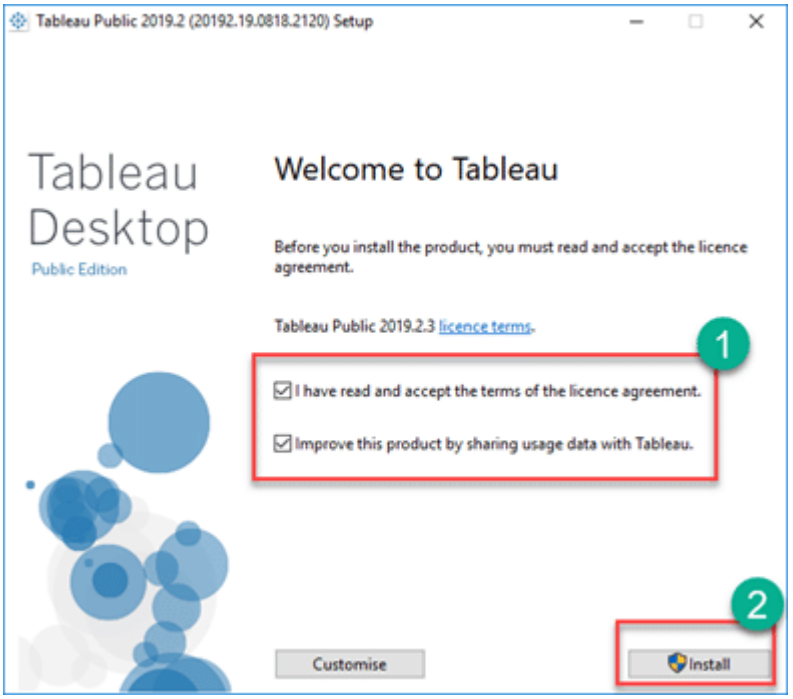
Downloading and Installing Tableau Public

1- Visit the URL https://public.tableau.com/en-us/s/download on your web browser. Once the window opens, enter your email id when asked, and click on the "Download the App" button.



2- The file will start downloading in ".exe" format. You can view the download progress on the bottom-left corner of the tab.

3- Once the progress is 100 percent, open the file. Accept the terms and conditions by selecting the checklist boxes and click on the "Install" button.



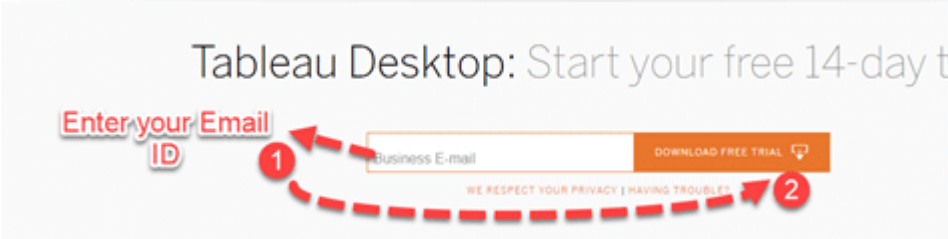
4- Once the installation is complete, open Tableau and start the screen of Tableau Public as shown below.

Downloading and Installing Tableau Desktop

1- Enter this URL https://www.tableau.com/products/desktop on your web browser.

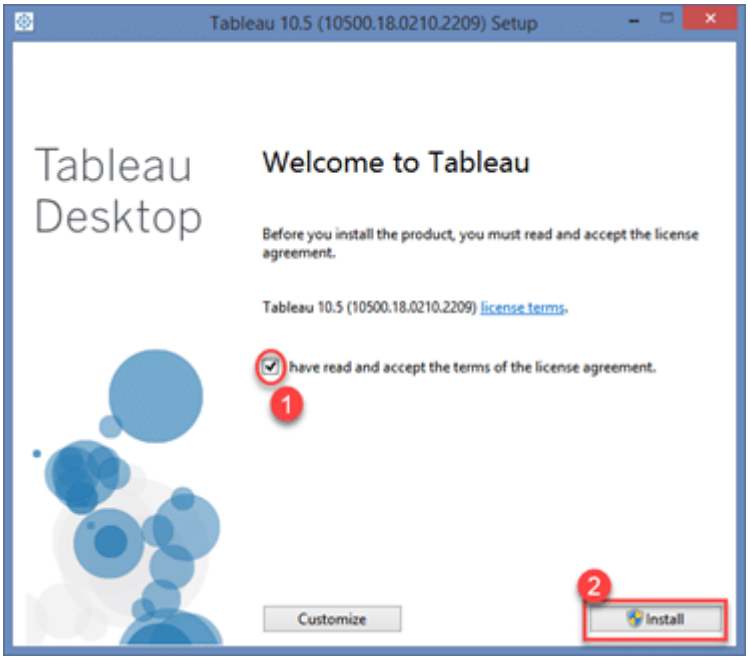
2- Click on the "TRY NOW" button in the top-right corner of the website as shown below.

3- Once you click on the "TRY NOW" button, you will be redirected to a page that will ask you to feed in your official email address. After filling in the email address, click on the "DOWNLOAD FREE TRIAL" button.



4- The latest version of Tableau Desktop will start downloading, and you will be able to view the download progress in the bottom-left corner of the screen.

5- Once downloaded, open the file. Accept the terms and conditions, and click on the "Install" button.



6- A pop-up option will appear asking for the approval of the administrator to install the software. Click on "YES" to approve and move further.

7- On approval, the installation will start. On the completion of the installation, open Tableau.

8- This is the final stage that asks for registration. Click on "Activate Tableau" and enter your license details or credentials.

9- Click on "Start Trial Now" and wait for the registration process to complete.

10- Once it is completed, open the Tableau screen as shown below.

Practical

[Data Set of dairy SALE]

Step-by-Step Guide to Creating Advanced Visualizations in Tableau Using the Employee Dataset

Step 1: Uploading the Dataset in Tableau

1. **Open Tableau Desktop** and click on **"Connect to Data"**.
2. Select **"Text File"** (since the dataset is a CSV).
3. Browse and select the CSV file containing the employee data.
4. Drag the dataset into the **"Data Source"** tab.
5. Check if the data types (e.g., salary as a number, joining date as a date) are correctly detected. If not, adjust them in the **Data Pane**.

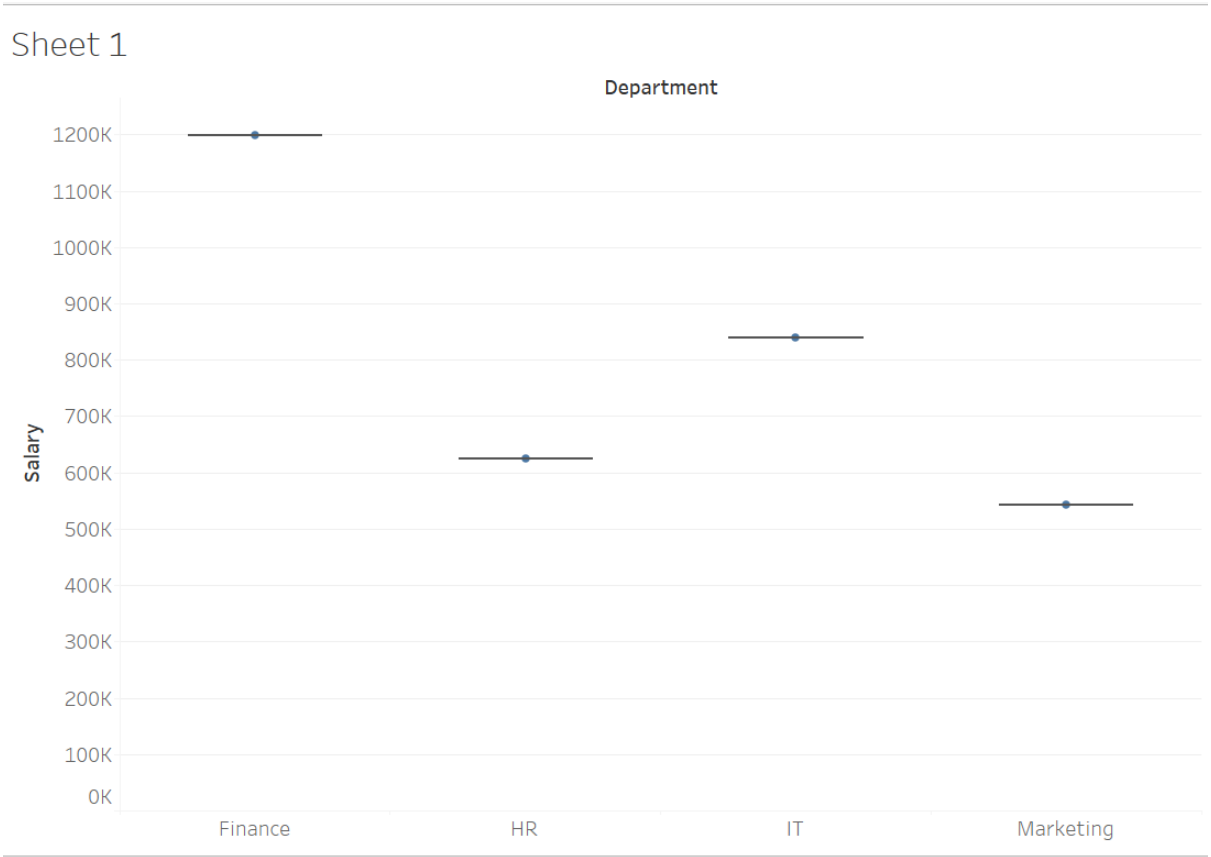
Step 2: Exploring the Data

1. Click on **"Sheet 1"** to start visualization.
2. The **"Dimensions"** (categorical data like Department, Name) and **"Measures"** (numerical data like Salary, Performance Score) will appear on the left.
3. Drag and drop fields into the **Columns** and **Rows** sections to start building visualizations.

Step 3: Creating Advanced Visualizations

1. Salary Distribution Across Departments (Box Plot)

- Drag **Department** to Columns.
- Drag **Salary** to Rows.
- Click on **Show Me** and select **Box-and-Whisker Plot**.
- This will show the distribution of salaries within each department.



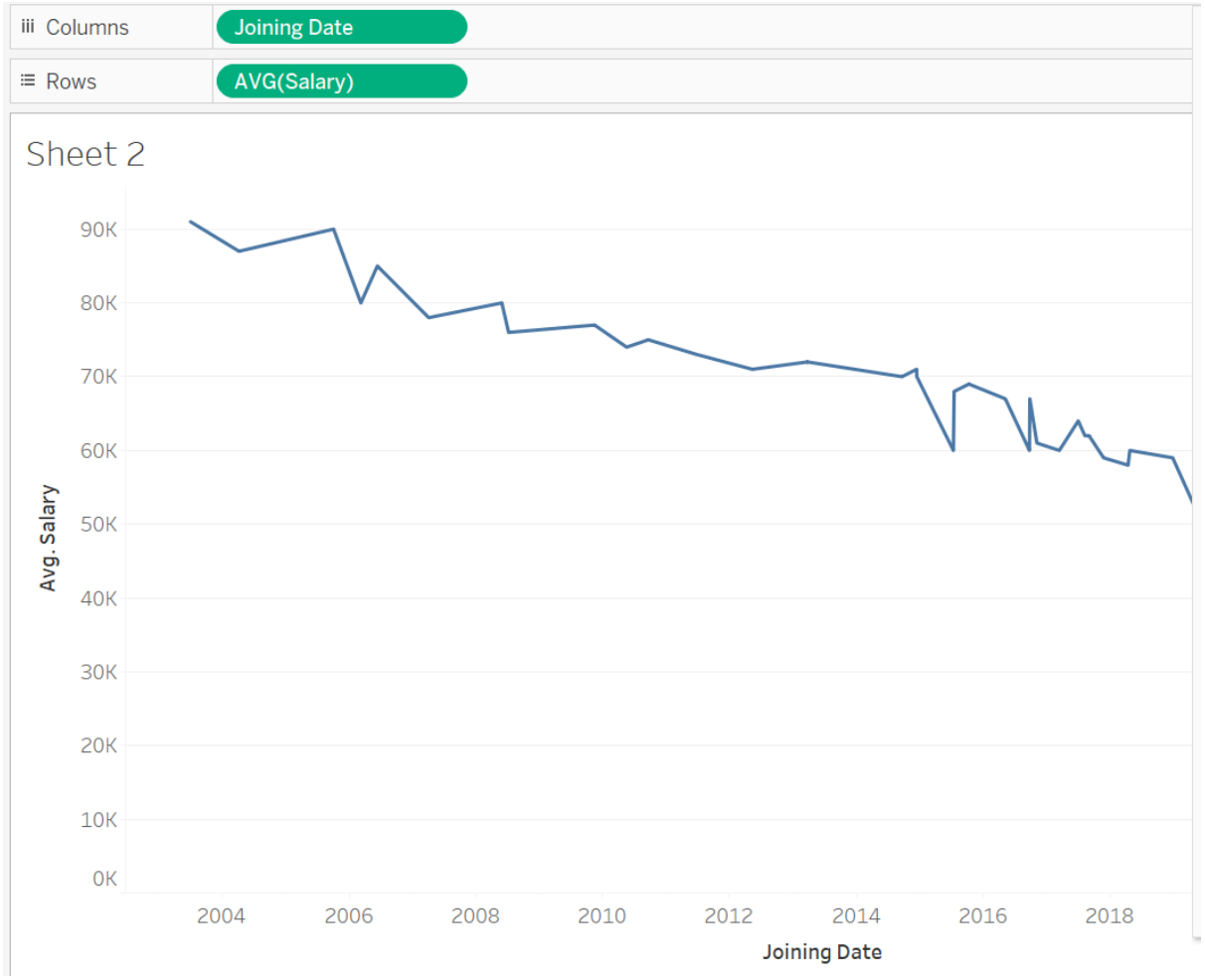
2. Performance Score vs. Experience (Scatter Plot)

- Drag **Experience** to Columns.

- Drag **Performance Score** to Rows.
- Drag **Department** to Color to differentiate by department.
- This will help visualize how experience correlates with performance.

3. Salary Trend Over Time (Line Chart)

- Convert **Joining_Date** to a date format if necessary.
- Drag **Joining_Date** to Columns.
- Drag **Average Salary** to Rows.
- Click on **Show Me** and select **Line Chart**.
- This will show how salaries trend over time.

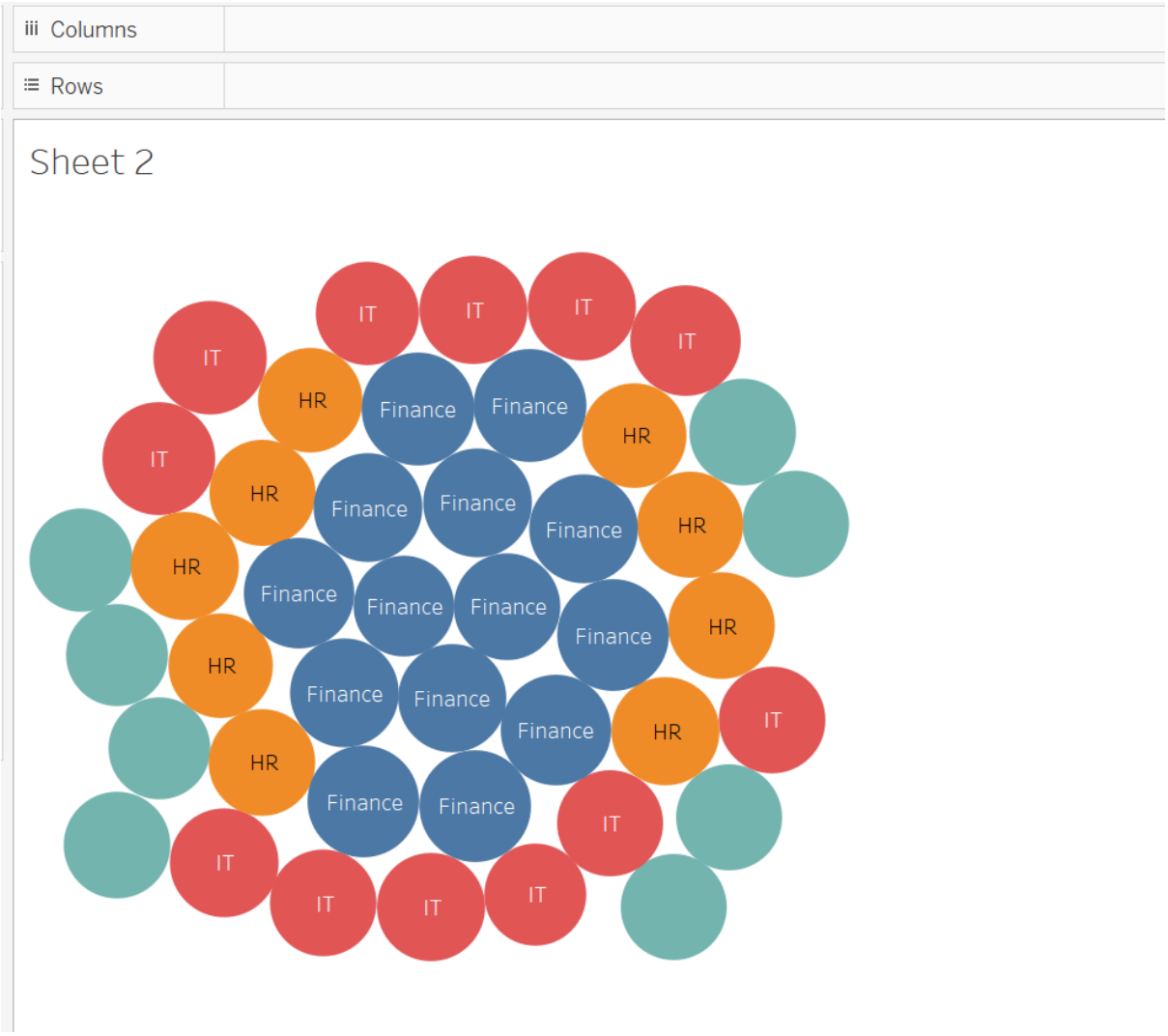


4. Employee Count by Department (Bar Chart)

- Drag **Department** to Columns.
- Drag **Employee_ID (Count)** to Rows.
- Click on **Show Me** and select **Bar Chart**.
- This will show the number of employees in each department.

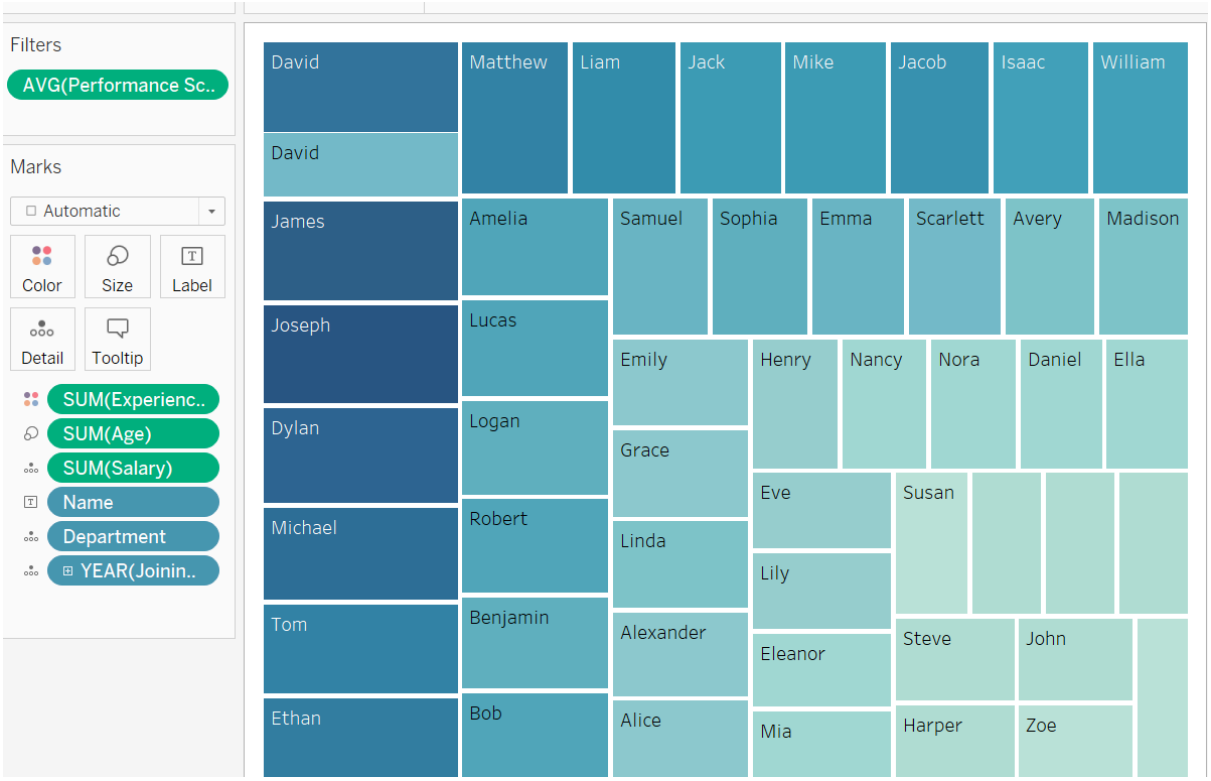
5. Salary vs. Performance (Bubble Chart)

- Drag **Salary** to Columns.
- Drag **Performance Score** to Rows.
- Drag **Experience** to Size (so the size of bubbles represents experience).
- Drag **Department** to Color.
- This will visualize how salary and performance are related.



Step 6: To Create a Heat Map

1. **Drag Department to Columns** (Categorical Dimension).
2. **Drag Employee_ID to Rows** (to count employees in each department).
3. **Change Marks Type to "Square"** from the Marks card.
4. **Drag Salary to Color** (Higher salaries appear darker/lighter based on the color scale).
5. **Drag Performance Score to Label** (Shows performance for each department).
6. **Adjust Colors**:
    - Go to the **Color** legend and choose a **gradient** color (e.g., Red to Green).
    - Darker colors indicate higher salary values.

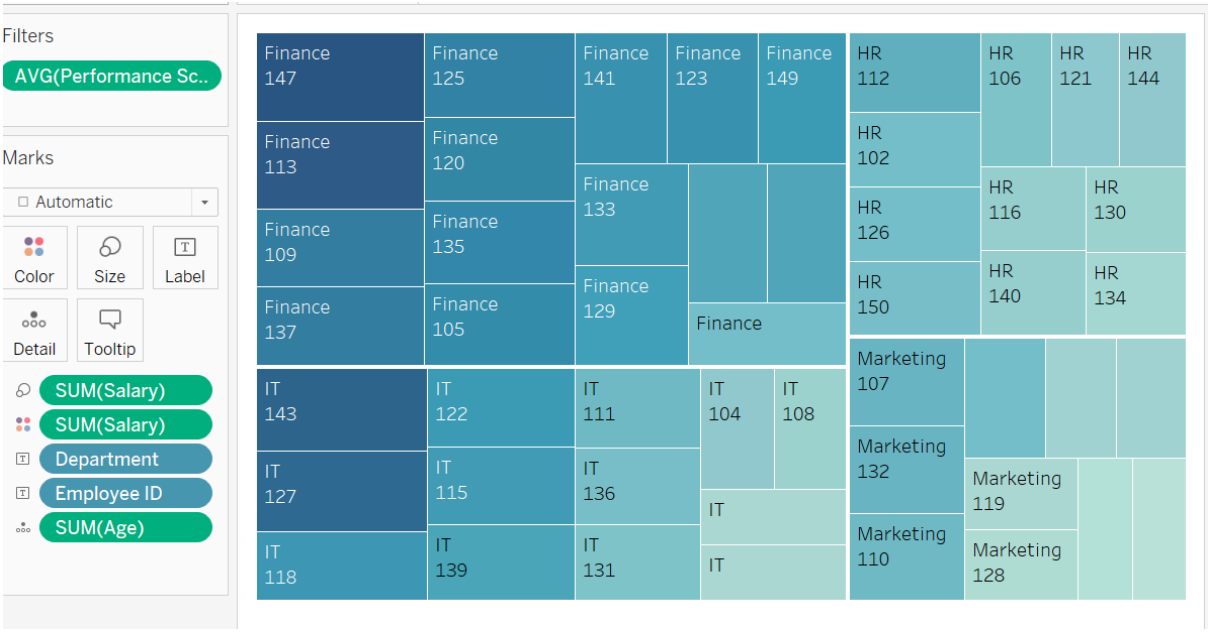


7. Tree Map (Department-Wise Salary Distribution)

A **tree map** shows hierarchical data where size represents a numerical measure.

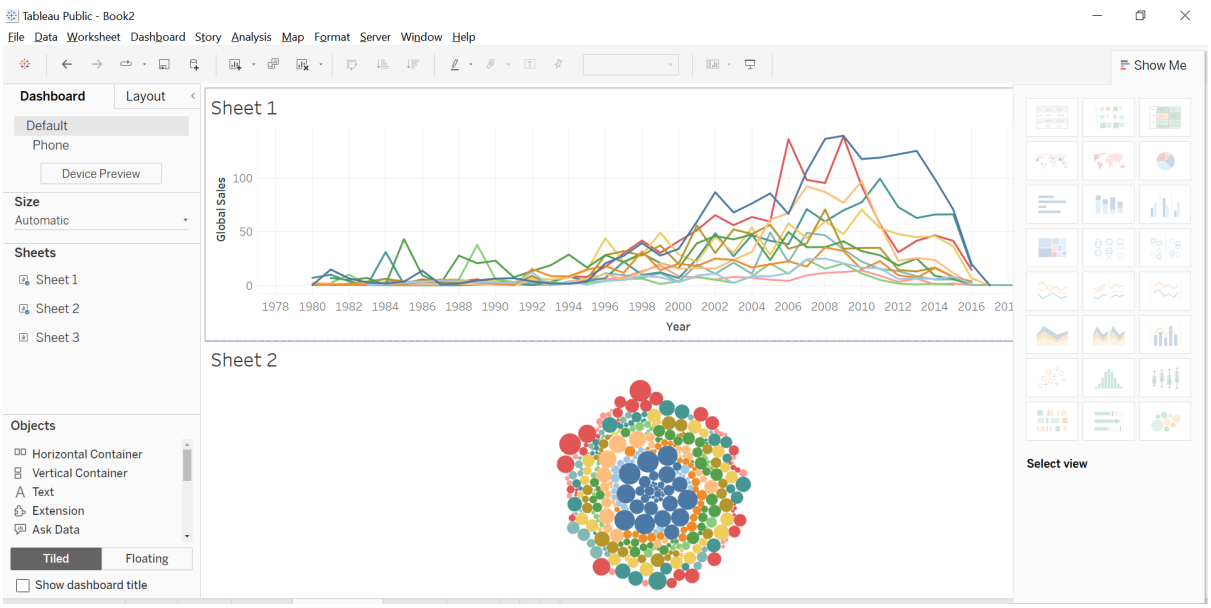
Steps to Create a Tree Map

1. **Drag Department to Columns** (Categorical Dimension).
2. **Drag SUM(Salary) to Size** (Bigger blocks represent departments with higher salaries).
3. **Drag Department to Color** (Each department has a different color).
4. **Drag Performance Score to Label** (Displays performance within each department).
5. **Change Marks Type to "Treemap"** from the Marks card.



Conclusion

Using Tableau, you can create advanced visualizations allowing insightful analysis of employee salary, experience, and performance trends.



Conclusion: Hence, we study Tableau to analyse vgsale data and perform different visualisation operations on it.