CASE STUDY

ON

BUSINESS INTELLIGENCE TOOL

"TABLEAU"

BACHELOR OF TECHNOLOGY

IN

INFORMATION TECHNOLOGY

Submitted By

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(2022–2023)

Contents

Introduction

- **Tableau** is a powerful tool used for data analysis, visualization. It allows creating amazing and interactive visualization and that too without coding. Tableau is very famous as it can take in data and produce the required data visualization output in a very short time. Basically, it can elevate your data into insights that can be used to drive your action in the future

- Using a BI tool like Tableau is a fast and effective way of simplifying raw data. These huge data sets are unintelligible for most people who aren't developers or computer scientists. Tableau simplifies data analysis by generating a dashboard that incorporates visual representations of different raw data sets. Users define the reports they want to view or download, and Tableau BI software creates a personalized dashboard for their company's defined goals and requirements.

- **Why use Tableau :** Tableau is the fastest and powerful growing visualization tool. It is very easy to use.There are no complex formulas like excel and other visualization tools. It provides the features like cleaning, organizing, and visualizing data, it is easier to create interactive visual analytics in the form of dashboards. These dashboards make it easier for non-technical analysts and end-users to convert data into understandable ones.

- **Values in Tableau:**

  There are two types of values in the tableau:

  1. **Dimensions:** Values that are discrete(which can not change with respect to time) in nature called Dimension in tableau. Example: city name, product name, country name.
  2. **Measures:** Values that are continuous(which can change with respect to time) in nature called Measure in tableau. Example: profit, sales, discount, population.

- For live analytics, Tableau Desktop connects to various types of file, including Data Warehouse. Depending on data source connectivity and publishing needs, it's possible to group Tableau Desktop into types of access:
  1. **Personal:** In this version, the workbook is private and access is limited, so distribution occurs in Tableau public or offline.
  2. **Professional:** Tableau Desktop Professional provides full access to every data type, and you can publish work in Tableau Server or online.

Advantages of Tableau

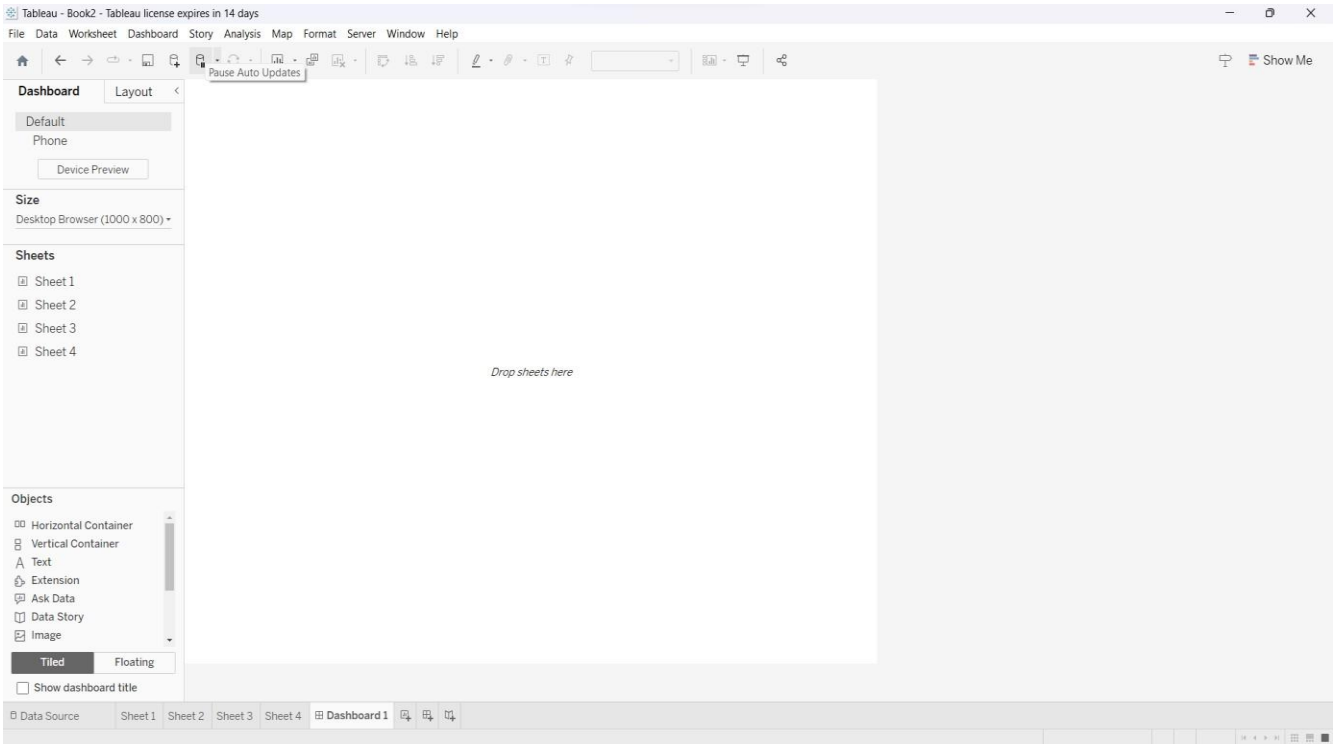
- **Quick calculation-** All the calculations on the tableau done by the backend, so it is relatively faster than any other tool.
- **Interactive dashboards**– Tableau dashboards are very interactive and easy to draw.
- **No manual calculation-** All the calculations done by the tableau only. There is no manual calculation but in some specific cases, we used calculated fields for calculation.
- **A large amount of data-** Tableau can handle a large amount of data. Different types of visualization can be created with a large amount of data without impacting the performance of the dashboards.

Disadvantages of Tableau

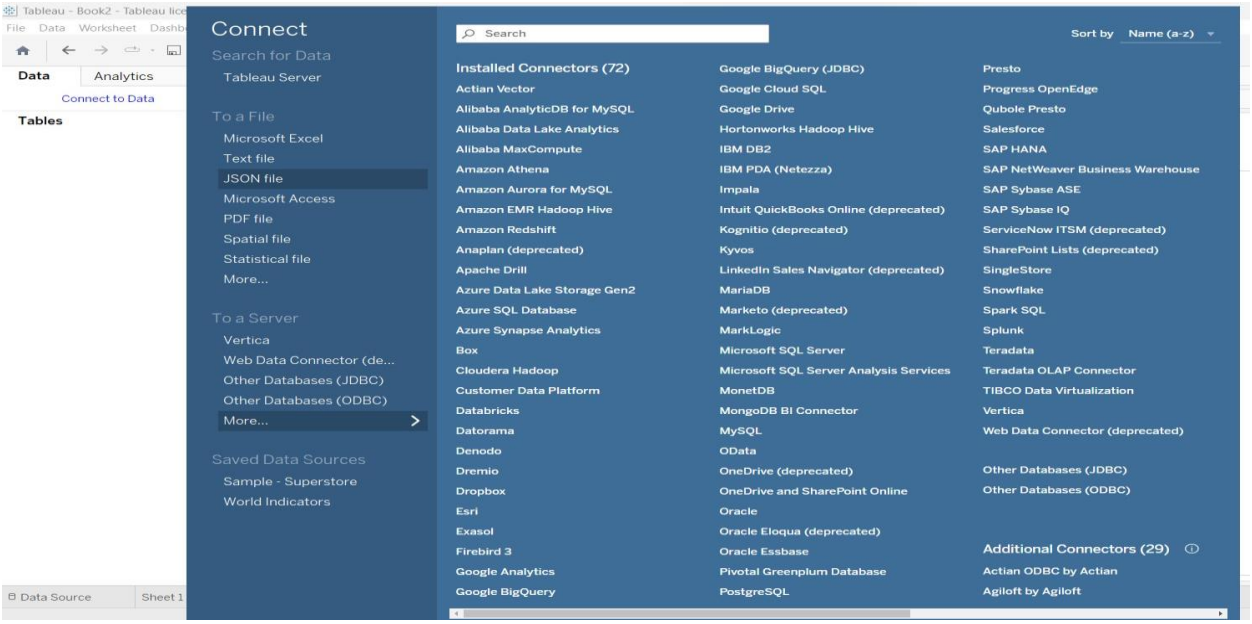
- **High Cost-** tableau is a paid tool for visualization, and it is a reason why people are not using tableau so much.
- **Static and single value parameters-** Tableau's parameters are static and always single value can be selected using a parameter. Whenever the data gets changed, these parameters need to be updated manually every time.
- **Limited Data Preprocessing-** Tableau is strictly a visualization tool. Tableau Desktop allows you to do very basic preprocessing.

WORKING ON TABLEAU

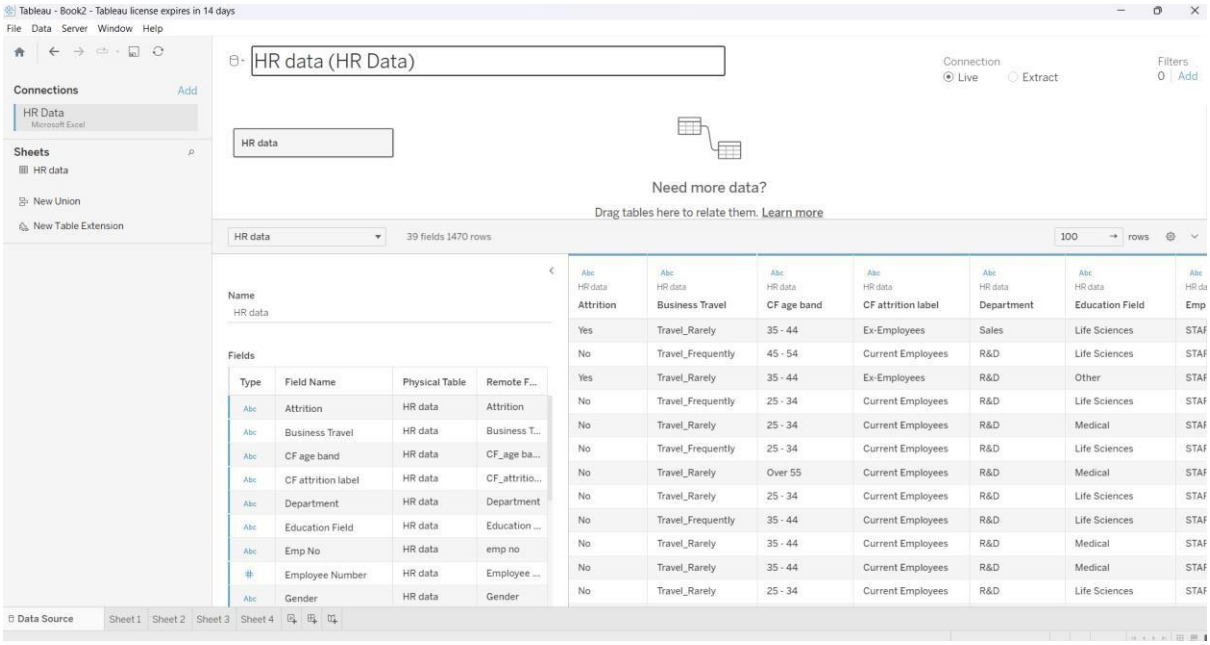
Step1: Open Tableau Tool in your desktop



Step 2: To import the dataset which is required to create the dashboard .click on connect to data button and choose the file



Step 3: Here we have chosen the Excel file which is HR DATA ANALYTICS dataset.

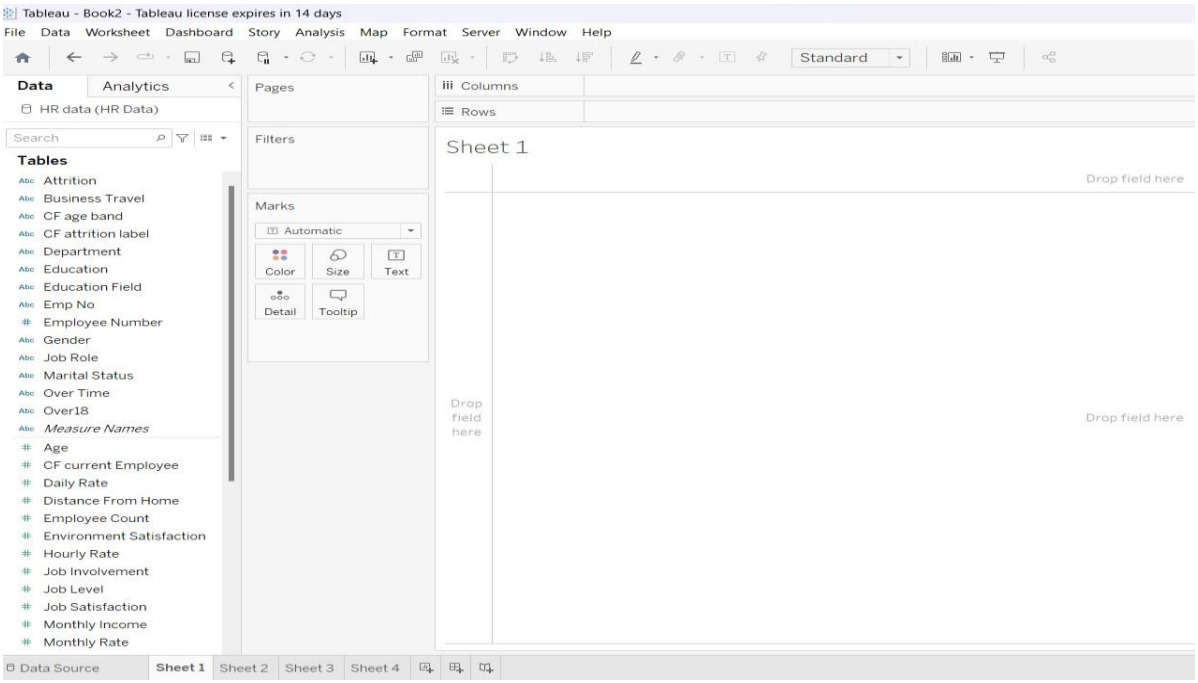


There are two connections in a tableau tool
1.live

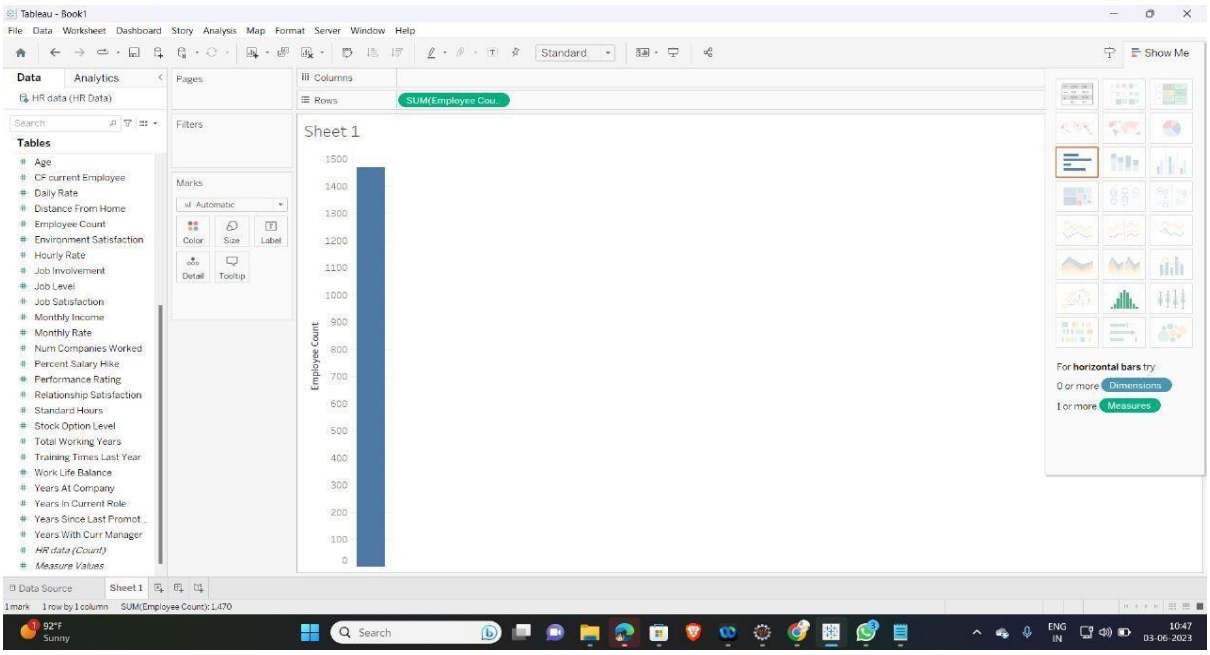
2.extract

extract is used for the large datasets and it is used for the sharing purposes

Step 4: To create the dashboard in the Tableau first the Sheets are created individually and those are merged. So click on the sheet 1 which is present bottom of the window.

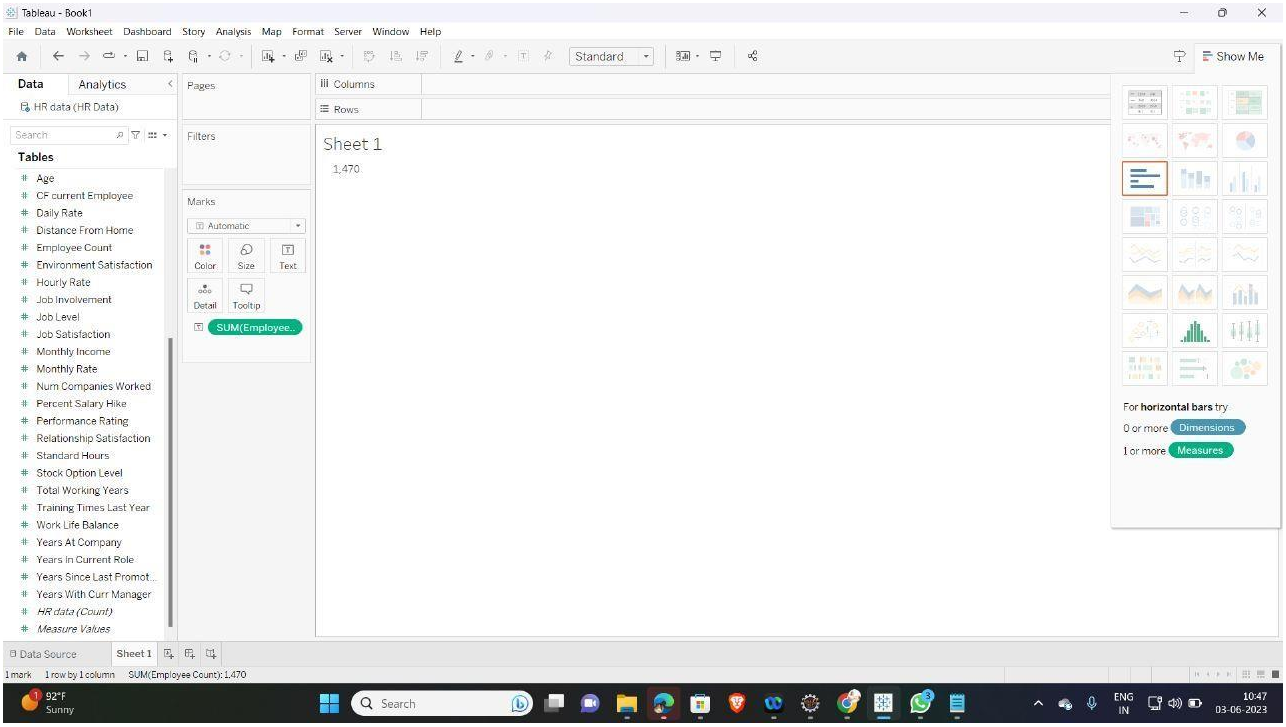


Step 5: To create the Sheet1 first take the required column name (measured names) and calculate the new measured values and represent it



Here the Employee Count column is taken and drag this Column into the Rows Header where it shows as the Aggregate of that Column.

Step 6: To Calculate the Employee Count into the Text Format . Drag the Employee Count into the Text label which is shown as below.



Note: =# represents the calculated manually

The Employee Count in the Company is shown in the Above fig.

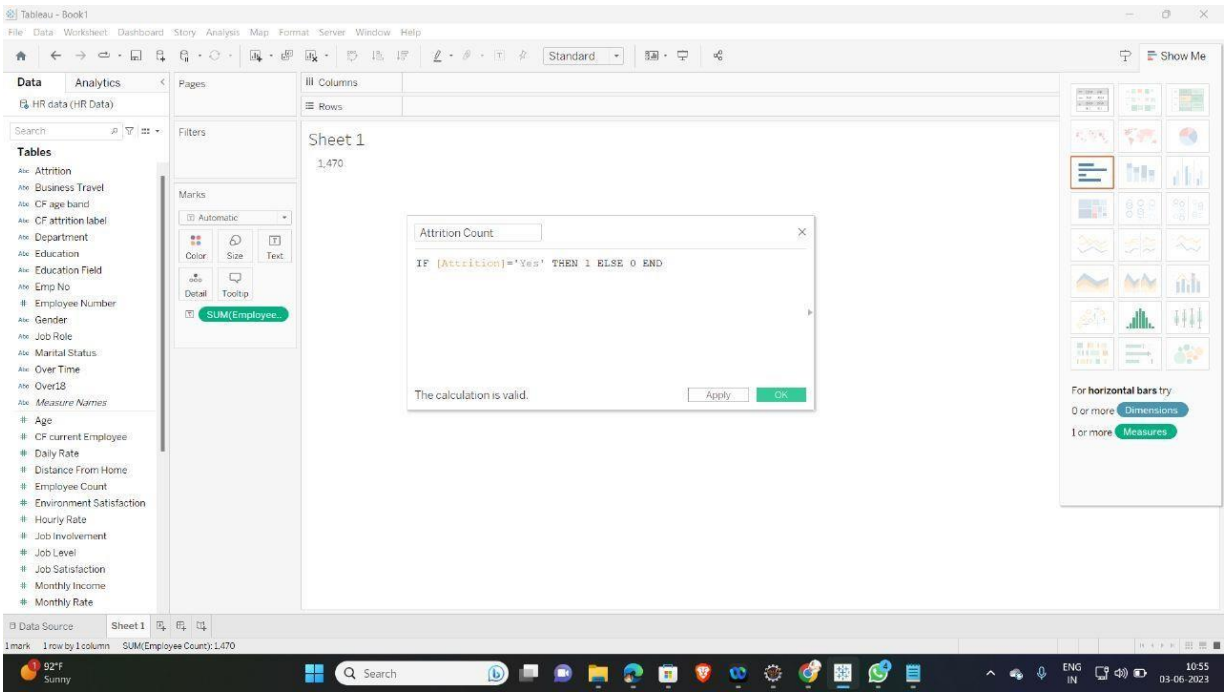
Step 7 To Calculate the Attrition Count take the Attrition Field in the given dataset.

Attrition is of 2 types:

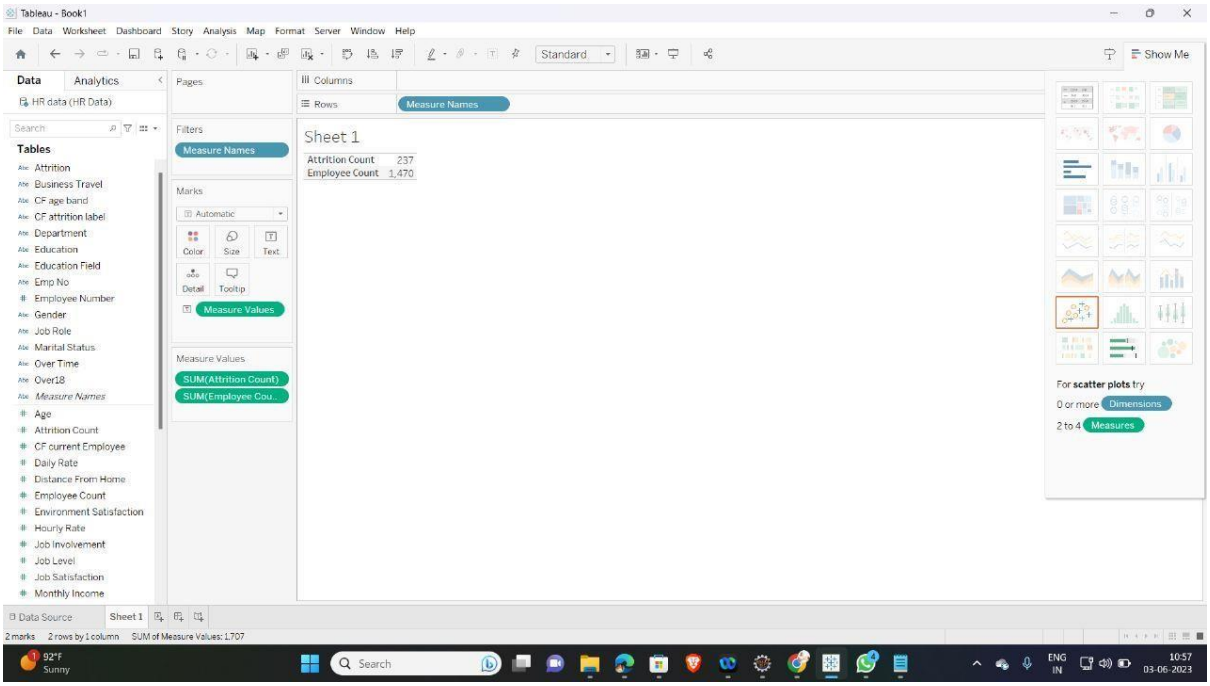
1.Yes indicates the Employee has left the Company.

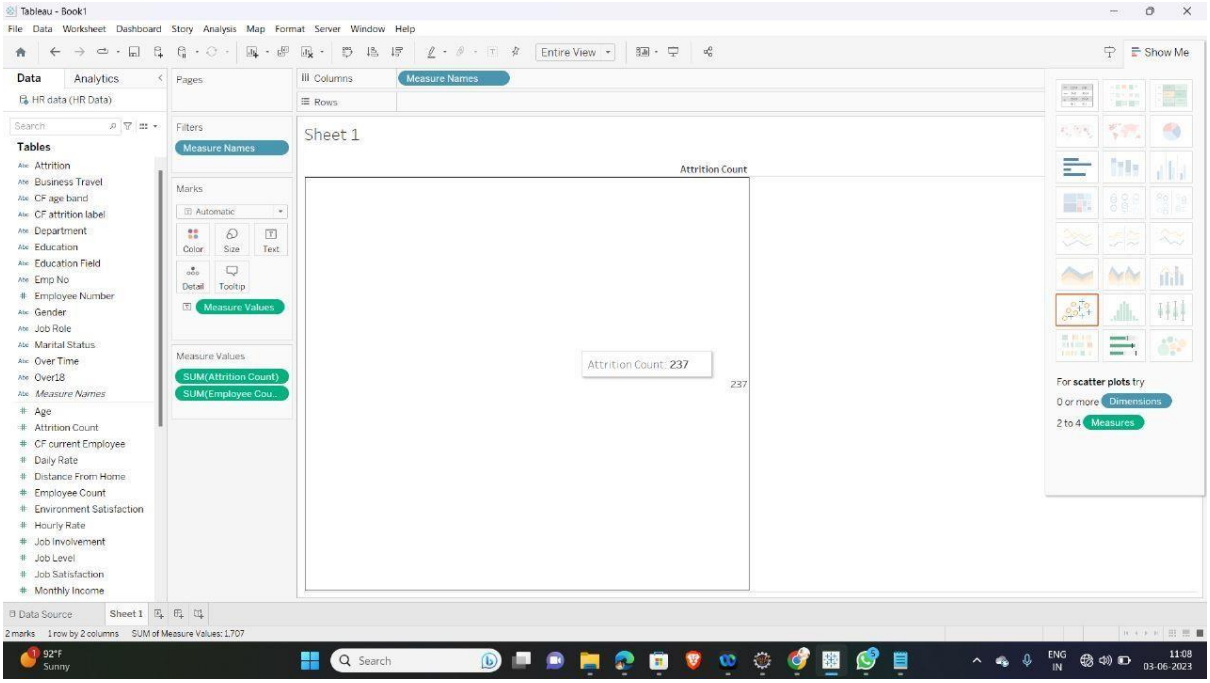
2.No indicates the Employee still working in the Company.

So, click on the Create Calculated Filed option and give the name of the new Field as Attrition Count and calculate.



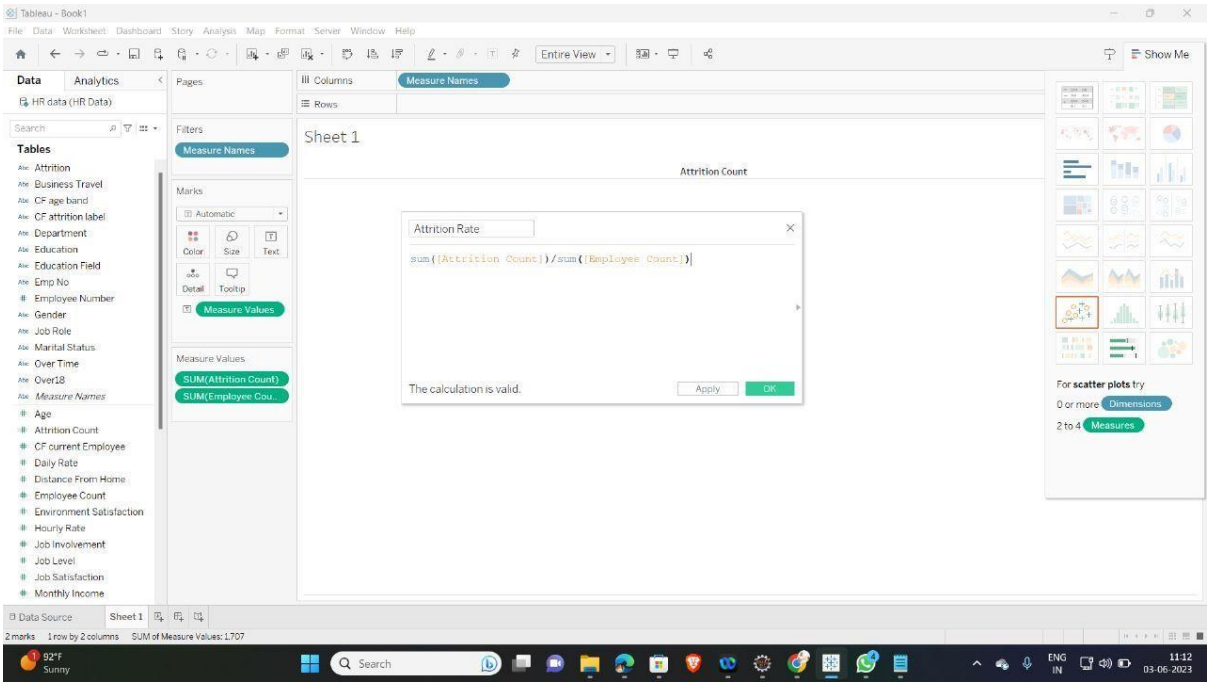
Click on the Entire view option on the top and view the fields as entire desktop.





Step 8: Calculate the Attrition Rate by using the Employee Count and the Attrition Count

Attrition Rate=sum ([Attrition Count])/sum ([Employee Count])



Step 9: So to Create the HR dashboard the Employee status is required and these are the fields are chosen

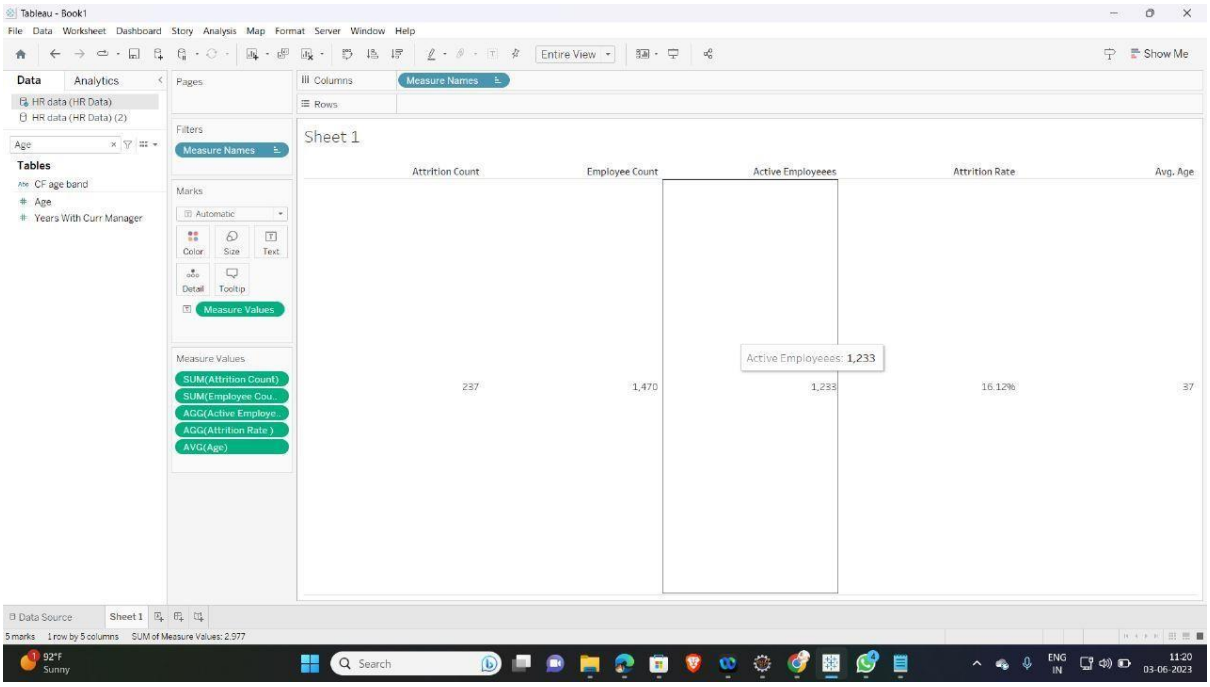
1.Attrition Count

2.Employee Count

3.Attrition Rate

4.Active Employees

5.Avg(age)



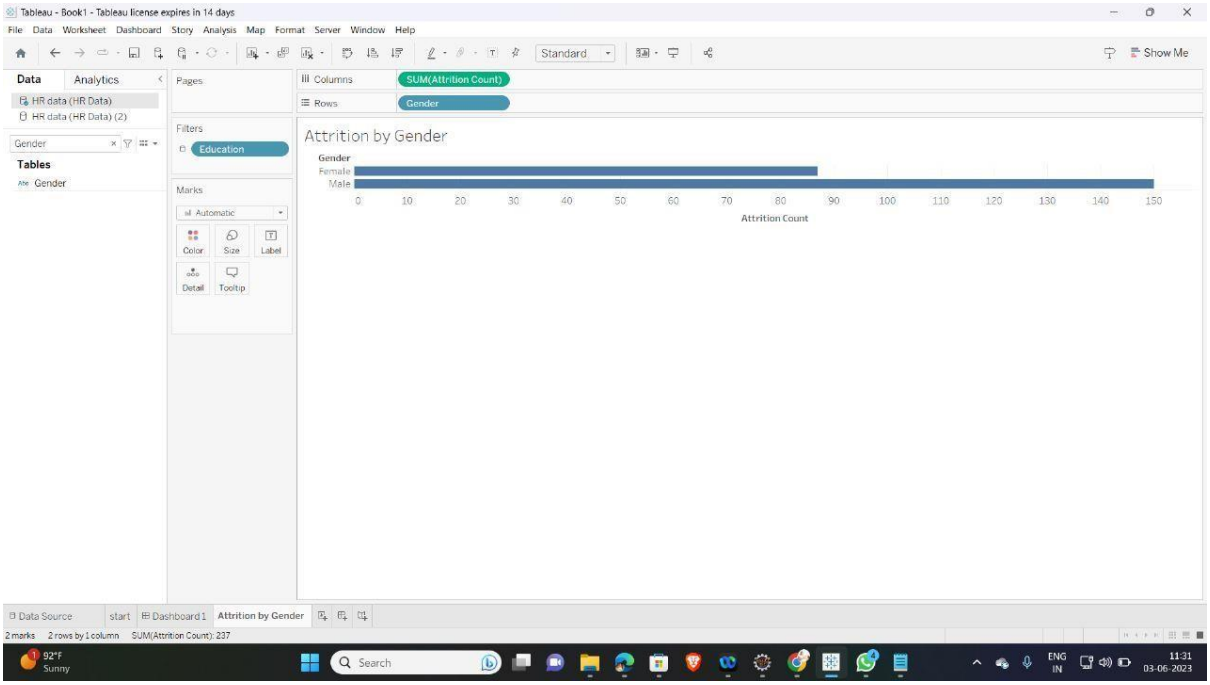
Step 10. To Place the Sheet 1 into the Dashboard click on the Dashboard field on the bottom side and Rename as HR DATA ANALYTICS DASHBOARD and place the background image b y selecting the image option

Step 11: Drag the Sheet 1 into the dashboard and adjust the size of that required field and right click on the FORMAT option and choose the font and remove the grid lines for the rows and columns make the grid lines as NONE

Step 12: Next Sheet of the Dashboard is Attrition BY Gender

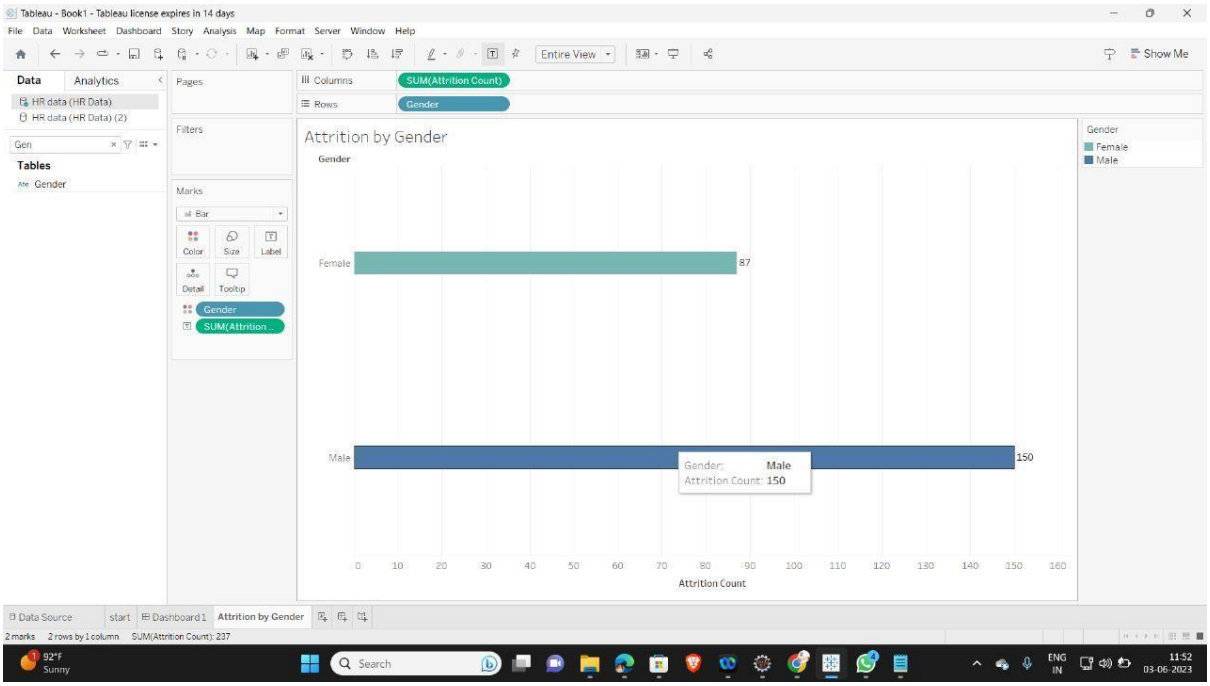
In the Row Header select the Gender Field

In the Column Header select the Attrition Count Field

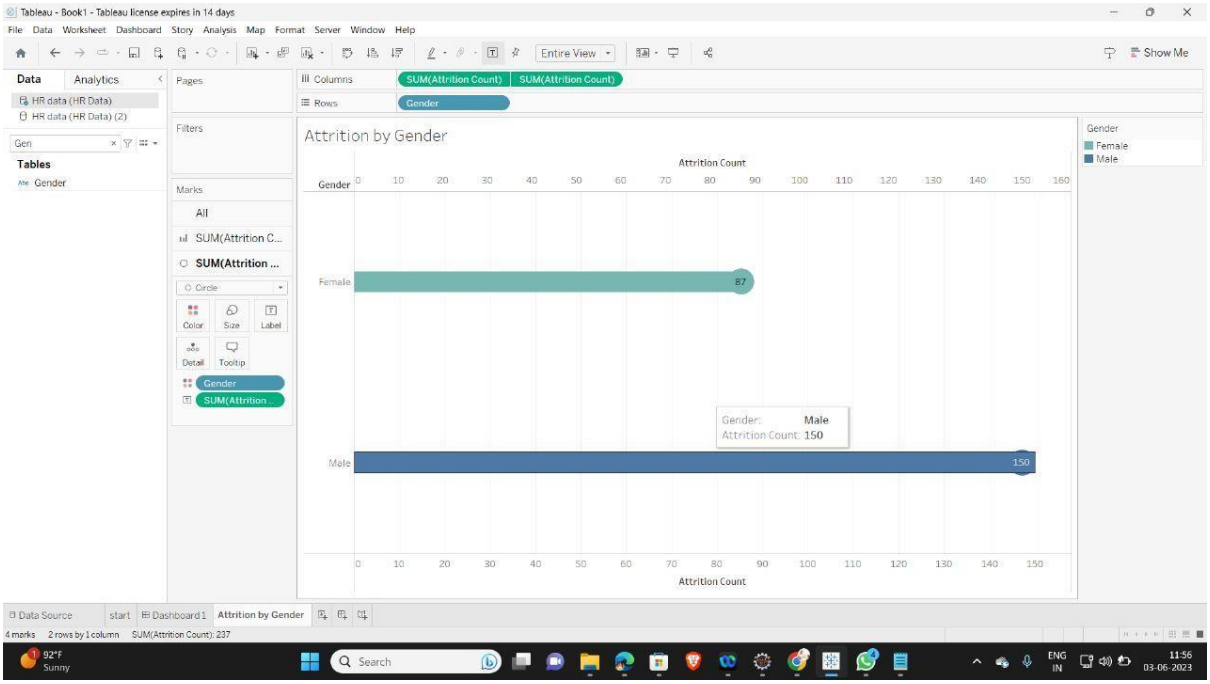


Education is the filter that is used for the visualization for the complete data source Tiled and Floating

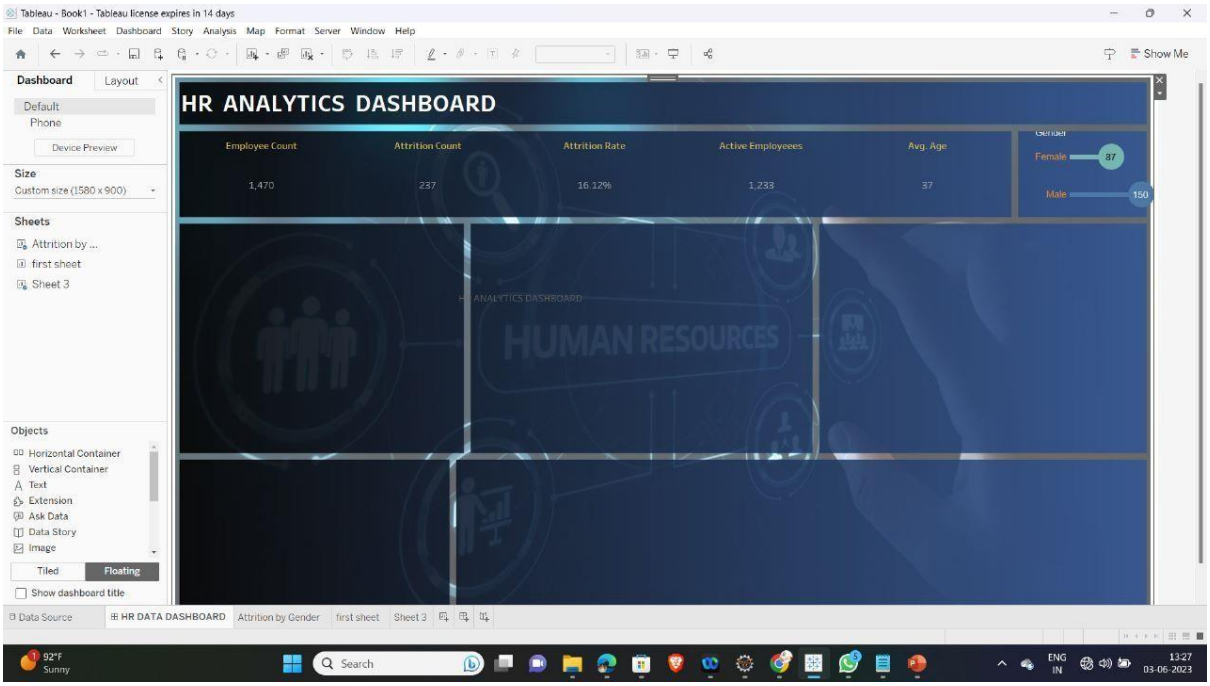
Step 13: Drag the Gender Field into the Color Option and select the required Color and to represent in the Bar Chart click on the Bar option



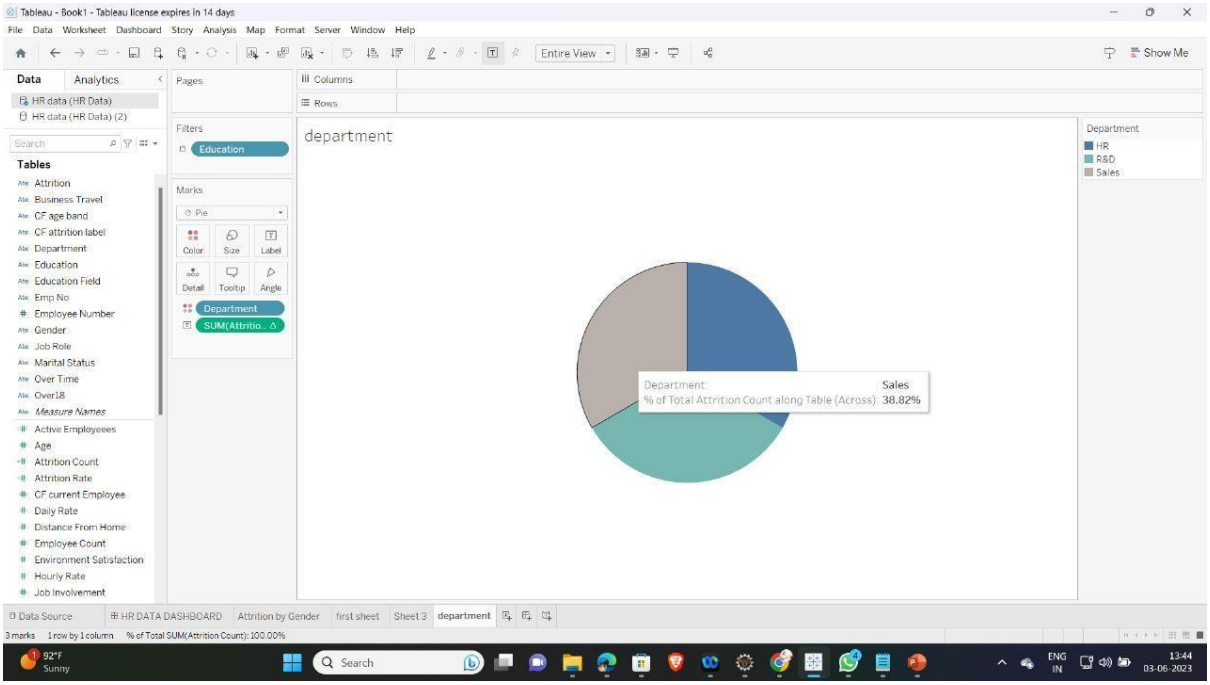
Step 14: To represent the two different shapes in the single field Drag the Colum Header by pressing the CTRL Key and adjust the Size. To represent the Count of that Field (Gender) drag the Attrition Count column into the Label.



Step 15: Finally place the sheet into the Dashboard

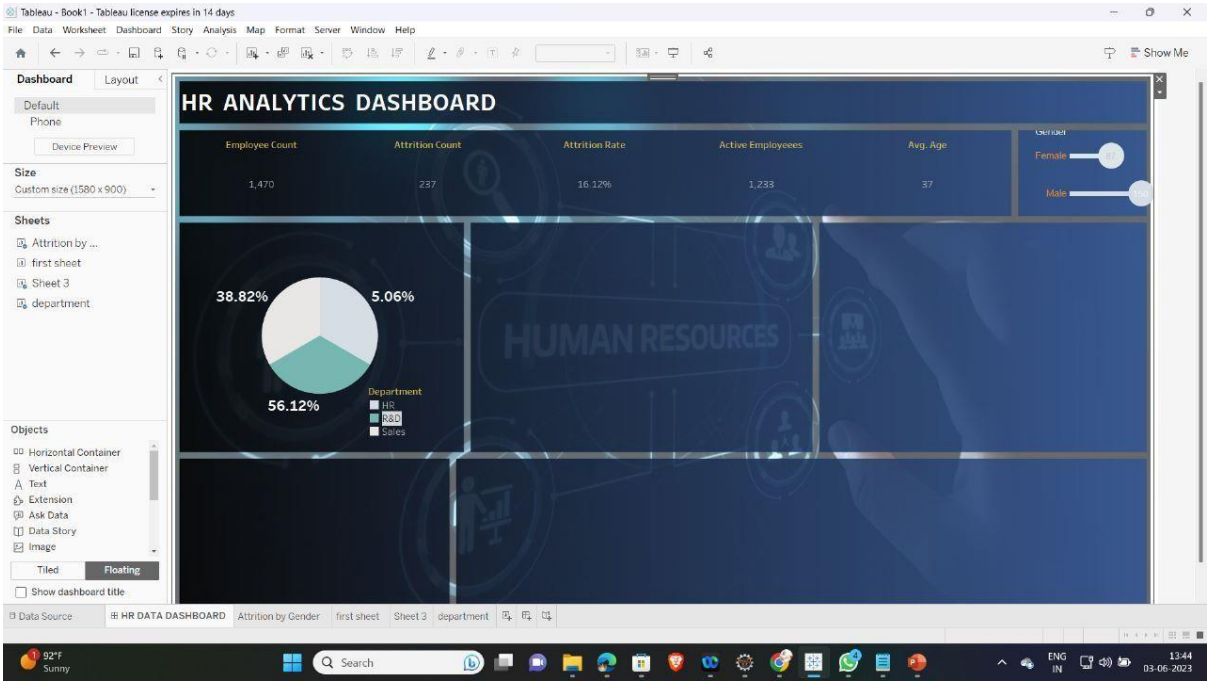


Step 16: Choose the next Sheet and rename as Department wise Aggregation and select the department column and shows the fields in the form of Pie Chart.



Step 17: To Calculate the percentage of the fields of the department Column Drag the Attrition Count into the LABEL.

Step 18: Drag the sheet into the Dashboard by adjust the size and font.

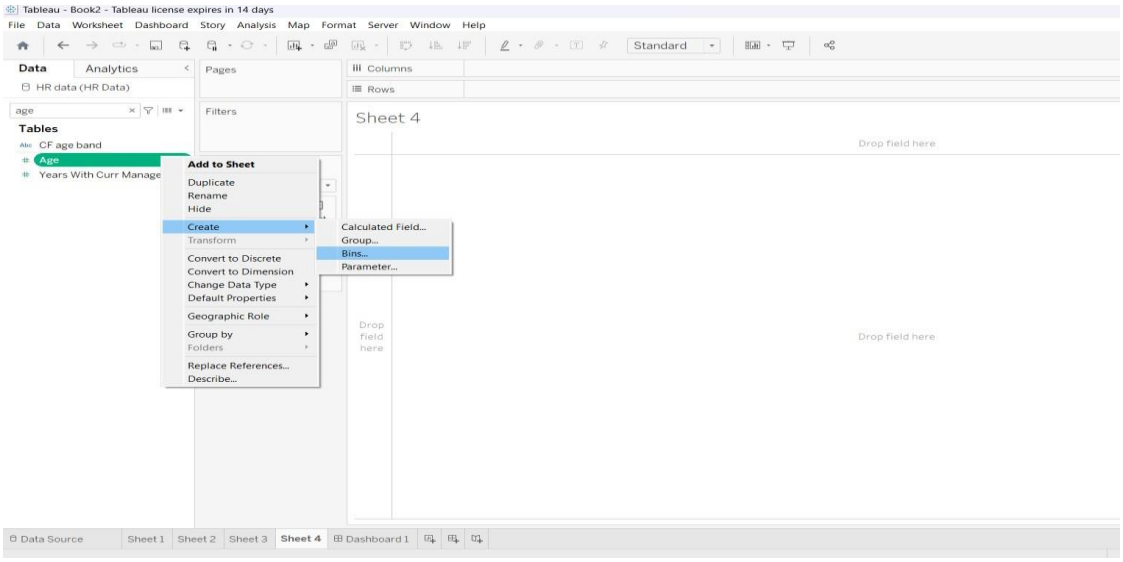


Step 19: Now create the new sheet and rename as Age Group

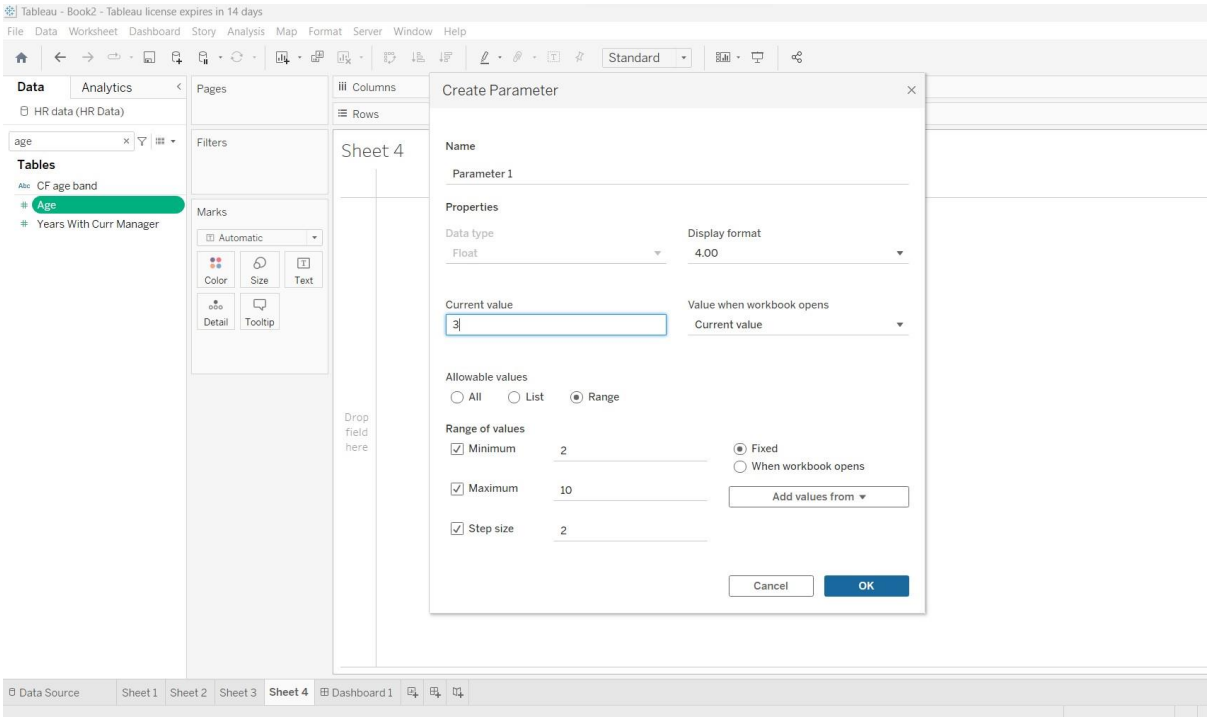
Frequency Based on the age of the Employees the frequency chart is distributed

Step 20: Select the required fields as the rows and Colum Header(Age(bin) and Attrition Count) and create the Bin size with new Parameter Value .

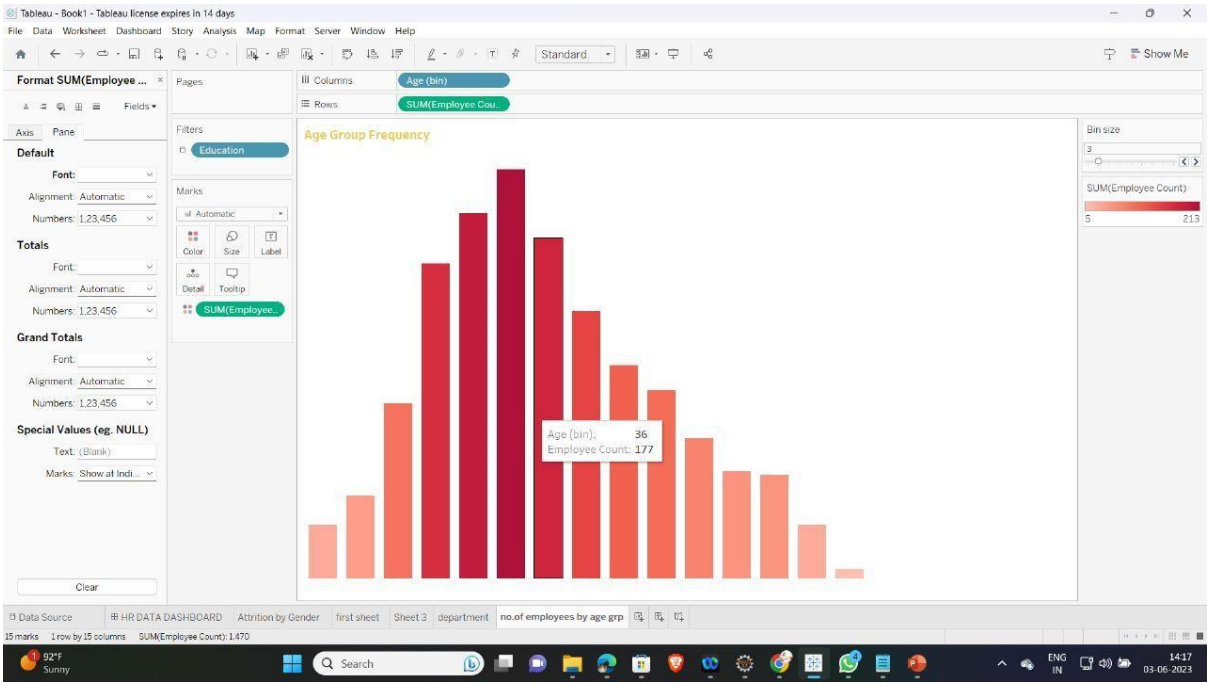
Step 21: Click on the Age Option and Create the bins .



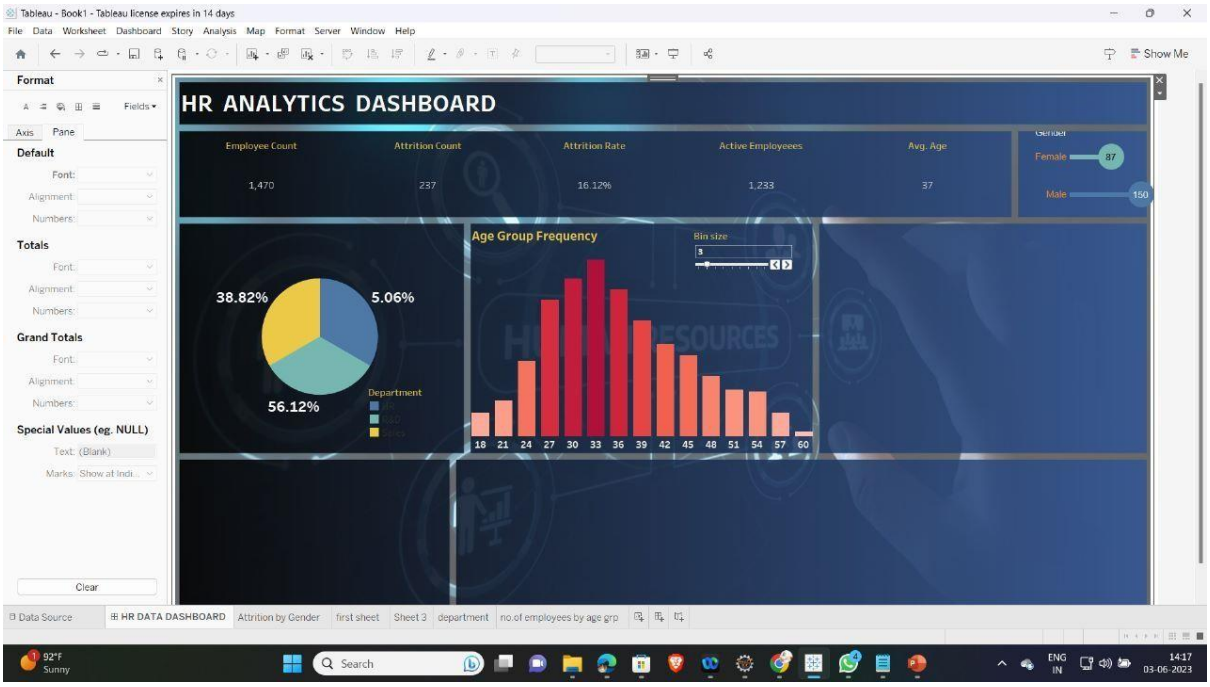
The use of Creating bins is we can increase or decrease the frequency rate by changing the intervals .Based on the bin size the frequency chart is distributed .



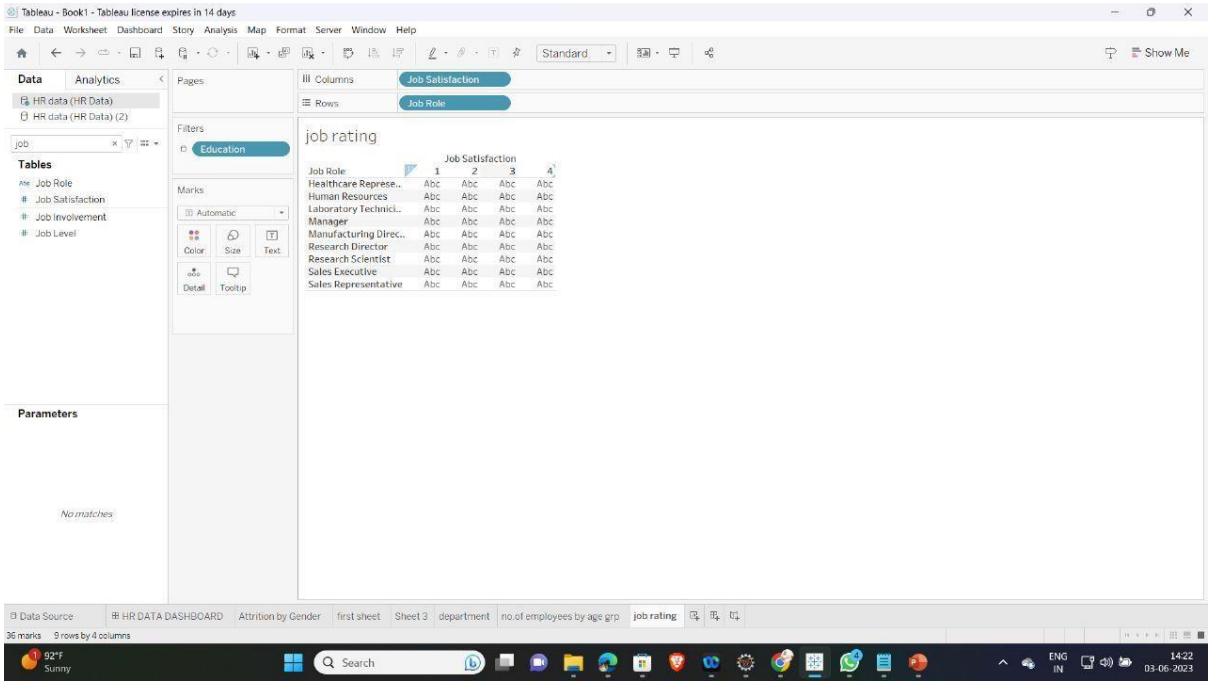
Step 22: Drag the Employee count into the label field and set the color for the frequency chart.



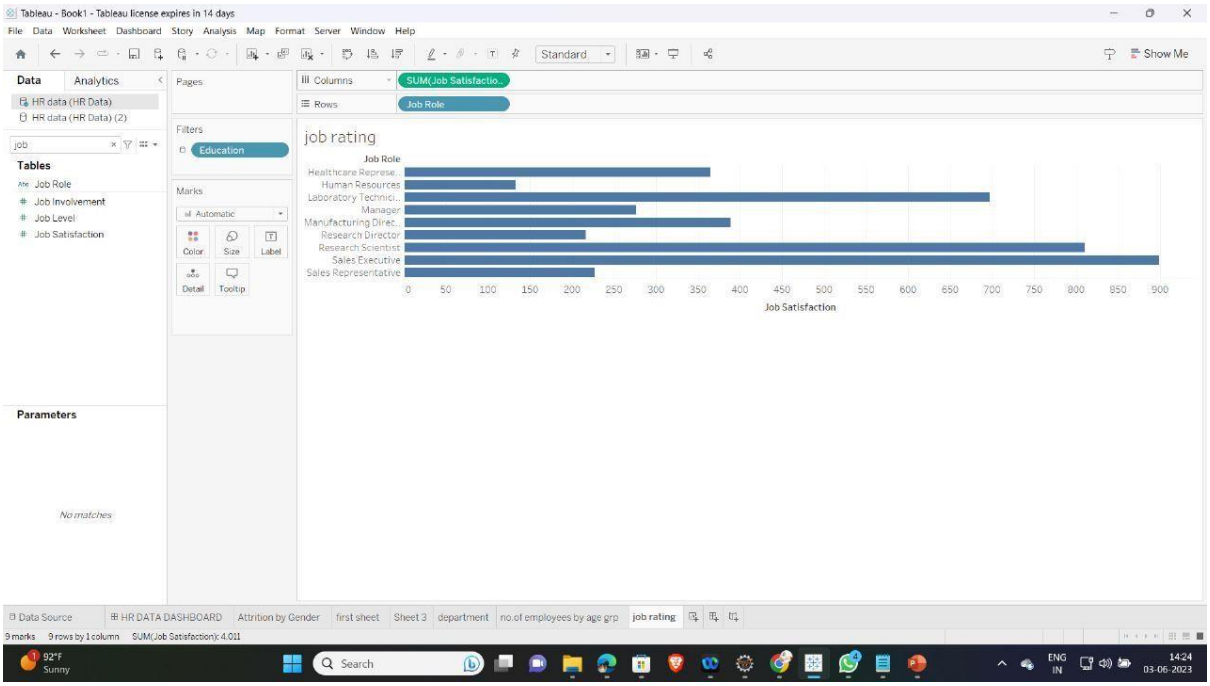
Step 23: Place the Sheet into the Dashboard and adjust the size and set the font by clicking the FORMAT Option.



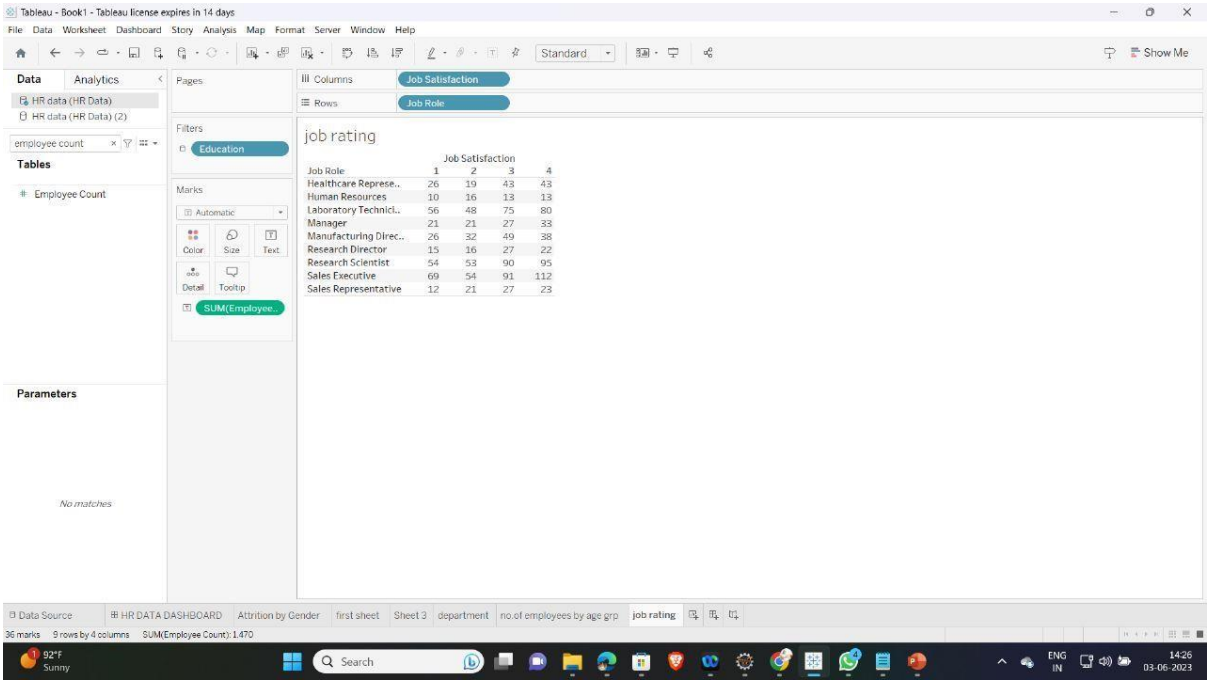
Step 25: Now create the new Sheet as job rating and select the Columns and Rows and adjust the filter as Education for all the data source .To Calculate into the Categorical values fields



Stepn 26: We can sort the Job role fields based on the Alphabetical Order and click on the Entire View Option .

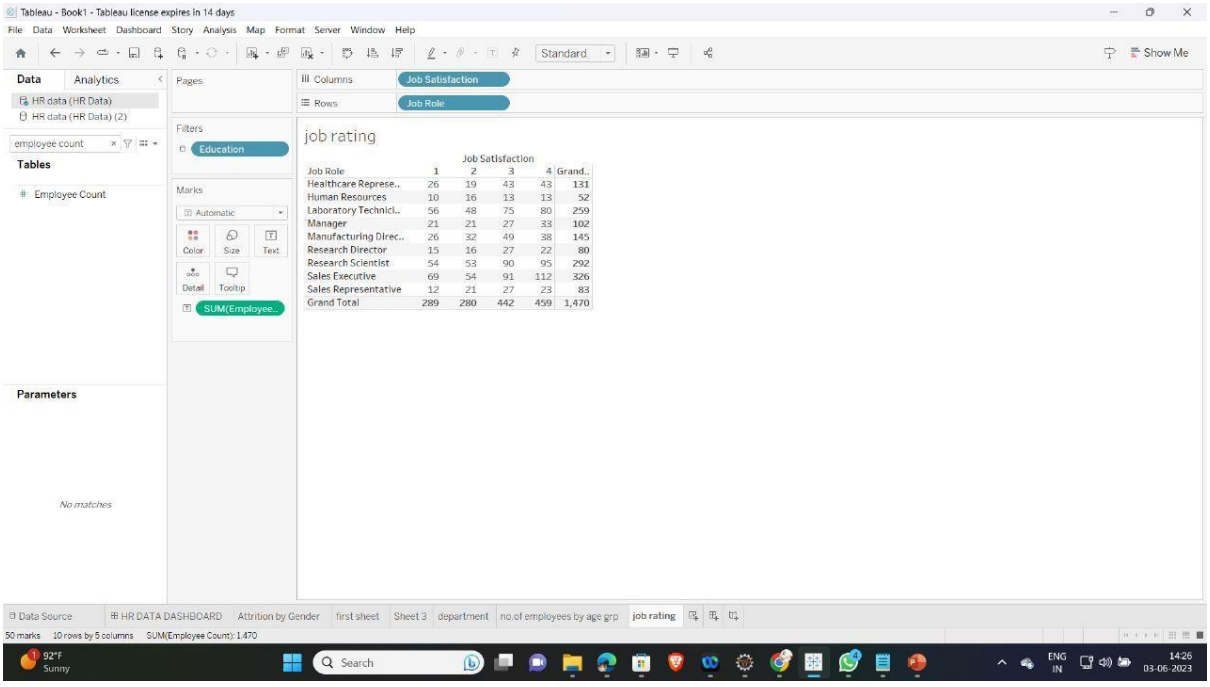


Step 27: Drag the Employee Count filed into the Text and numerical values are appeared.

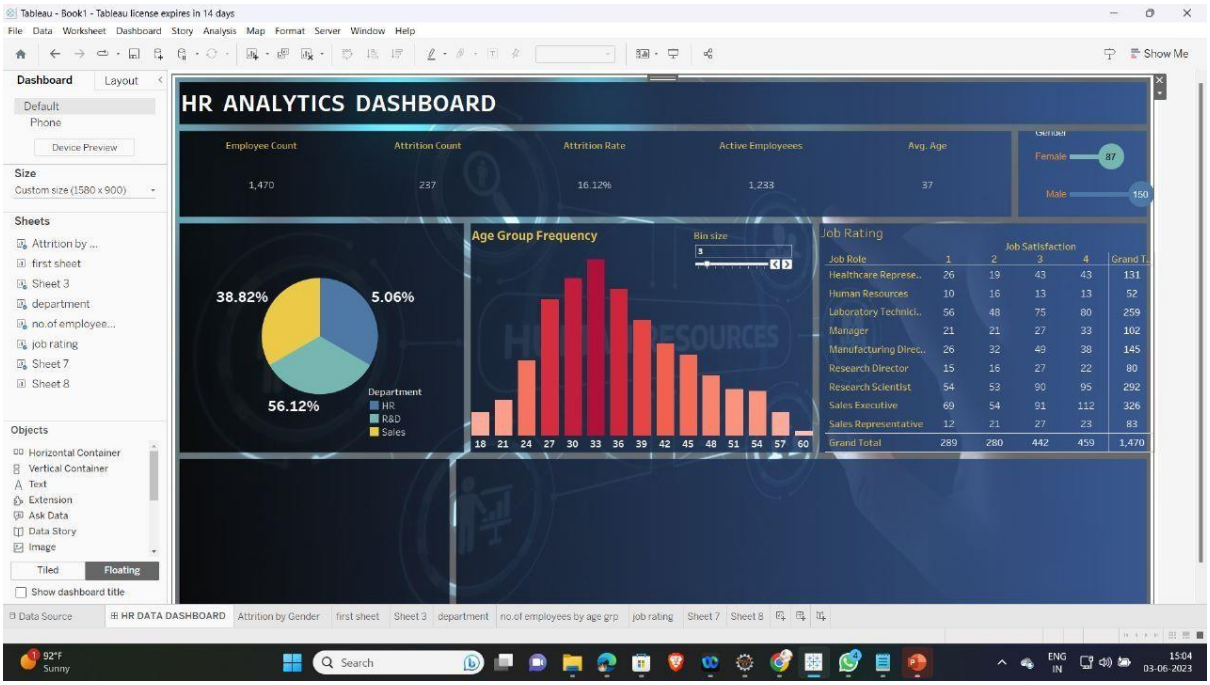


Step 28: Click on the Analysis on the top side and click on the totals and select the option grand total for rows and grand total for columns

.



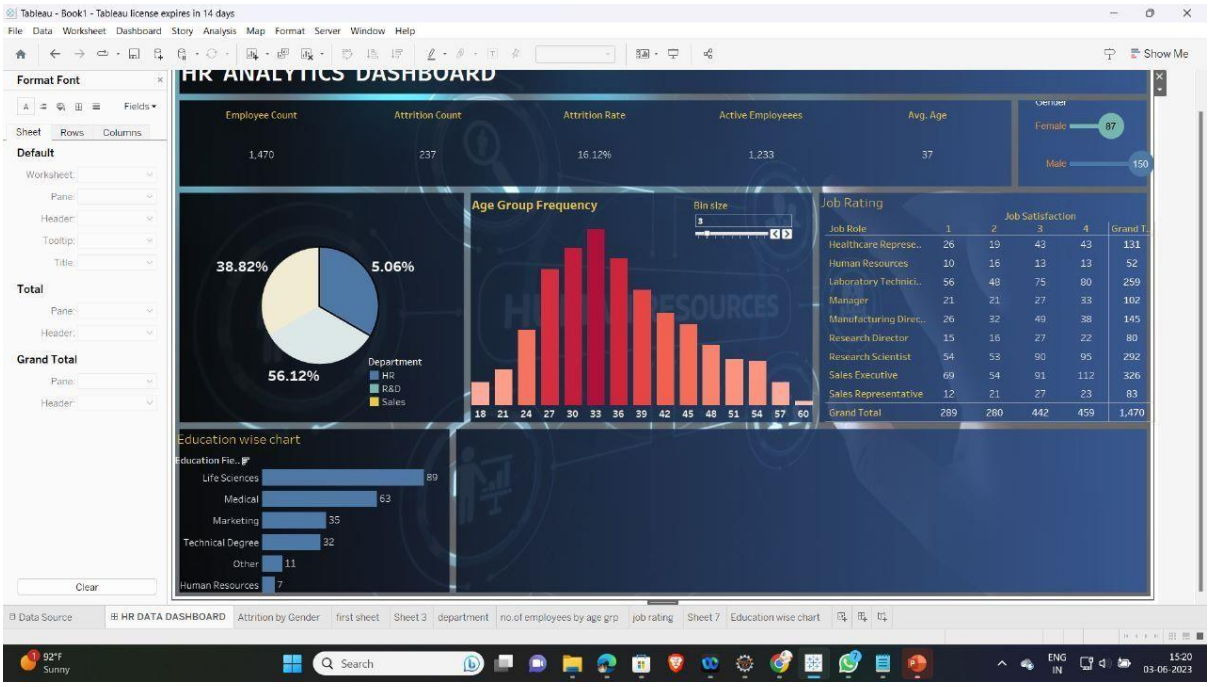
Step 29: Drag the sheet into the dashboard and set the required size and font of the sheet.

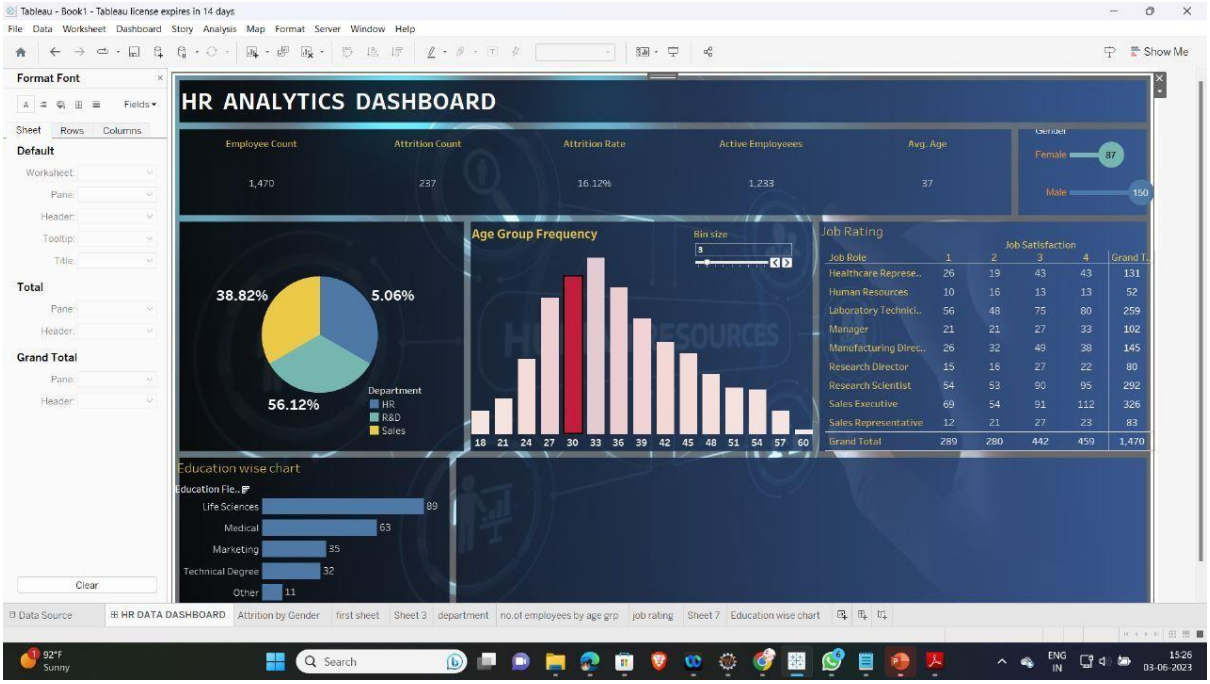


Step 30:Now create the new sheet and rename it as Education wise Chart .Select the required field as Education

Step 31:Now drag the employee Count into the label and Based on the Alphabetical Order then Education field is arranged or based on the Count the Field is arranged. Here in this the bar chart is created ..So select the option as bar and drag the employee count into the label .

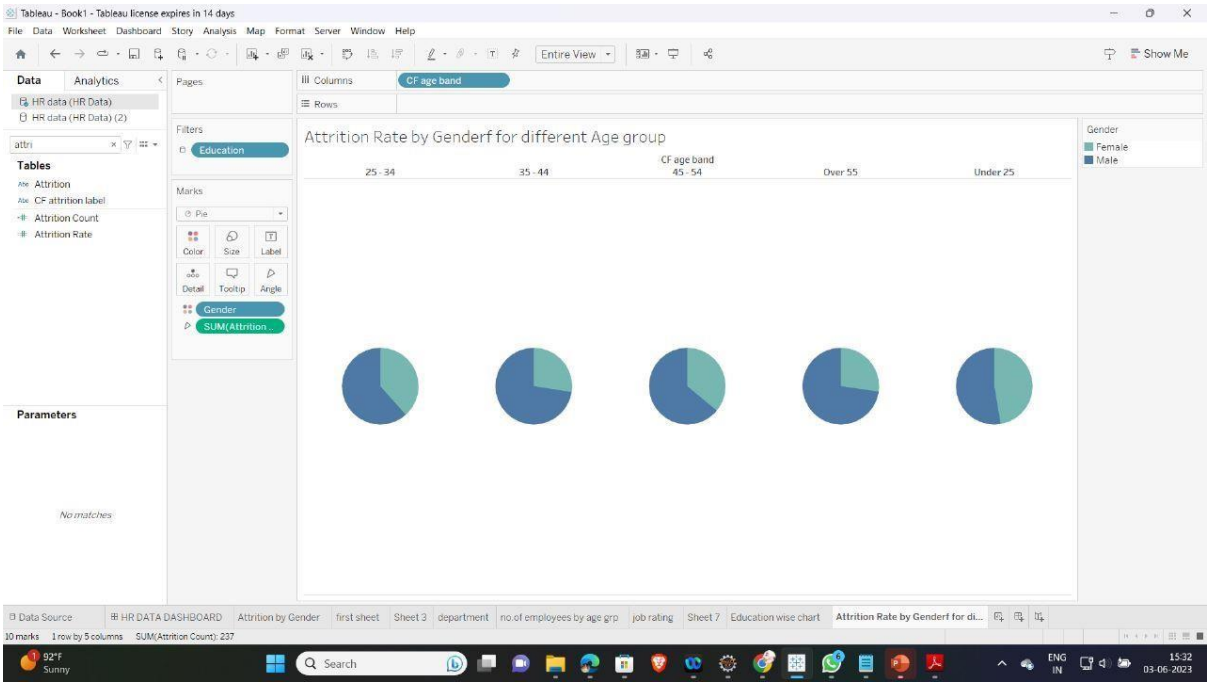
Step 32:Place the Sheet into the Dashboard and adjust the size and set the font color as shown below.





Step 33:Now select the new sheet and rename it as Attrition Count by Gender for different Age Group .

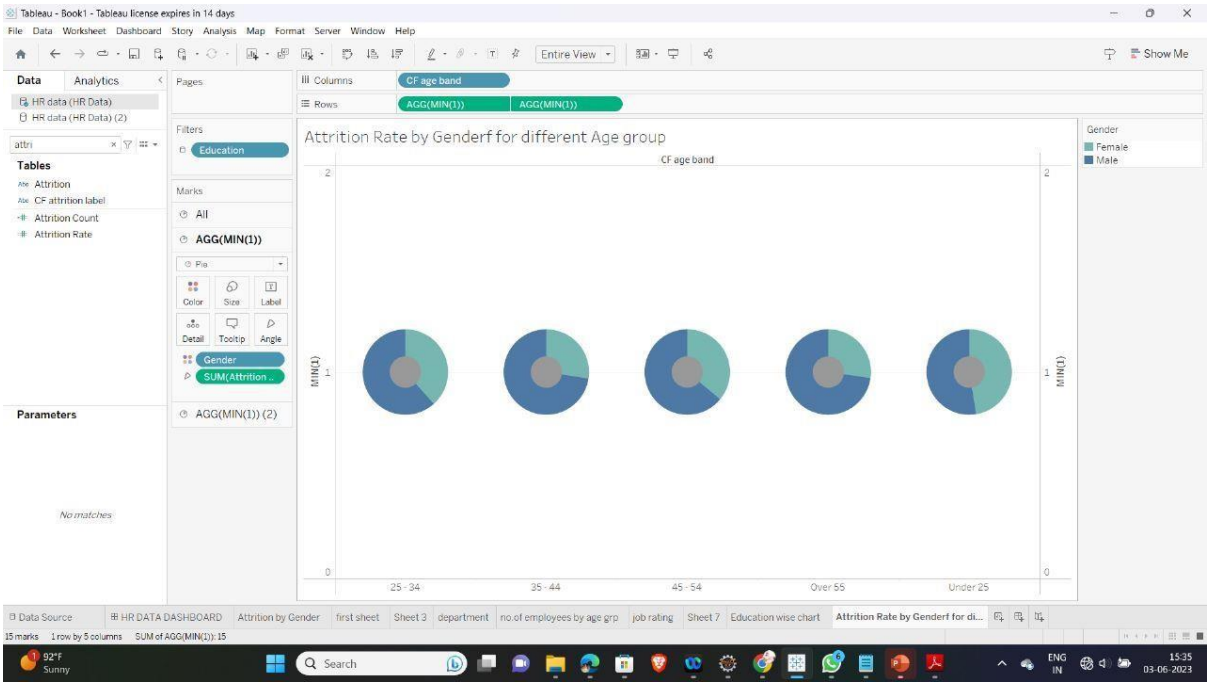
Step 34:Select the Column field as CF Age band and drag the gender field into the label and Attrition Count is placed into the Angle as shown below.



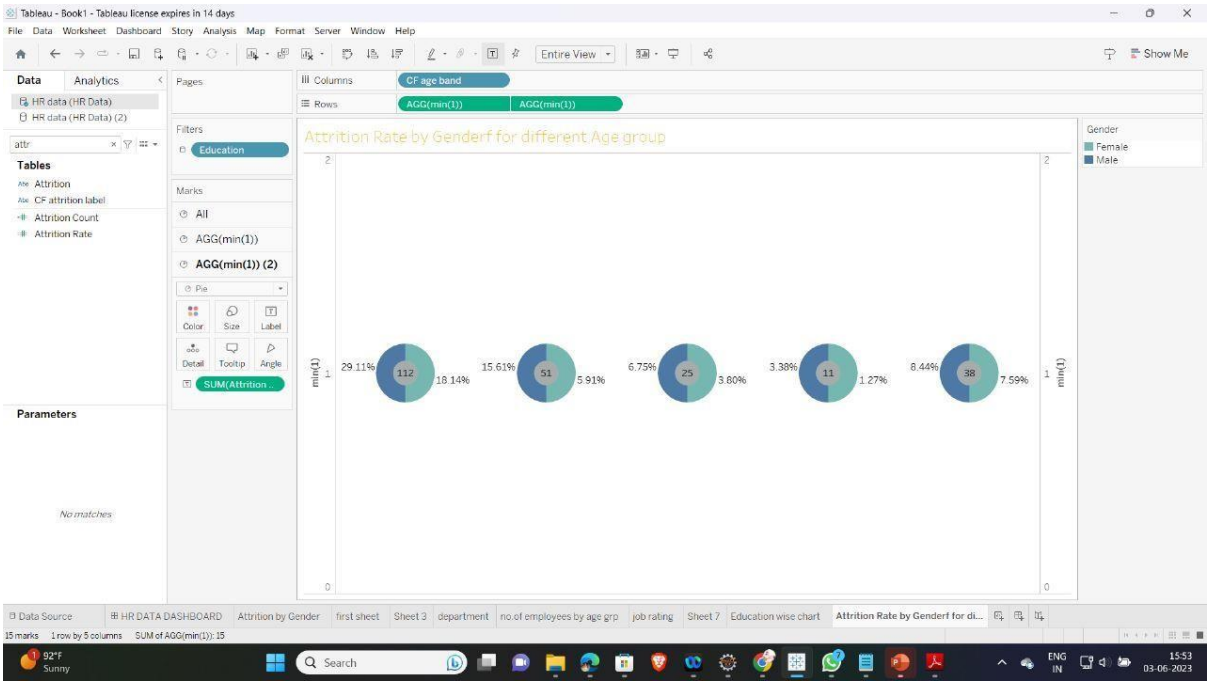
Step 35:Now create the instance of the row field first create the

Min(1) and By pressing the CTRL Key create the instance of that field .

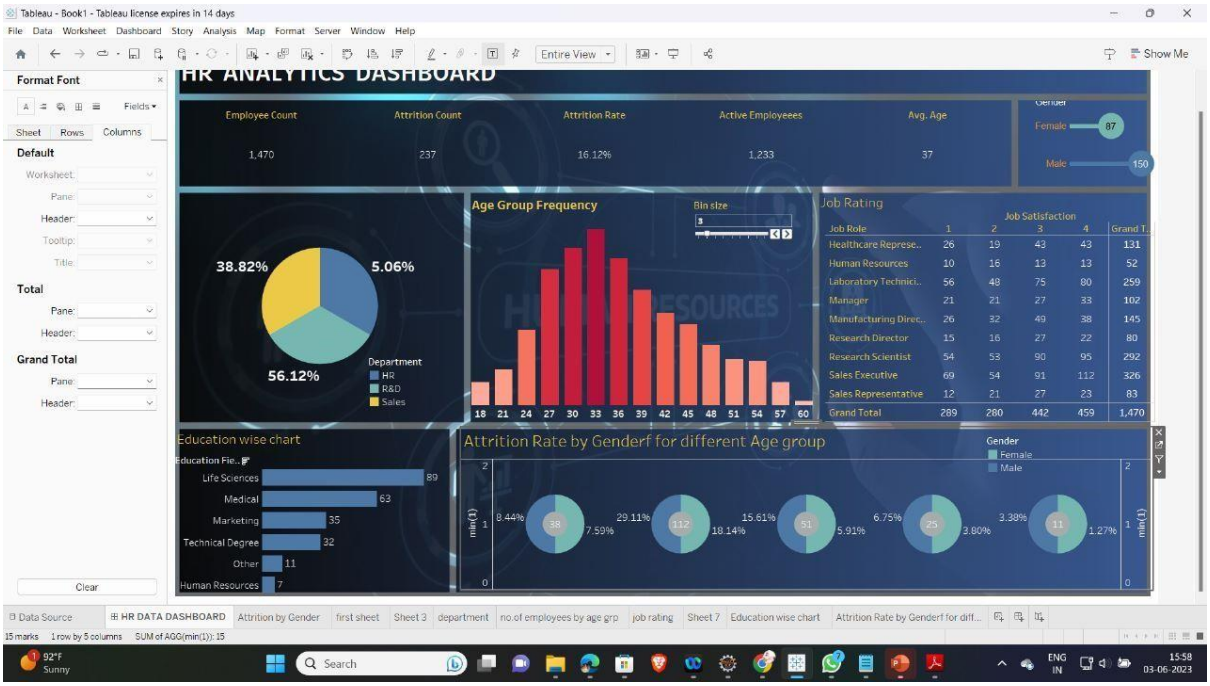
Step 36:To create the Custom Chart(DONUT CHART) for the instance delete the row and column fields so remain it as blank and decrease the size .Click on the dual axis so automatically it merges as shown below.



Step 37:Drag the Attrition Count into the label and right click on that and select the percentile option and select up to 2 decimals .



Step 38:Place the sheet into the dashboard and adjust the size and set the font color as shown below .



The Complete HR Data Analytics Dashboard is Created.

ConCluSion

Tableau is a powerful and versatile data visualization tool that has proven to be invaluable in the field of data analytics and business intelligence. Through its intuitive interface and extensive range of features.

le large volumes of data from diverse sources, including databases, spreadsheets, and cloud services. Its robust data blending and aggregation capabilities allow users to combine multiple data sets and extract valuable insights, uncovering hidden patterns and trends that may otherwise go unnoticed.

Overall, Tableau has established itself as a leading data visualization tool, enabling businesses to derive actionable insights from their data. Its user-friendly interface,

powerful analytics capabilities, and collaborative features make it an asset for organizations of all sizes, across various industries.]