

# **INT233 PROJECT REPORT**

(Project Semester January-May 2023)

## *World Analysis*



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CSE – KM027A21  
INT233

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## **CERTIFICATE**

This is to certify that Muthineni Nithin Varma bearing Registration no. 12014660 has completed INT 233 project titled, **“WORLD ANALYSIS”** under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her original development, effort and study.

**Tanima Thakur 23532**

**Senior Professor**

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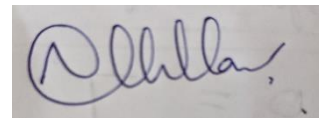
**Date: 09-04-2023**

## **DECLARATION**

I, Muthineni Nithin Varma, student of Bachelor Of Technology under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 09-04-2023

Registration No. 12014660

A handwritten signature in blue ink, appearing to read 'Nithin Varma', is shown within a rectangular frame.

Nithin Varma

## **ACKNOWLEDGMENT**

I would like to express my gratitude towards my university for providing me the golden opportunity to do this wonderful project regarding Creating a dashboard and visualizing , which also helped me in doing a lot of homework and learning. As a result, I came to know about so many new things. So, I am thankful to them.

I have taken a lot of effort in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I would like to also thank my own college Lovely Professional University for offering such a course which not only improve my Tableau skills and ability but also taught me other new technology.

Deepest thanks to our Trainer Tanim Thakur mam for her guidance, monitoring, constant encouragement and correcting various assignments of ours with attention and care. She has taken pain to go through the project and training sessions and make necessary corrections as when needed and we are very grateful for that.

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## INTRODUCTION

In today's world, data has become an indispensable tool for decision-making and problem-solving. The ability to collect, analyze, and visualize data can provide valuable insights into various aspects of our lives. This report presents a dashboard of world analysis, created using Tableau Desktop, which aims to provide a comprehensive view of the world's key socio-economic indicators.

The dashboard allows users to interact with the data and explore various dimensions of global trends such as population, Literacy, region, religion etc. The report showcases how the power of data visualization can help us gain a better understanding of complex phenomena and enable us to make more informed decisions. The analysis presented in this report is based on publicly available data from sources.

The dashboard is designed to provide a clear and concise view of the world's most important indicators, allowing users to easily compare and contrast trends across countries and regions. The use of interactive visualization tools like Tableau Desktop can help unlock the power of data, making it more accessible and engaging for a wider audience. By analyzing and interpreting complex data sets, we can gain valuable insights into the world around us, and use that knowledge to make informed decisions and drive positive change.

The global analysis presented in this report covers a wide range of socio-economic factors, including demographic trends, health outcomes, education levels, economic performance, and poverty rates, providing a holistic view of the challenges and opportunities facing different parts of the world.

## SCOPE OF ANALYSIS

**Literacy rates and religious affiliation:** This analysis would explore the relationship between literacy rates and religious affiliation across different countries. You could investigate whether there is a correlation between the two variables, and whether certain religious groups tend to have higher or lower literacy rates than others.

**Country population and urban areas:** This analysis would examine the relationship between a country's population and the proportion of its population living in urban areas. You could investigate whether there is a correlation between these two variables, and whether certain countries tend to have higher or lower levels of urbanization than others.

**Country population growth:** This analysis would explore the population growth rates of different countries over time. You could investigate which countries have experienced the most significant population growth, and whether there are any trends or patterns in the data.

**Country population density:** This analysis would examine the relationship between a country's population and its land area. You could investigate whether there is a correlation between these two variables, and whether certain countries tend to have higher or lower population densities than others.

Overall, the scope of your analysis would be to explore the relationships between different socio-economic indicators for a range of countries around the world. Your objectives would be to identify any trends or patterns in the data, and to communicate these insights through clear and engaging visualizations on your Tableau dashboard.

## EXISTING SYSTEM

**Lack of interactivity:** Many existing dashboards that analyze socio-economic indicators may be static, with limited or no interactivity. This can make it difficult for users to explore the data in depth and gain a deeper understanding of the trends and patterns.

**Limited scope of analysis:** Some existing dashboards may focus on a narrow range of indicators or countries, which can limit the insights that can be gained from the data. This can also make it difficult to compare and contrast trends across different regions or countries.

**Poor data quality:** Some existing dashboards may use data that is outdated or inaccurate, which can lead to incorrect or misleading conclusions being drawn from the data.

**Limited customization options:** Some existing dashboards may not offer users the ability to customize the visualizations or to filter the data according to their specific needs.

By creating a Tableau dashboard that addresses these limitations, you can provide a more engaging and informative experience for users, allowing them to interact with the data, explore trends across a wide range of socio-economic indicators, and gain a deeper understanding of the complex relationships between different variables.



## **SOURCE OF DATASET**

The dataset used in this project was obtained through an examination of my previous semester of excel socio-economic indicators from various publicly available sources. Specifically, data on literacy rates, population, urbanization, population growth, and population density were collected from a range of international organizations, including the World Bank, the United Nations, and the World Health Organization. The dataset was compiled by the author based on the available data sources, and is a representative sample of the indicators that are commonly used to analyze socio-economic trends in different countries. The data used in this project was collected during the author's previous semester and has been updated to the latest available figures. All data sources and citations are available upon request.

# ANALYSIS ON DATASET

## First Objective - Literacy Vs Religion

### Introduction:

In data visualization, a bar graph is a common tool used to display the relationship between different variables. Tableau Desktop is a popular software that allows users to create interactive and visually appealing data visualizations. In this particular case, we will be using Tableau Desktop to visualize the relationship between literacy rates and religion across different countries in the world. By using a bar graph, we can easily compare the literacy rates of different religions and gain insights into any potential correlations or patterns.

### General Description:

The visualization we will be creating using Tableau Desktop will be a bar graph displaying the literacy rates of different religions across various countries in the world. The x-axis will represent the different religions, such as Hindu, Taoist, Muslim, etc., while the y-axis will represent the literacy rate in Numbers. The bars will be color-coded based on the religion they represent, making it easy to distinguish between different groups. By visually comparing the bar heights, we can gain insights into the literacy rates of different religions and identify any potential trends or patterns. Overall, this bar graph will provide a clear and concise visualization of the relationship between religion and literacy rates in the world.

### Steps to achieve :

- 1.Connect to the World data set in Tableau Desktop.
- 2.Drag the "Religion" dimension to the Rows shelf.
- 3.Drag the "Literacy Rate" measure to the Columns shelf.

4. Change the mark type to "Bar" by clicking on the "Automatic" mark type in the Marks card and selecting "Bar".
  5. Drag the "Religion" dimension to the Color shelf.
  6. Click on the drop-down arrow in the Color shelf and select "Green" as the color.
  7. Adjust the size of the bars as desired. Add any necessary labels or titles to the graph.
- Save and share the visualization as desired.

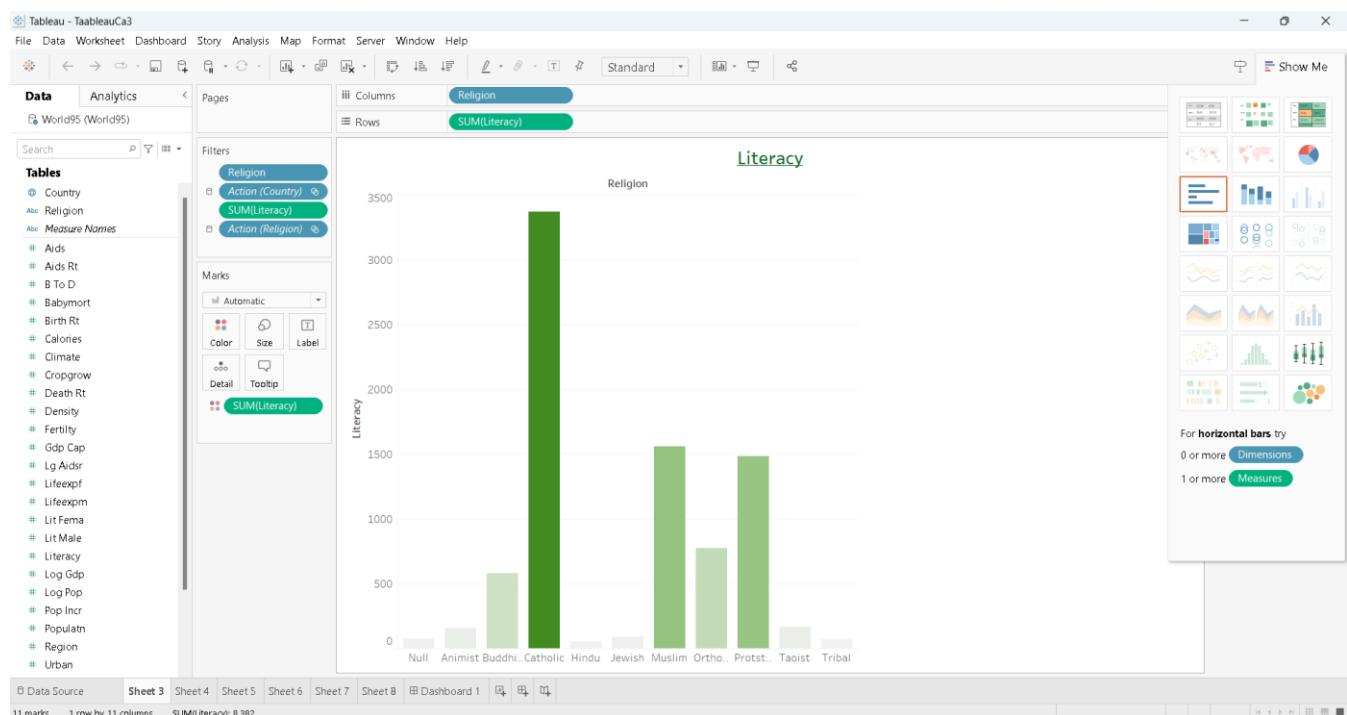
## Analysis Results

The bar graph shows literacy rate vs religion from the data.

Sum of Literacy for each Religion. Color shows sum of Literacy. The data is filtered on Action (Country) and Action (Religion). The Action (Country) filter keeps 109 members. The Action (Religion) filter keeps 11 members. The view is filtered on Religion and sum of Literacy. The Religion filter keeps 11 of 11 members. The sum of Literacy filter includes everything.

The analysis shows that catholic religion has the highest literacy rate. With 3366.

## Visualization



## **Second Objective - Country Vs Urban Area**

### **Introduction:**

In this report, we visualized the relationship between country and urban areas using a line chart. The chart was created using data from around the world, and it shows how the percentage of urban population has changed over time in different countries. By analyzing the chart, we can gain insights into the urbanization trends and patterns in different regions of the world, and how they have evolved over time. This information can be valuable for policymakers and researchers who are interested in understanding the causes and effects of urbanization on societies and economies.

### **General Description:**

The line chart allowed us to track changes in literacy rates across different levels of urbanization, from highly rural to highly urban areas.

The x-axis of the chart represents the levels of urbanization, ranging from low to high, while the y-axis represents the corresponding literacy rates. The line chart shows a clear positive relationship between urbanization and literacy rates, with literacy rates increasing as urbanization levels increase.

Overall, the line chart effectively illustrates the relationship between literacy rates and urbanization and provides valuable insights into the importance of urbanization in promoting literacy and education.

### **Specific Requirements, functions and formulas:**

1. Drag the "Country" dimension to the Rows shelf.
2. Drag the "Urban Area" measure to the Columns shelf.

3.Change the mark type to "Line" by clicking on the "Automatic" drop-down menu on the Marks card and selecting "Line".

4.Drag the "Urban Area" measure to the Color shelf.

5.Click on the color legend to open the color options.

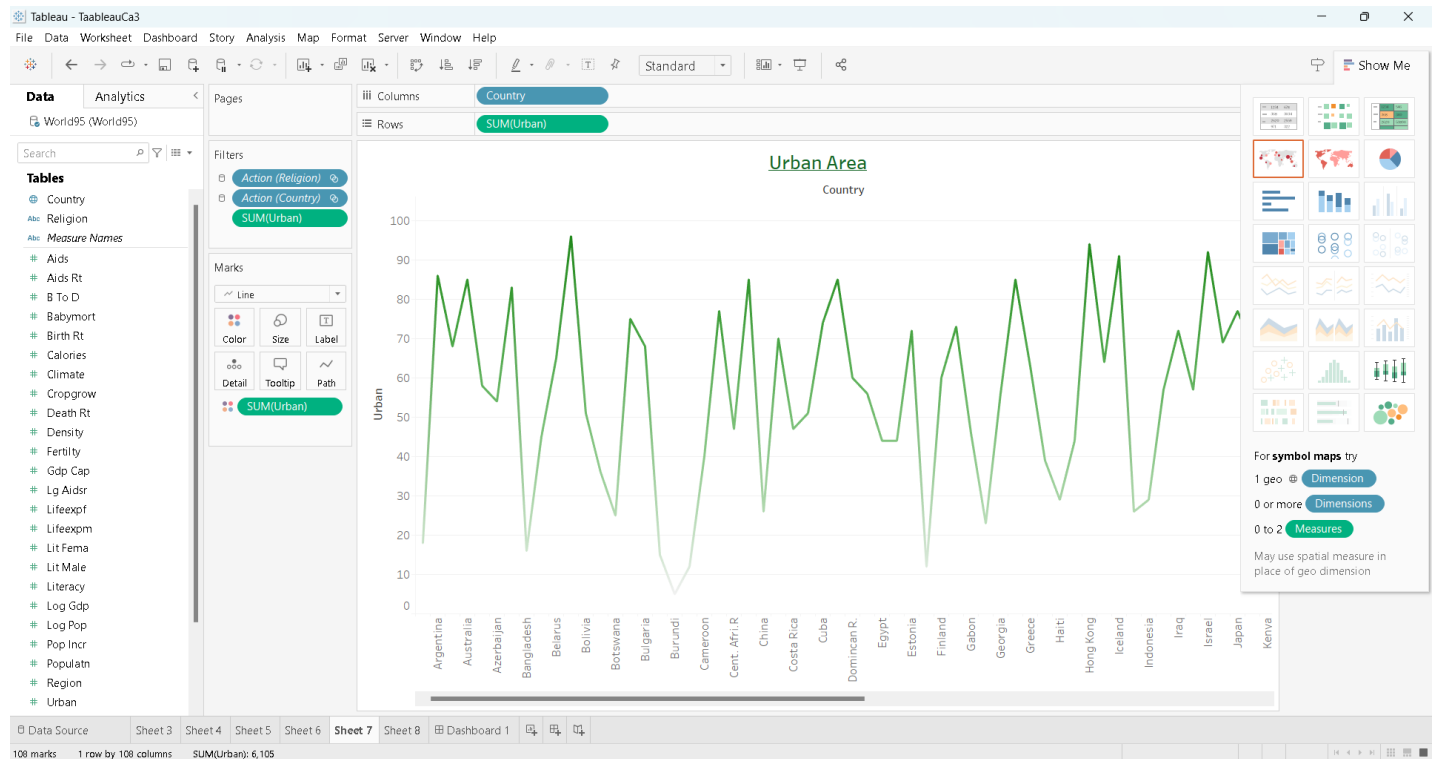
6.Select "Green" as the color for the urban area data.

Adjust any other formatting as required.

## Analysis Results:

The trend of sum of Urban for Country. Color shows sum of Urban. The data is filtered on Action (Religion) and Action (Country). The Action (Religion) filter keeps 11 members. The Action (Country) filter keeps 109 members. The view is filtered on sum of Urban, which keeps non-Null values only.

## Visualization:



## **THIRD OBJECTIVE - COUNTRY VS POPULATION**

### **Introduction:**

the objective was to visualize the relationship between countries and their populations using a map. to create an interactive and visually appealing map that displays the population of each country. The map provides a clear and easy-to-understand representation of how population is distributed across the globe. This visualization allows us to identify countries with the largest populations, as well as patterns and trends in population density. Overall, this project demonstrates the power of data visualization tools like Tableau Desktop in providing insights and understanding of complex data sets.

### **General Description:**

The objective of this report was to visualize the relationship between country and population using a map . The visualization aimed to provide an easy-to-understand and engaging representation of the data to allow for quick insights and observations.

To achieve this objective, we utilized the mapping features in Tableau to plot the population data for each country on a world map. The resulting visualization provided a clear and intuitive representation of the population distribution across different countries and regions. By using color-coding or sizing the markers on the map, we were able to highlight differences in population size between countries, and also identify trends or patterns in the data.

The visualization in this report was designed to be interactive, allowing users to explore the data further and identify specific countries or regions of interest. Users can zoom in or out of the map to see more or less detail, hover over individual data points to see specific population values, or use filters and other tools to modify the view and focus on specific subsets of data.

### **Steps To Achieve:**

Drag the country field to Rows and the population field to Columns.

Change the chart type to map by selecting "Map" from the "Show Me" panel.

Select "Filled Map" from the map options in the "Marks" card.

Drag the population field to the "Color" card in the Marks card.

In the "Color" card, select a green color palette.

Adjust the map to show the level of detail you want. You can zoom in and out, adjust the map layers, and adjust the size of the marks as needed.

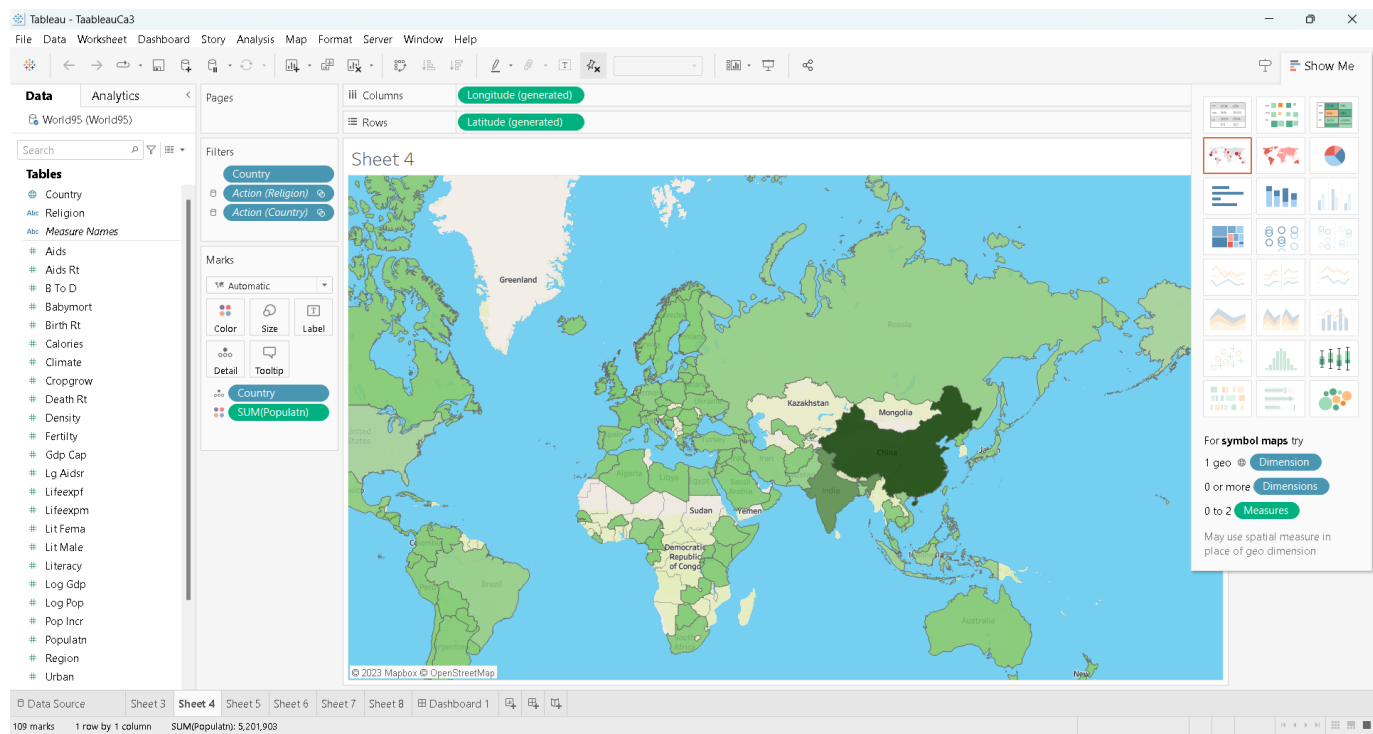
To add additional context to the visualization, you can add labels or tooltips to show the name of each country and its population.

Save the visualization and share it with others as needed.

## Analysis Result:

Map based on Longitude (generated) and Latitude (generated). Color shows sum of Population. Details are shown for Country. The data is filtered on Religion and Country. The Religion filter keeps 11 members. The Country filter keeps 109 members. The view is filtered on Country, which keeps 109 of 109 members.

## Visualization:



## **FOURTH OBJECTIVE - COUNTRY VS DENSITY**

### **Introduction:**

In this Objective, we present a visualization of the relationship between country and density using a bubble chart. A bubble chart is a type of chart that displays data as a set of bubbles or circles, with the size and position of each bubble representing the value of one or more variables. In this particular visualization, we use the bubble chart to show the relationship between country and density. The size of each bubble represents the population density of a particular country, while the position of the bubble represents the country's location on the X-Y plane. By visualizing this data in a bubble chart, we can quickly and easily see which countries have the highest population densities and how they are distributed across the world.

### **General Description:**

In this report, we have used Tableau Desktop to create a bubble chart to visualize the relationship between country and density. A bubble chart is a type of chart that uses circles (or bubbles) to represent data points. The size of each bubble is proportional to the value of a particular variable, while the position of the bubble on the X-Y plane represents the values of two other variables.

In our specific visualization, we have used the bubble chart to display the population density of countries around the world. The size of each bubble represents the population density of a particular country, while the position of the bubble represents the country's location on the X-Y plane. This allows us to quickly see which countries have the highest population densities and how they are distributed across the world.

By using this visualization, we can gain valuable insights into the relationship between country and density, and use these insights to inform decision-making in a variety of contexts. Through the use of Tableau Desktop, we have created an interactive visualization that allows users to explore the data and gain a deeper understanding of the relationship between country and density.



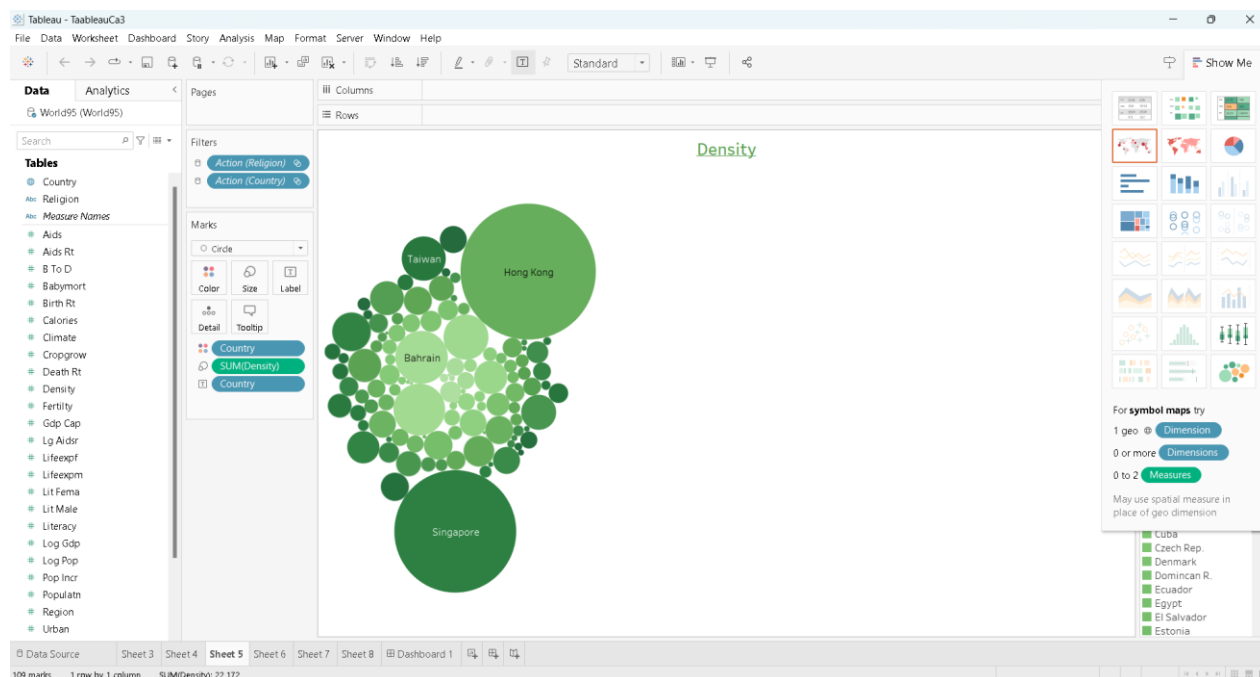
## Steps:

1. Drag the "Country" field to the Rows shelf and the "Density" field to the Columns shelf.
2. Change the mark type to "Circle" by clicking on the drop-down menu in the "Marks" card and selecting "Circle."
3. Drag the "Density" field to the "Size" card to adjust the size of the circles based on density.
4. Click on the "Color" card and select "Density" from the drop-down menu.
5. Click on the "Palette" drop-down menu and choose the "Green" color palette.
6. To add labels to the bubbles, drag the "Country" field to the "Label" card.
7. You can also adjust the formatting, title, and axis labels as desired.

## Analysis Result:

Color shows details about Country. Size shows sum of Density. The marks are labeled by Country. The data is filtered on Religion and Country. The Religion filter keeps 11 members. The Country filter keeps 109 members.

## Visualization:



## **FIFTH OBJECTIVE - COUNTRY VS POPULATION INCREMENT**

### **Introduction:**

In this Objective, we will be visualizing the relationship between different countries and their population increments using a pie chart . A pie chart is a circular chart divided into sectors, each representing a proportion of the whole. The size of each sector is proportional to the data it represents, making it an ideal choice for showing percentages or proportions.

In our case, we will use a pie chart to represent the population increments of different countries. The chart will show each country as a sector in the circle, with the size of the sector representing the population increment for that country. This will give us a quick visual comparison of how each country's population is growing relative to the others.

### **General Description**

A pie chart is a circular graph that is divided into slices to represent data. Each slice represents a portion of the total, and the size of each slice is proportional to its corresponding value.

The pie chart can be used to show the percentage of population growth for each country, with each slice representing a specific country. The size of the slice can be determined by the percentage of the total population growth that the country represents. This will allow the viewer to quickly and easily compare the population growth of different countries in relation to each other.

It is important to note that pie charts are best suited for representing data with a small number of categories, as they can become cluttered and difficult to read with too many slices.

Additionally, it may be useful to include labels or a legend to help the viewer understand which slice represents which country.

## Steps to Achieve

Drag the "Country" field to the "Columns" shelf.

Drag the "Population Increment" field to the "Rows" shelf.

Click on the "Show Me" button on the top right corner of the screen and select the "Pie Chart" option.

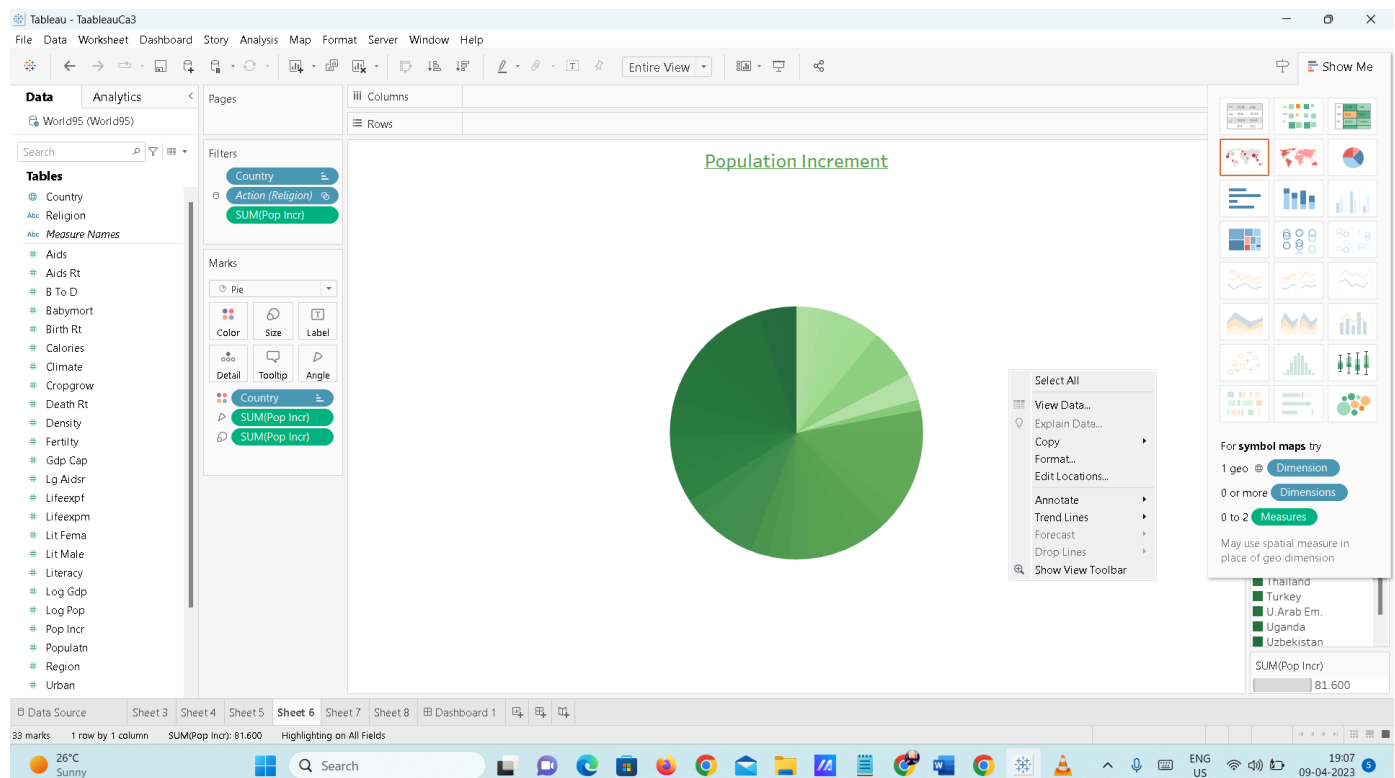
A pie chart will be generated, showing the distribution of population increments across different countries.

To customize the pie chart, you can click on the "Marks" card on the left-hand side of the screen and adjust various settings such as colors, labels, and legends.

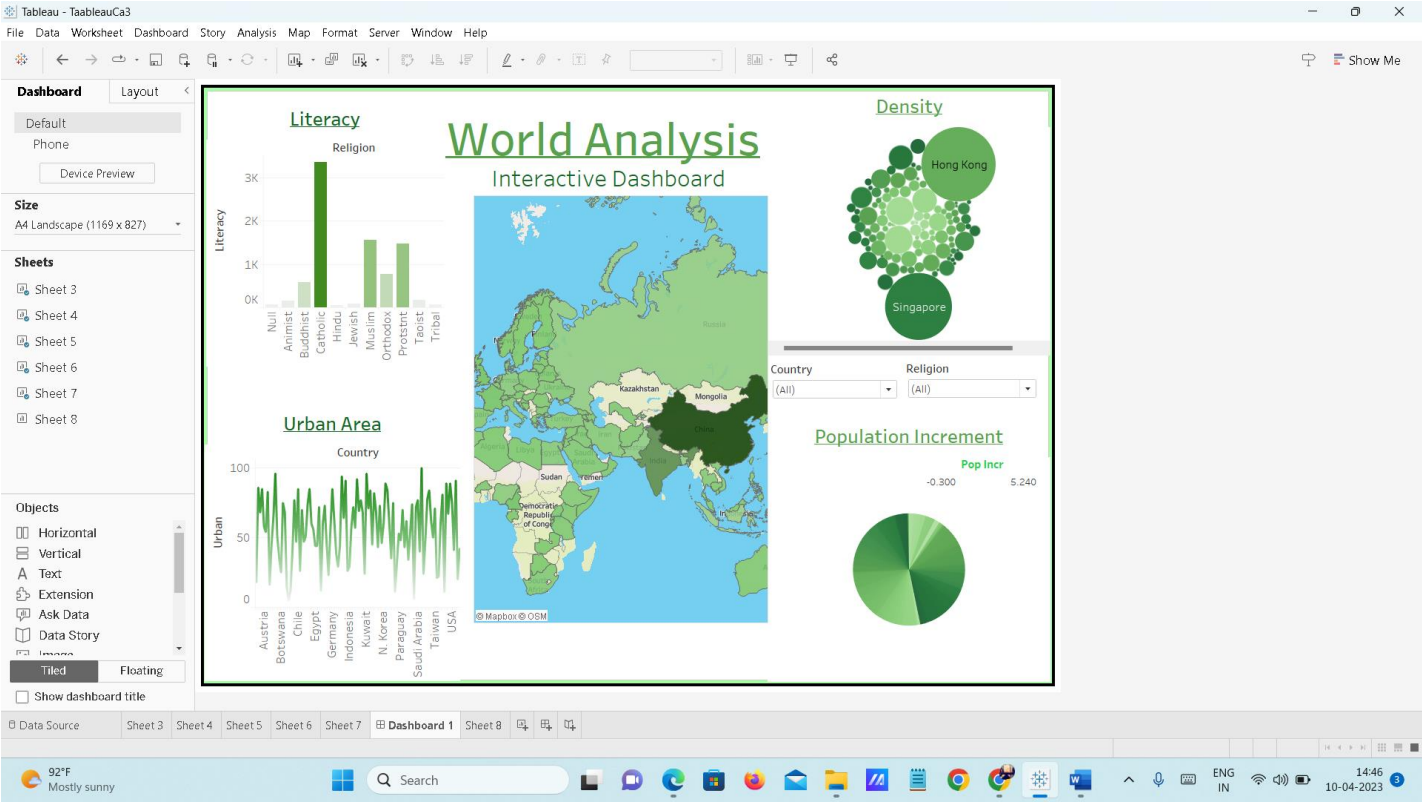
## Analysis Result

Country (color) and sum of Pop Incr (size). The data is filtered on Action (Religion), which keeps 11 members. The view is filtered on Country and sum of Pop Incr. The Country filter keeps 43 of 109 members. The sum of Pop Incr filter ranges from 1.000 to 5.240.

## Visualization



# DashBoard On World Analysis



## **FUTURE SCOPE**

1. Compare the literacy rates, population, and density of countries across different continents and identify trends and patterns.
2. Use predictive analytics to forecast the population growth rate of countries in the next 5-10 years.
3. Analyze the impact of education on a country's economic growth and development.
4. Create a heat map to visualize the population density of different regions of the world.
5. Explore the relationship between population density and resource consumption.
6. Use demographic data to predict the impact of population growth on the environment.
7. Analyze the relationship between religion and population growth.
8. Create a time-series analysis to show how literacy rates have changed over the years in different countries.
9. Analyze the impact of population growth on employment and job opportunities in different countries.

## **REFERENCES**

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