

Report on Data Visualization

World Population Data

Submitted on partial fulfillment of the requirements for the award of degree of

Bachelor of Technology

In

Computer Science & Engineering

Submitted to

LOVELY PROFESSIONAL UNIVERSITY

PHAGWARA, PUNJAB



FROM 01/03/2023 TO 15/04/2023

SUBMITTED BY -

Name of Student: ABHINAV SRIVASTAVA

Registration Number: 12003236

Signature of the Student:

To whom so ever it may concern

I, ABHINAV SRIVASTAVA,12003236, hereby declare that the work done by me on “**World Population Data**”, is a record of original work for the partial fulfillment of the requirements for the award of the degree, **B. Tech in Computer Science & Engineering.**

Name of Student: ABHINAV SRIVASTAVA

Registration Number: 12003236

Signature of the Student:

Date: 05-11-2022

ACKNOWLEDGEMENT

With the blessings of Almighty God, I have been able to complete my project work of Data Visualization (INT-233) of B.Tech. in Computer Science & Engineering. I am indebted to all who have contributed in taking up the project work as part of the B.Tech. program and I express my gratitude to all of them from core of my heart. I express my deepest thanks to **Ashu**, instructor of course Data Visualization for giving necessary advices, guidance and arrange all resources to make my project work easier. I take this moment to acknowledge her contribution gratefully. I also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department for their kind assistance and cooperation during the development of my project.

ABSTRACT

The purpose of this project is to develop a computerized and interactive dashboard to analyze the data in a scientific manner. In this project, the dataset is chosen from a website [kaggle.com](https://www.kaggle.com) which is about to predict the population of various country. Previously there were no such tools to analyze whole country population. This data analysis will help the people to analyze the world population in different criteria. In this project, the data set used are very scientifically taken.

System Requirements

A. Project Profile:

Project Title:	World Population Data
Organization:	Lovely Professional University
Developed By:	Abhinav Srivastava
Internal Guide:	Ashu

B. Project Tools:

Platform tools	Tableau 2022.4
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C. Hardware Requirement Recommended:

Internet Connection	Not Required
Version	Windows 7 and above.

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CHAPTER 1-INTRODUCTION

1.1 ABOUT DATA MANAGEMENT:

Data visualization is the representation of information and data using charts, graphs, maps, and other visual tools. These visualizations enable data professionals to easily understand any patterns, trends, or outliers in a data set.

Data visualization also presents data to the general public or specific audiences without technical knowledge in an accessible manner. For example, the health agency in a government (in the US, that would be the CDC) might provide a chart of populations with the highest cases of COVID-19 or a map of a country colored according to vaccinated regions.

The purpose of data visualization is to help drive informed decision-making and to add colorful meaning to an otherwise bland database.

Tableau:

Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format. Tableau helps create the data that can be understood by professionals at any level in an organization. It also allows non-technical users to create customized dashboards.

Data analysis is very fast with Tableau tool and the visualizations created are in the form of dashboards and worksheets.

The best features of Tableau software are

- Data Blending
- Real time analysis
- Collaboration of data

The great thing about Tableau software is that it doesn't require any technical or any kind of programming skills to operate. The tool has garnered interest among the people from all sectors such as business, researchers, different industries, etc.



Benefits of Using Tableau:-

- 1. Data visualization:** Tableau is a data visualization tool first and foremost. Therefore, its technology is there to support complex computations, data blending and dashboarding for the purpose of creating beautiful visualizations that deliver insights that cannot easily be derived from staring at a spreadsheet. It has climbed to the top of the data visualization heap because of its dedication to this purpose
- 2. Quickly Create Interactive visualizations:** Using drag-n-drop functionalities of Tableau, the user can create a very interactive visual within minutes. The interface can handle endless variations while also limiting you from creating charts that are against data visualization best practices. You can check out some of the amazing visuals created at the [Tableau Gallery](#).
- 3. Ease of Implementation:** There are many different types of visualization options available in Tableau which enhance the user experience. Also, Tableau is very easy to learn compared to Python, Business Objects and Domo, anyone without having knowledge of coding can easily learn Tableau.
- 4. Tableau can handle large amounts of data:** Tableau can handle millions of rows of data with ease. Different types of visualization can be created with a large amount of data without impacting the performance of the dashboards. Also, there is an option in Tableau where the user can make “live” connections to different data sources like SQL etc.
- 5. Use of other scripting languages in Tableau:** To avoid the performance issues and to do complex table calculations in Tableau, users can incorporate Python or R. Using Python script can take the load off the software by performing data cleansing tasks with packages. However, Python is not a native scripting language accepted by Tableau. So you can import some of the visuals or packages. However, you can see how this is done with [Python for Power BI](#).

6. Mobile Support and Responsive Dashboard: Tableau

Dashboard has a great reporting feature that allows you to customize dashboard specifically for a certain device such as a mobile phone or

laptop. Tableau automatically understands which device the user is viewing the report on and make adjustments to ensure that the right report is served to the right device.

7. Tableau Company Strategy: Tableau has done a great job climb its way to the top of data visualization tools Tableau has spent more than six years as a leader. However, with the increasing interest in data science, artificial intelligence, and machine learning, Tableau may be left behind if it doesn't innovate quickly.

CHAPTER-2: - OVERREVIEW

Tableau provides you different types of charts that suit your purpose. Based on the type of data, you can create a chart. You can also change the chart type later.

Excel offers the following major chart types –

- Bar Chart
- Heat Map
- Maps
- Pie Charts
- Stacked Bar chart
- Side-by-Side
- Tree Maps
- Funnel Chart
- Line Chart
- Area chart
- Gaant chart
- Histogram
- Bubble chart

Bar Chart: Bar charts are one of the most common data visualizations. You can use them to quickly compare data across categories, highlight differences, show trends and outliers, and reveal historical highs and lows at a glance. Bar charts are especially effective when you have data that can be split into multiple categories.

Line Chart: The line chart, or line graph, connects several distinct data points, presenting them as one continuous evolution. Use line charts to view trends in data, usually over time (like stock price changes over five years or website page views for the month). The result is a simple, straightforward way to visualize changes in one value relative to another.

Pie Chart: Pie charts are powerful for adding detail to other visualizations. Alone, a pie chart doesn't give the viewer a way to quickly and accurately compare information. Since the viewer has to create context on their own, key points from your data are missed. Instead of making a pie chart the focus of your dashboard, try using them to drill down on other visualizations.

Maps: Maps are a no-brainer for visualizing any kind of location information, whether it's postal codes, state abbreviations, country names, or your own custom geocoding. If you have geographic information associated with your data, maps are a simple and compelling way to show how location correlates with trends in your data.

Density Maps: Density maps reveal patterns or relative concentrations that might otherwise be hidden due to an overlapping mark on a map—helping you identify locations with greater or fewer numbers of data points. Density maps are most effective when working with a data set containing many data points in a small geographic area.

Scatter Plot: Scatter plots are an effective way to investigate the relationship between different variables, showing if one variable is a good predictor of another, or if they tend to change independently. A scatter plot presents lots of distinct data points on a single chart. The chart can then be enhanced with analytics like cluster analysis or trend lines.

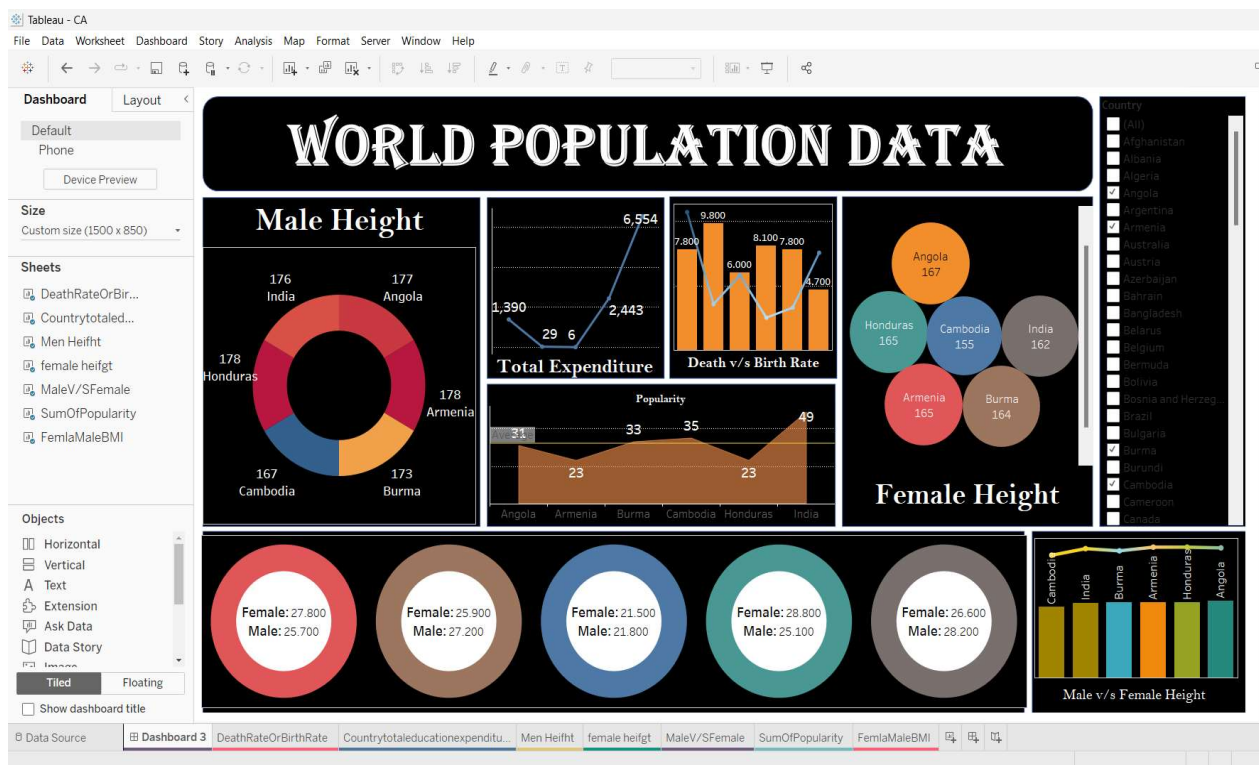
Gantt Chart: Gantt charts display a project schedule or show changes in activity over time. A Gantt chart shows steps that need to be completed before others can begin, along with resource allocation.

Bubble Chart: Although bubbles aren't technically their own type of visualization, using them as a technique adds detail to scatter plots or maps to show the relationship between three or more measures. Varying the size and color of circles creates visually compelling charts that present large volumes of data at once.

Treemap: Treemaps relate different segments of your data to the whole. As the name of the chart suggests, each rectangle in a treemap is subdivided into smaller rectangles, or sub-branches, based on its proportion to the whole. They make efficient use of space to show percent total for each category.

CHAPTER-3 IMPLEMENTATION & RESULTS

Dashboard

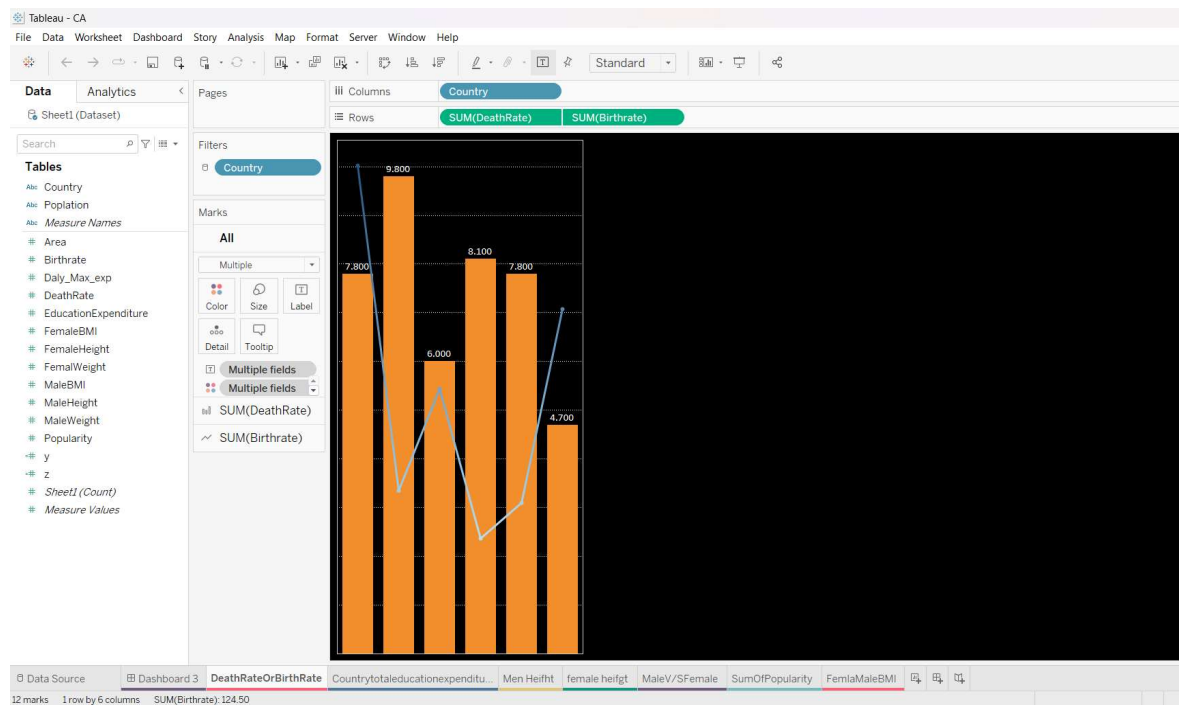


Dataset Table

AutoSave

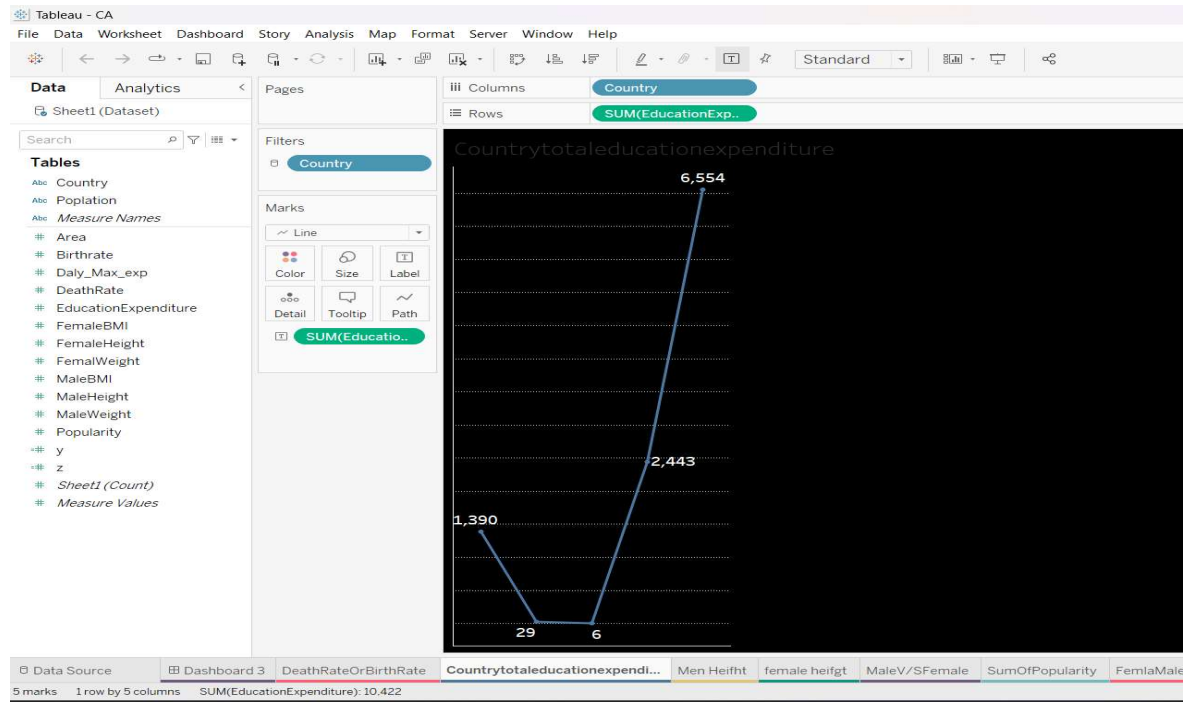
off

OBJECTIVE 1: - Combo Chart (Line & Bar chart)



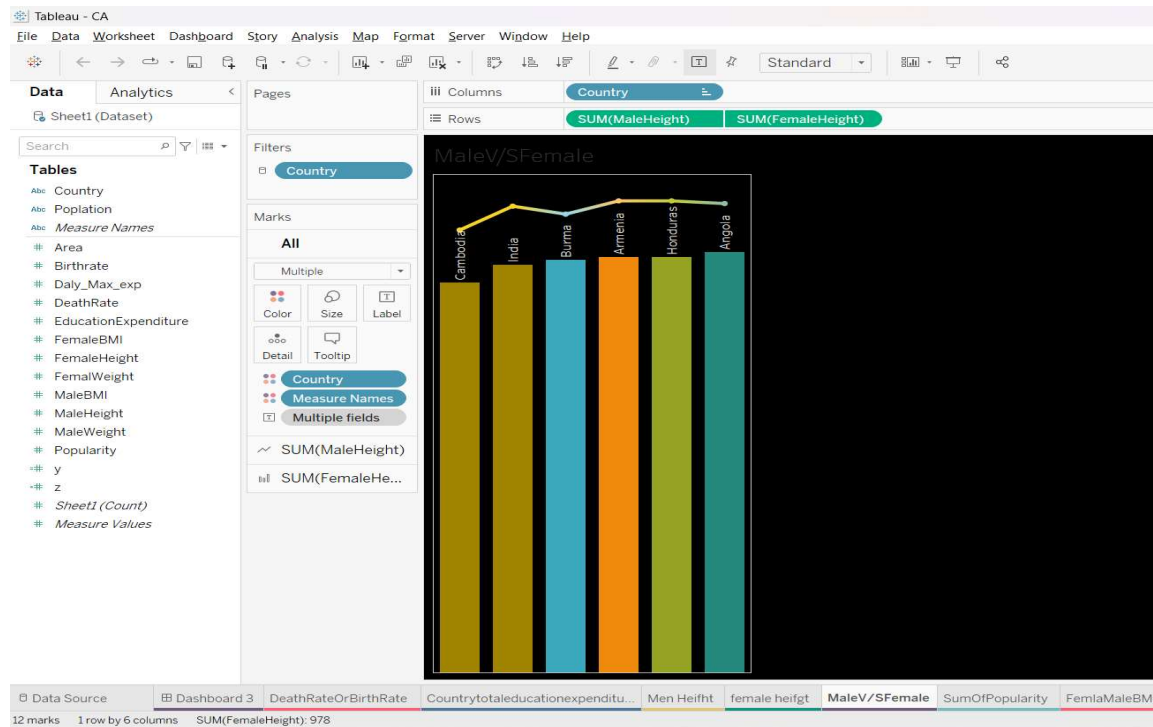
- This chart shows the death and birth rate of different countries.

OBJECTIVE 2: - Line Chart



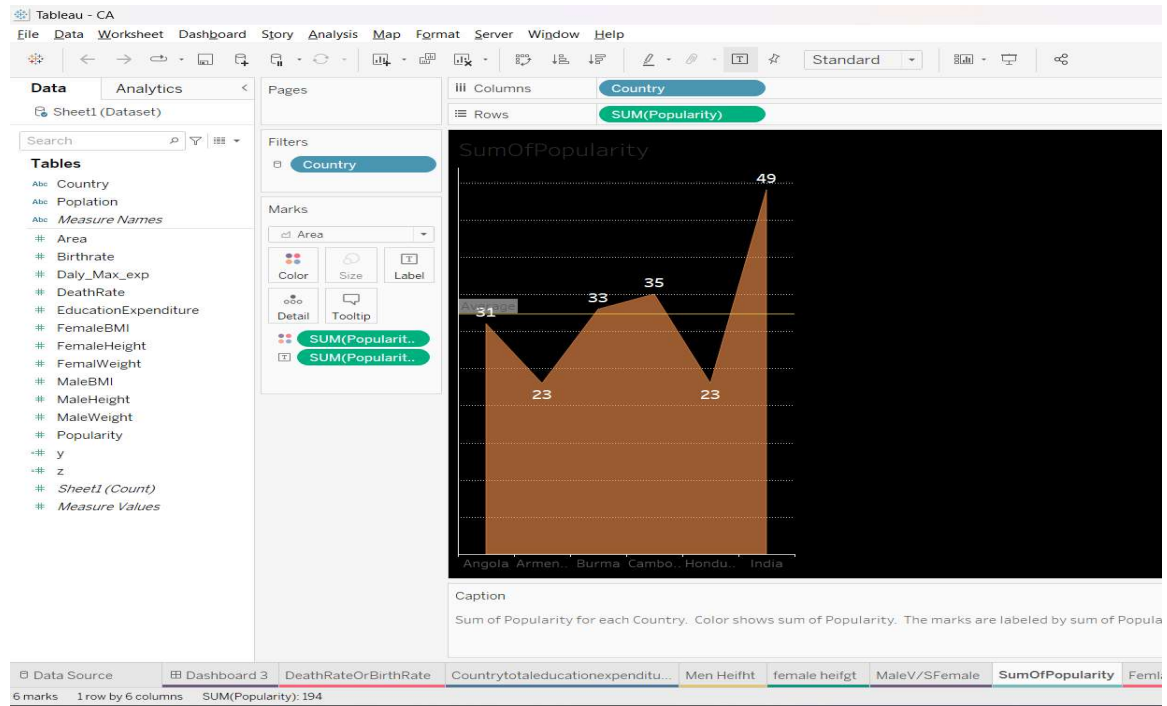
- This chart shows the Education Expenditure of different Countries.

OBJECTIVE 3: -Combo Chart(Line & Bar chart)



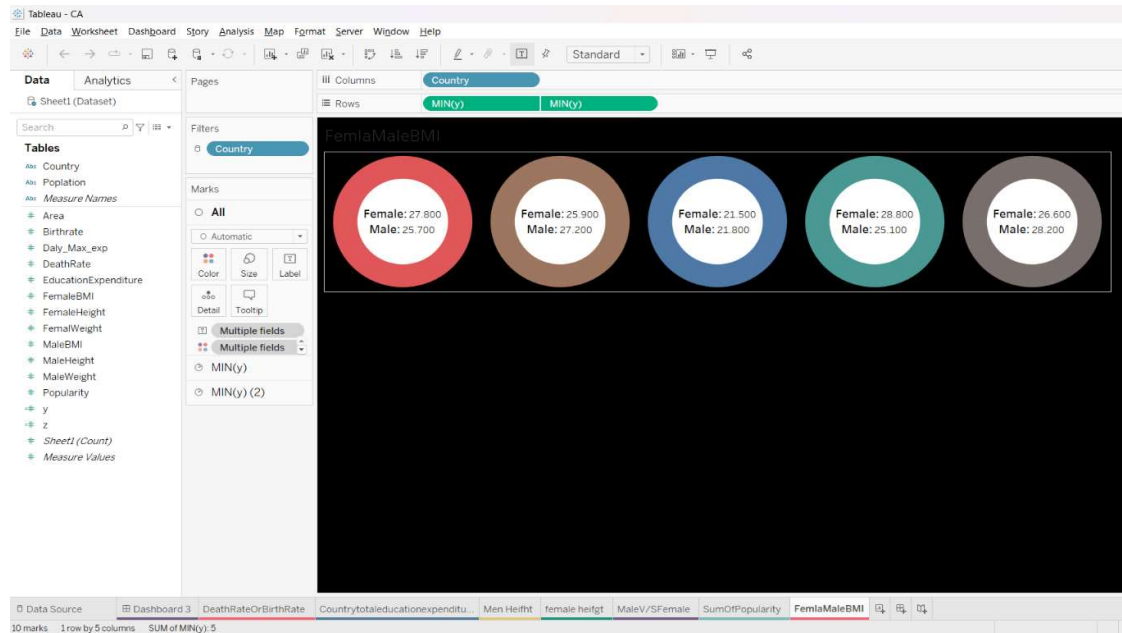
- This chart compare the Male and Female Height of different countries.

OBJECTIVE 4: Area Chart



- This chart shows the total popularity of different countries.

OBJECTIVE 5: - Don ough Charts



- This chart showing the Male and Female BMI.

CHAPTER-4 CONCLUSION

At present a population is increasing day by day. Previously there were no such tools to analyze whole country population. But this project provides a way to analyze population of different countries on the basis of different factors like country with popularity, death rate, birth rate, height, etc.