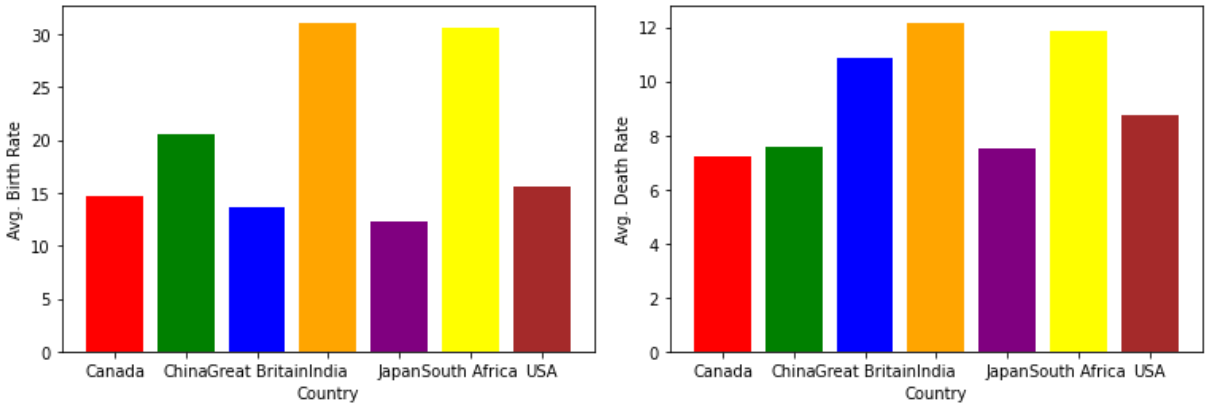
Analysis and Visualization of World Bank Data (WDI) indicator

This report is from using World Open Bank and process it for analyzing and visualizing significant countries. Various indicators have been chosen, such as Total Population, GDP ($), unemployment, electric power consumption, and agriculture, among others. Among the large countries, the **USA, Great Britain, China, Japan, Africa, Canada, and India** were selected for analysis.

Visualization 1: Analysis of Average Birth and Death Rate for Countries.

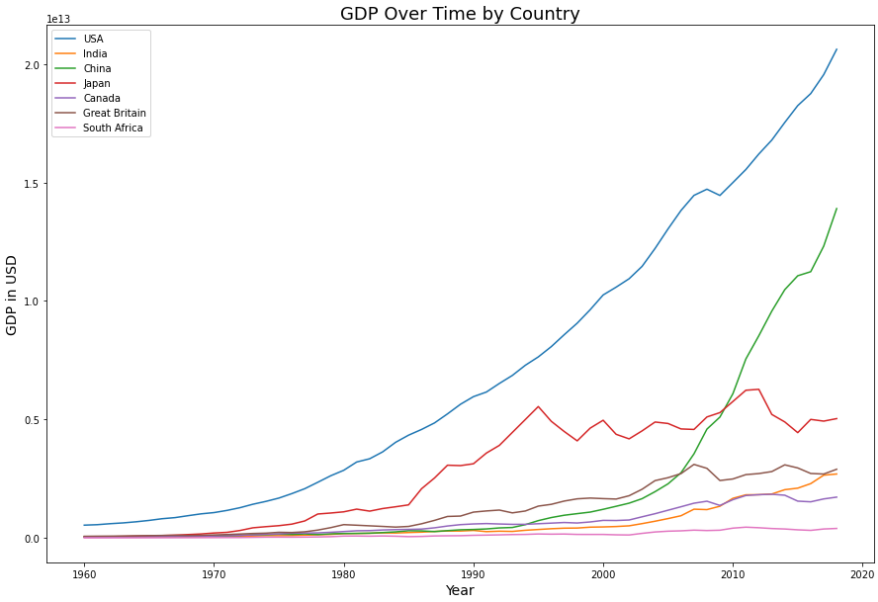
A bar plot is a good option for visualizing average birth and death rates country-wise because it allows for easy comparison of the rates between different countries. The length of each bar represents the value of the rate, making it easy to see which countries have higher or lower rates.



Based on the two plots presented above, it is apparent that India has the highest average birth and death rates, despite being the second most populous country in 2018. It is noteworthy that South Africa exhibits a similar trend, which is surprising given its relatively small population. In contrast, China has a higher birth rate than death rate, contributing to its position as the most populous country in the world. Conversely, the United Kingdom has a significantly higher death rate compared to the average birth, leading to a relatively small population.

Visualization 2: A decade of GDP Growth: Exploring for all countries

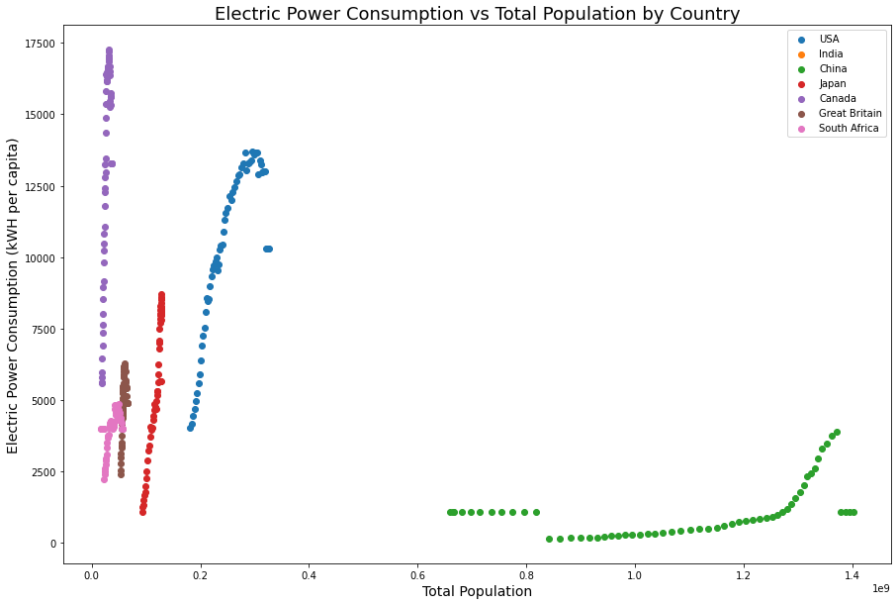
A multi-line plot is best for this situation because it allows us to compare the trends in GDP over time for multiple countries on the same plot, making it easy to identify similarities and differences between countries. It also allows us to easily see how the GDP of each country has changed over time relative to the other countries, providing a more comprehensive view of the data than a single line plot.



- For instance, a line plot is an ideal way to display trends over time and compare patterns across several categories. It is evident that the USA has the highest value of GDP in comparison with all countries and this trend has been seen to be stable for time.
- Meanwhile, GDP of China experienced a low in 2008 but has since then increased substantially due to growth in manufacturing industries, but it still lags far behind the United States.
- Japan's GDP demonstrates a modest rise until 2012, which may be attributed to the country's growth plan aimed at ending deflation, but subsequently dropped, possibly due to natural disasters like an earthquake.

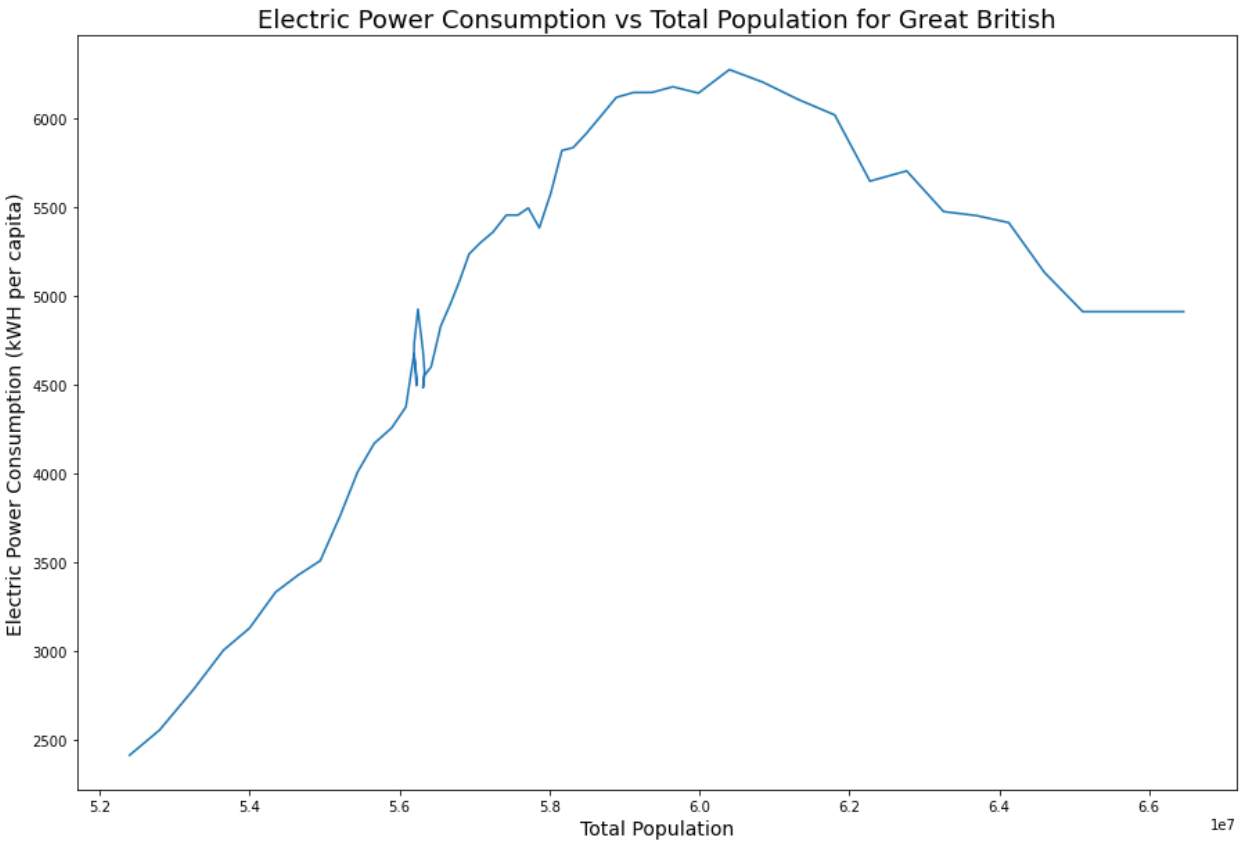
Visualization 3: Total Population and Electric Power Consumption in Countries up to 2015

A scatter plot is the best choice for this scenario because it allows us to visualize the relationship between two continuous variables (Total Population and Electric Power Consumption) for multiple categories (Country) at once, making it easy to identify any patterns or trends. Additionally, the use of markers for each country allows for easy differentiation between the data points, while the legend provides additional information on each country's data.



- The graph that accompanies this text makes it clear that electricity demand will increase alongside population growth.
- China's considerable surge in electric power usage serves as evidence of this correlation.
- Meanwhile, India has experienced an increment in consumption in tandem with the growth of population.
- The breakage of values showing there are some drastic changes either improvement or not.

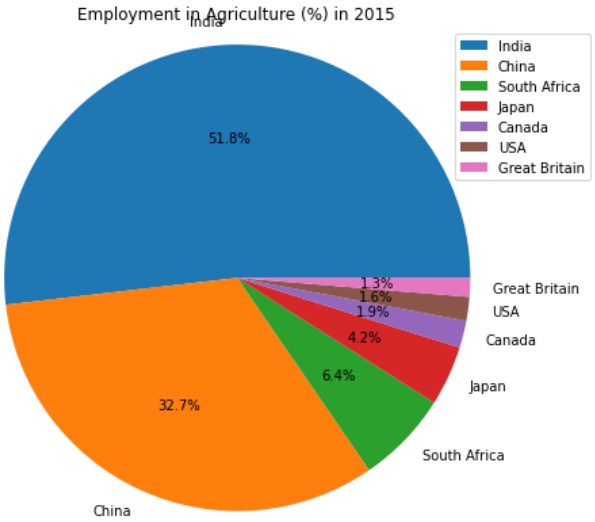
Visualization 3(Cont.): Total Population Vs Electric Power consumption for Britain up to 2015

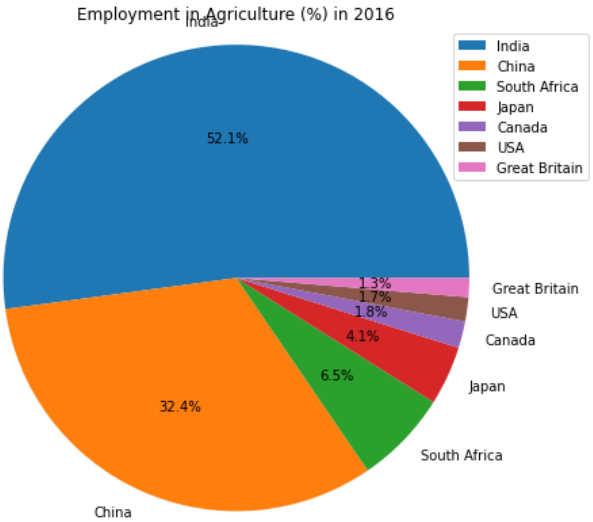


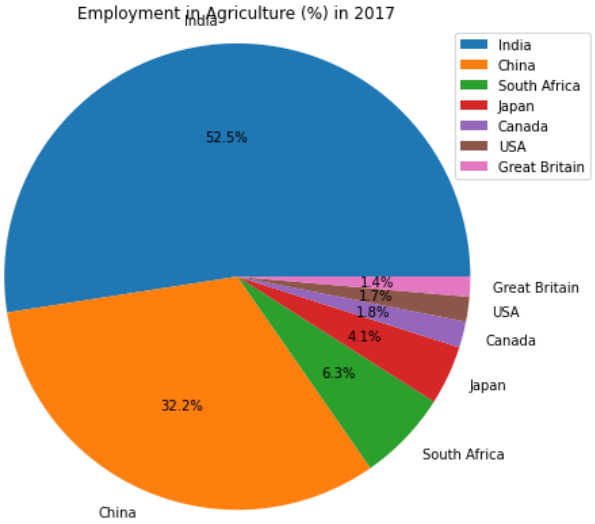
The graph presented above shows a correlation between the electric power usage of Great Britain and its population growth. The trend continued to increase up to a certain point and then goes declining trend. For the Great Britain country, it can be seen that, Great Britain consumes the highest amount of electric power, there can be reason of its cold climate.

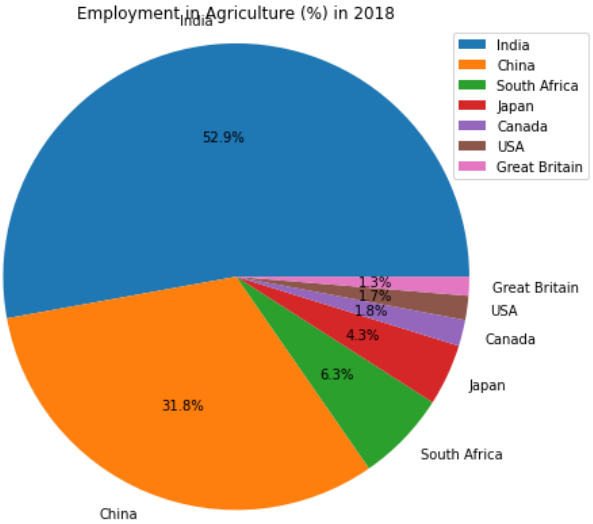
Visualization 4: Year 2015 – 2018 Employment in the Agricultural Sector Across Countries

Pie plots are a good option for showing proportions or percentages of different categories, making them suitable for displaying the relative sizes of employment in agriculture across different countries. They are also visually appealing and can easily convey the top 10 countries with the highest employment in agriculture for each year.









- Agricultural fields are the major part of employment special in Asian countries, India is showing the maximum percentage compared to all other countries. This indicates that India, with a diverse range of food products grown on its soil. China follows India with high labor-intensive farming due to the scarcity of arable land.
- Conversely, the rest of the world has a small percentage of employment in agriculture, with the UK having the lowest percentage, there can be the reason of the food consumption of less than 60 percent produce in the country.

References

- Indicators | Data (worldbank.org) https://data.worldbank.org/indicator?tab=all