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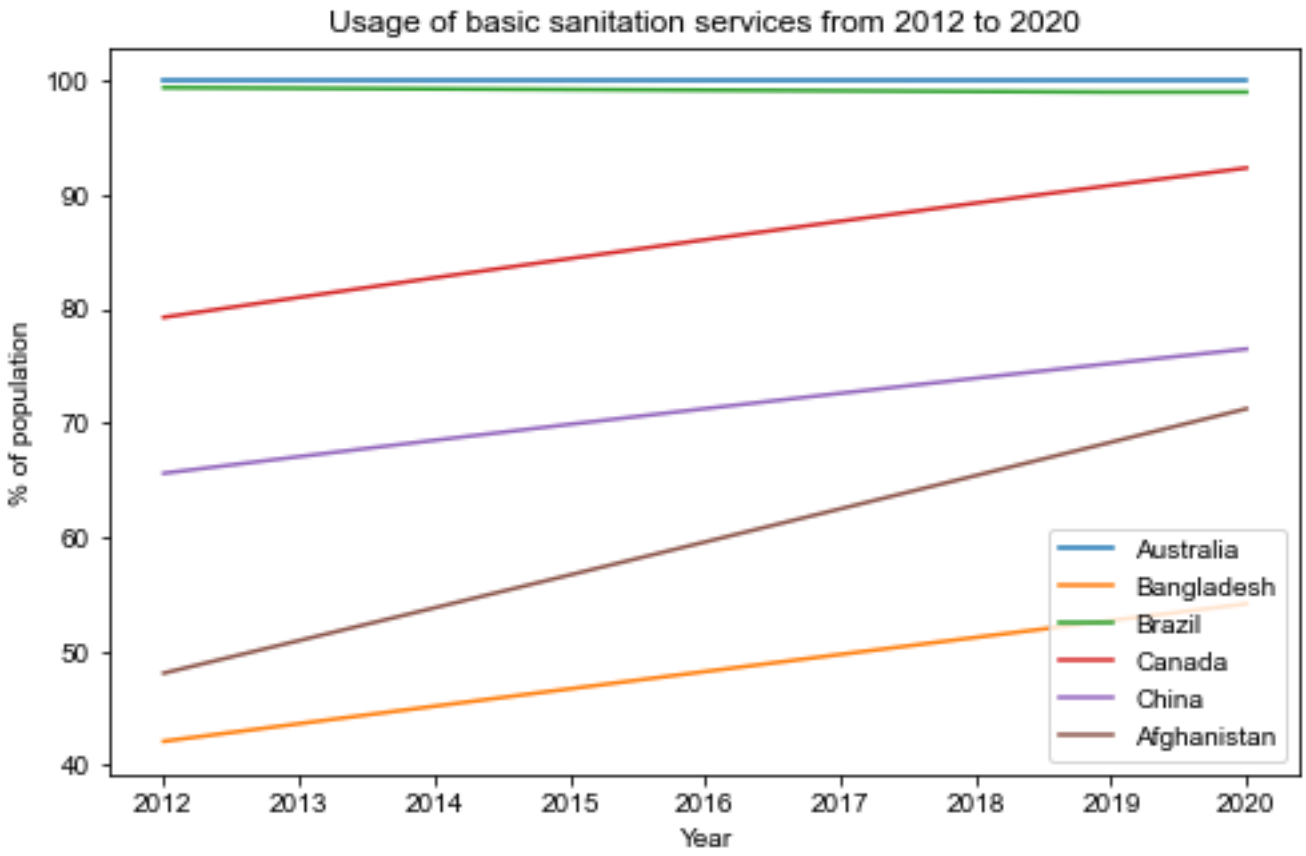
7PAM2000-0901-2023 APPLIED DATA SCIENCE 1

ASSIGNMENT – 1

GITHUB LINK: https://github.com/Revathi343664/ADS1

VISUALISATION 1: LINE PLOT

SOURCE OF DATA SET: https://databank.worldbank.org/source/health-nutrition-and-population-statistics



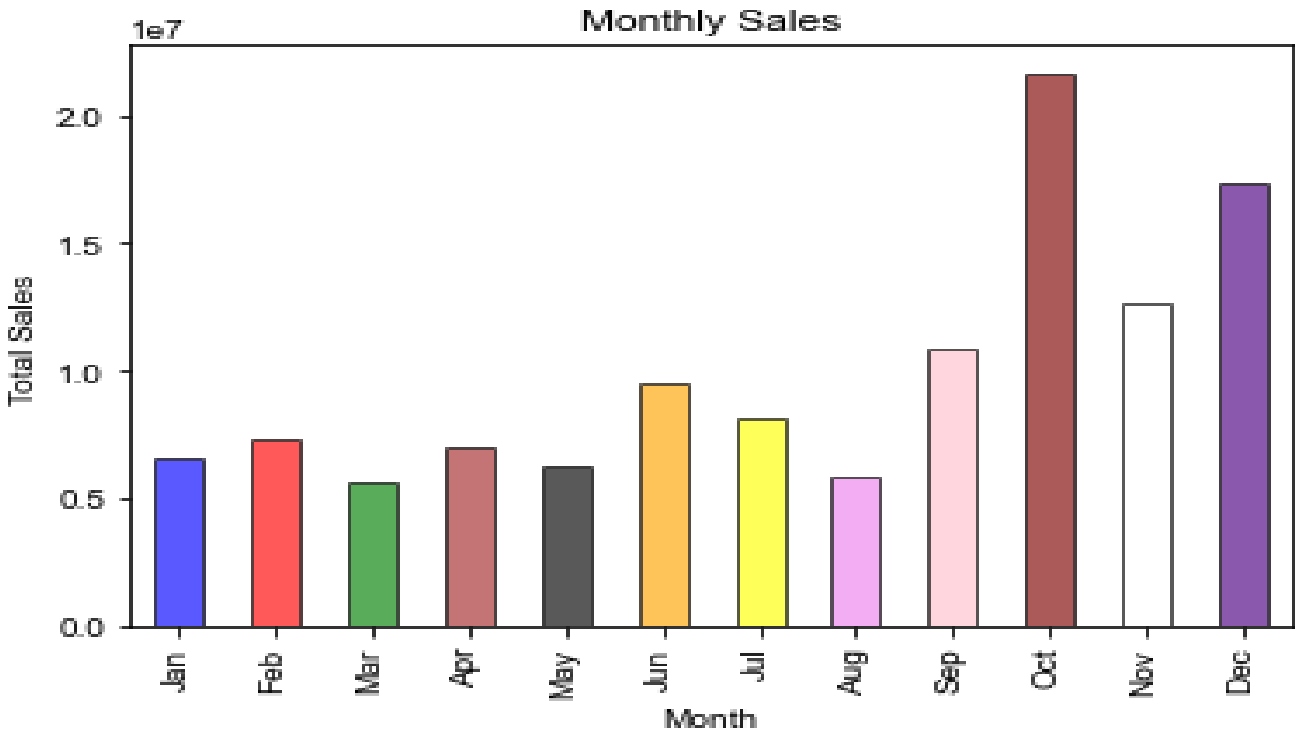
A line plot serves as the apt choice for representing this dataset due to its effectiveness in illustrating continuous trends and variations over time. It particularly excels in comparing the utilization of sanitation services across multiple countries, emphasizing disparities and potential patterns. The distinct lines dedicated to each country make the data easily comprehensible. This visualization is invaluable for policymakers, researchers, and organizations concerned with monitoring sanitation service progress and identifying areas necessitating further attention and development. It provides a straightforward assessment of each country's advancements and aids in shaping decisions regarding sanitation service interventions and policies.

The line plot visualizes alterations in the percentage of the population accessing at least basic sanitation services in selected countries, including Australia, Bangladesh, Brazil, Canada, China, and Afghanistan, spanning from 2012 to 2020. Each country is distinguished by a unique line on the plot, while the x-axis denotes the years, and the y-axis exhibits the percentage of the population with basic sanitation service accessibility. The plot effectively illustrates the evolution of sanitation coverage in these countries, facilitating a comparison of their respective trends and the identification of improvements or declines in sanitation service utilization.

The dataset underscores the consistent and robust performance of Australians and Brazilians regarding their percentage access over time. In contrast, Canada and China demonstrate a consistent upward trajectory in their percentages from 2012 to 2020. On the other hand, Bangladesh reports the lowest percentage, slightly exceeding 40%. Despite experiencing a persistent growth in the percentage of its population accessing basic sanitation services over the years, it still lags behind many other countries. Projections indicate that by 2020, Bangladesh is anticipated to achieve a relatively higher level of basic sanitation service accessibility for its population.

VISUALISATION 2: BAR PLOT

SOURCE OF DATA SET: https://www.kaggle.com/datasets/shwetankchaudhary/power-bi-sample-data?select=Sample+data.xlsx



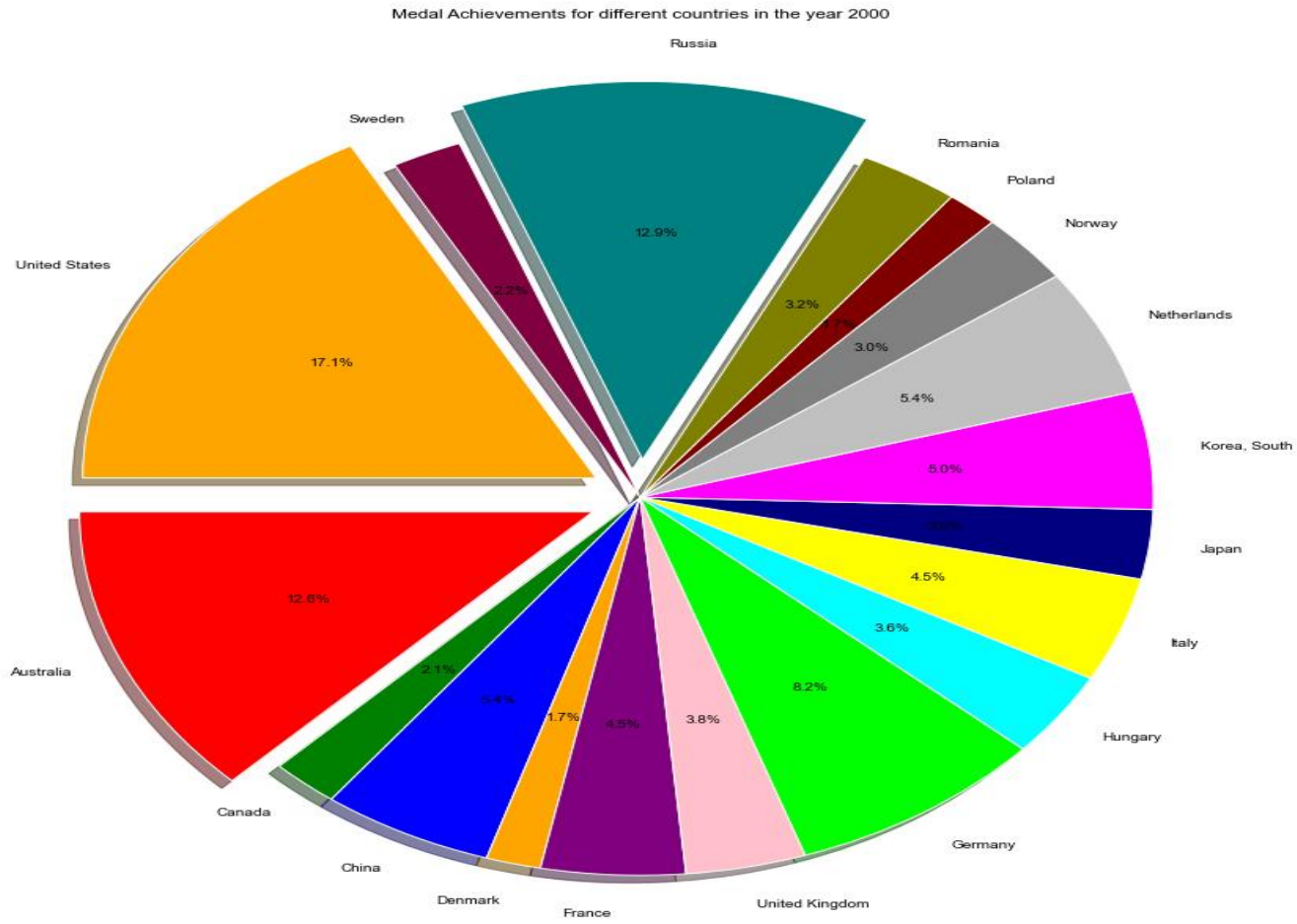
A bar plot is a fitting choice for this dataset due to its ability to present discrete data points (monthly sales) over a continuous variable (months of the year) in a clear and easily understandable manner. It allows for a straightforward comparison of sales between different months, facilitating the identification of trends and patterns. The distinct bars make it simple to distinguish between different months, and the use of colors enhances visual appeal and differentiation. In this context, the bar plot is preferable to other visualization methods, such as line charts, as it emphasizes individual monthly performance without implying a continuous progression.

The bar plot visualizes the monthly sales data for the dataset, displaying the total sales for each month of the year. Each bar corresponds to a specific month, with its height representing the total sales for that month. This visualization effectively communicates the monthly variations in sales, enabling viewers to quickly identify which months had higher or lower sales figures. It also aids in recognizing any seasonal patterns, trends, or irregularities in the sales data. Such a visual representation is valuable for businesses in making informed decisions about inventory management, marketing strategies, and resource allocation based on monthly sales fluctuations.

In this depicted bar chart, the X-axis delineates the monthly timeline, while the Y-axis quantifies the total sales figures. Significantly, October stands out as the month with the highest documented sales, while March registers the lowest sales for the featured products.

VISUALISATION 3: PIE PLOT

SOURCE OF DATA SET: https://www.kaggle.com/datasets/mathurinache/olympicmedals?resource=download



A pie chart is best for this data because it effectively conveys information about the relative performance of different countries in terms of their medal achievements during the specified year. It allows viewers to quickly identify which countries were more successful in the year 2000 and provides a visual comparison of their medal counts. The use of colour, explosion effects, and percentage labels enhances the chart's visual appeal and readability, making it a useful tool for summarizing and presenting this specific aspect of the dataset.

The provided pie chart visualizes the distribution of medal achievements for different countries in the year 2000. Each slice of the pie represents a specific country, and the size of each slice is proportional to the number of medals that country achieved in the year 2000. The chart's colour scheme is designed to be visually distinct for each country, using various RGB colours.

The United States stands at the top, securing the highest share of all medals with 17.1%. Following closely behind are Russia and Australia, holding the second and third positions with 12.9% and 12.6% of the total medals, respectively. In contrast, Poland and Denmark find themselves at the lower end of the spectrum, each claiming a modest 1.7% share of the medals.