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AIM:Design Interactive Dashboards and Storytelling using Tableau / Power BI / R (Shiny) / Python (Streamlit/Flask) / D3.js to be performed on the dataset - Disease spread / Healthcare

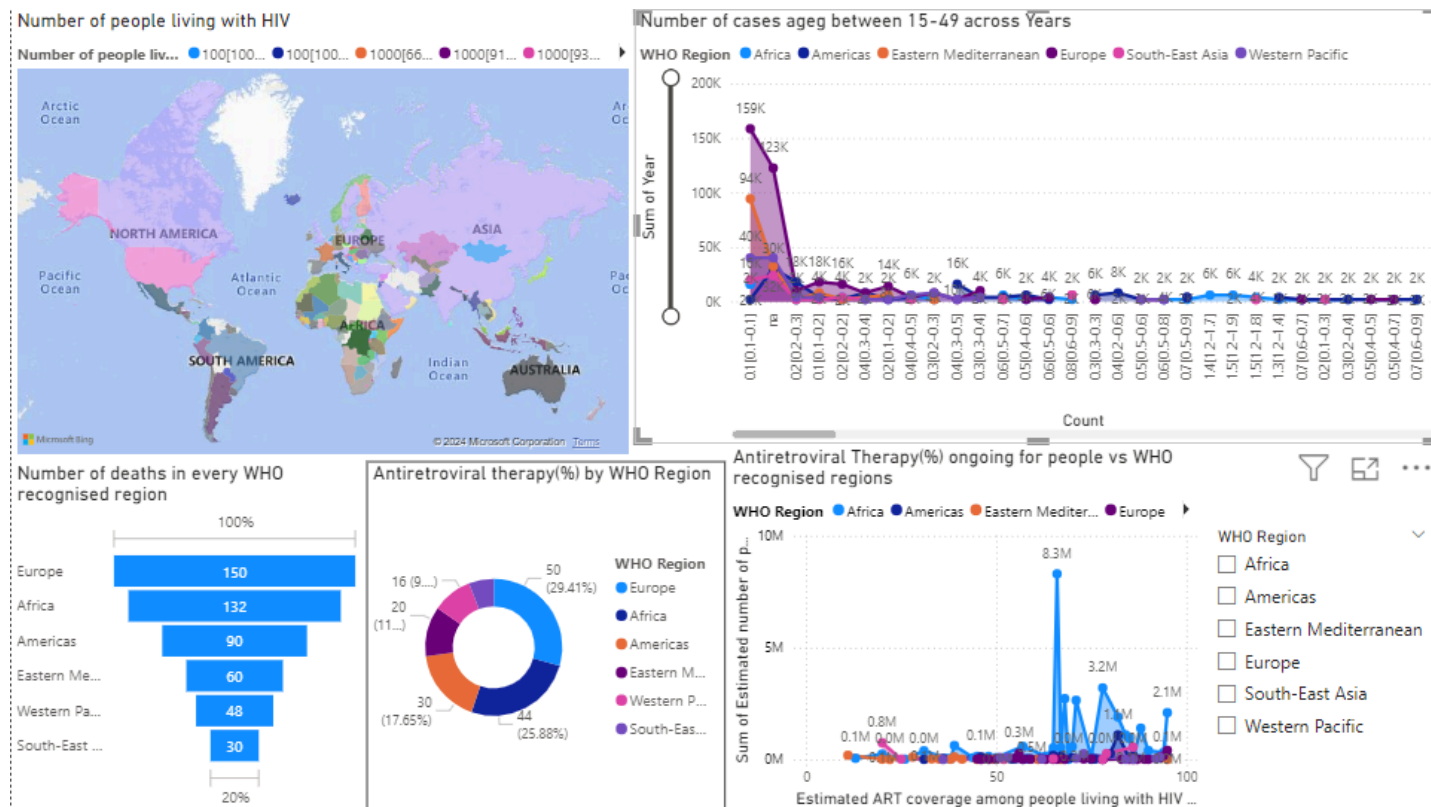
• Create interactive dashboard - Write observations from each chart given below • (Advanced - Word chart, Box and whisker plot, Violin plot, Regression plot (linear and nonlinear), 3D chart, Jitter, Line, Area, Waterfall, Donut, Treemap, Funnel • Basic - Bar chart, Pie chart, Histogram, Timeline chart, Scatter plot, Bubble plot)

Description of Dataset:

The data set should be helpful to explore much more about HIV status across the world.The dataset contains data on:

1. No. of people living with HIV AIDS
2. No. of deaths due to HIV AIDS
3. No. of cases among adults (19-45)
4. Prevention of mother-to-child transmission estimates
5. ART (Anti Retro-viral Therapy) coverage among people living with HIV estimates
6. ART (Anti Retro-viral Therapy) coverage among children estimates

Dashboard:



Insights, Observations, and Questions from the Dashboard

Overall Observations

- **Global HIV/AIDS Burden:** The dashboard provides a comprehensive overview of the global HIV/AIDS epidemic, focusing on key metrics like the number of people living with HIV, new infections, deaths, and antiretroviral therapy (ART) coverage.
- **Regional Disparities:** The data clearly highlights significant regional disparities in the prevalence and impact of HIV/AIDS. Africa, in particular, bears a disproportionate burden of the disease.
- **Progress in ART:** The dashboard shows increasing ART coverage across many regions, indicating progress in treatment and care. However, there are still regions with low coverage, underscoring the need for continued efforts to expand access to these essential services.

Specific Insights and Questions

1. Regional Variations in HIV/AIDS Prevalence:

- **Africa's Dominance:** Why does Africa continue to have the highest number of people living with HIV and new infections? Are there specific factors contributing to this high prevalence, such as socioeconomic conditions, cultural practices, or healthcare systems?
- **Lower Prevalence in Europe and the Americas:** What factors have contributed to the relatively lower prevalence of HIV/AIDS in these regions? Are there effective prevention strategies or public health

interventions in place that could be adapted to other regions?

2. Age-Specific Trends:

- **Youth at Risk:** The dashboard shows that a significant portion of new infections occur among individuals aged 15-49. What are the underlying reasons for this demographic vulnerability? How can we target prevention efforts more effectively to this age group?

3. Antiretroviral Therapy Coverage:

- **Regional Disparities:** While there has been progress in ART coverage, some regions still have significantly lower rates. What are the barriers to accessing ART in these areas? How can we improve access and ensure that those living with HIV receive the treatment they need?
- **Impact of ART on Mortality:** Is there a correlation between higher ART coverage and lower mortality rates among people living with HIV? Are there specific factors that influence the effectiveness of ART in different regions?

4. Data Gaps and Limitations:

- **Data Quality:** Are there any concerns about the quality and completeness of the data used in this dashboard? Are there any biases or limitations that might affect the accuracy of the findings?
- **Emerging Variants:** How does the dashboard account for the emergence of new HIV variants and their potential impact on treatment effectiveness? Are there any data on the prevalence of these variants in different regions?

Conclusion:

The global HIV/AIDS epidemic continues to be a significant public health challenge, particularly in certain regions. Despite progress in antiretroviral therapy and prevention efforts, disparities in prevalence and access to treatment persist.

Africa remains the region most heavily affected by HIV/AIDS, with a disproportionate number of people living with the virus and new infections.

Youth are at particular risk, with a significant portion of new infections occurring among individuals aged 15-49.

Antiretroviral therapy (ART) coverage has increased in many regions, leading to improved outcomes for people living with HIV. However, there are still significant gaps in access to treatment, particularly in lower-income countries.

Addressing the global HIV/AIDS epidemic requires a multifaceted approach that includes prevention strategies, expanded access to treatment, and addressing underlying social and economic factors.