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HW-2

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Introduction:

As someone who uses Netflix daily, I've always been fascinated by the data behind how people across the world interact with the platform. The "Netflix User-Base App" provides an opportunity to explore this, offering insights into regional engagement, revenue distribution, and device preferences like phones, tablets, or smart TVs. It's a useful tool for movie lovers, data enthusiasts, and anyone curious about how streaming trends vary globally.

The motivation for this project comes from my interest in understanding how Netflix users differ based on factors like location, subscription type, and demographics (age, gender). For example, I wanted to explore how subscription choices vary between countries and how preferences for devices shift with age. This project allowed me to combine data analysis with an interactive, visual approach, making it easier to see Netflix's impact on a global scale.

Through this project, I aimed not only to explore Netflix's business metrics—such as revenue by region—but also to uncover user habits and trends. By analyzing these insights, the dashboard helps users, researchers, and enthusiasts understand how streaming platforms are evolving and adapting to different audiences. The data could also guide Netflix in optimizing its services for different regions, ensuring that it meets the unique needs of its global audience.

Interesting Findings:

While building this app, I uncovered some surprising patterns in the Netflix data. Initially I thought that smart TVs would be the most popular device for streaming, but it turns out that device preferences are fairly balanced. Phones and tablets are just as popular, showing how mobile devices play a significant role in global streaming behavior.

Another unexpected discovery was the variation in subscription types across countries. In some regions, Premium subscriptions are more common and exist, while in other areas, Basic and Standard plans dominate. This suggests that local economic conditions influence the choice of subscription tiers. Additionally, I ran into an issue during the data cleaning process, where incorrect latitude and longitude values placed some countries in the wrong regions on the map. Once corrected, the visualizations became much clearer, allowing me to identify regional patterns more accurately.

Process:

The Netflix User-base App was built using Shiny and designed to be simple and intuitive. The interface includes filters for subscription type, age group, and gender, which allows users to explore different patterns in the data. I aimed for a user-friendly experience, placing controls in an accessible sidebar, so users can easily toggle between filters to see different visualizations.

Data preparation involved a few key steps, such as loading and cleaning the dataset. I ensured that the dates were formatted consistently and that geographical data (like latitude and longitude) was accurate for mapping. Grouping the data by age categories made it easier to analyze trends and compare different user demographics. These preparation steps were essential to creating clear and meaningful visualizations.

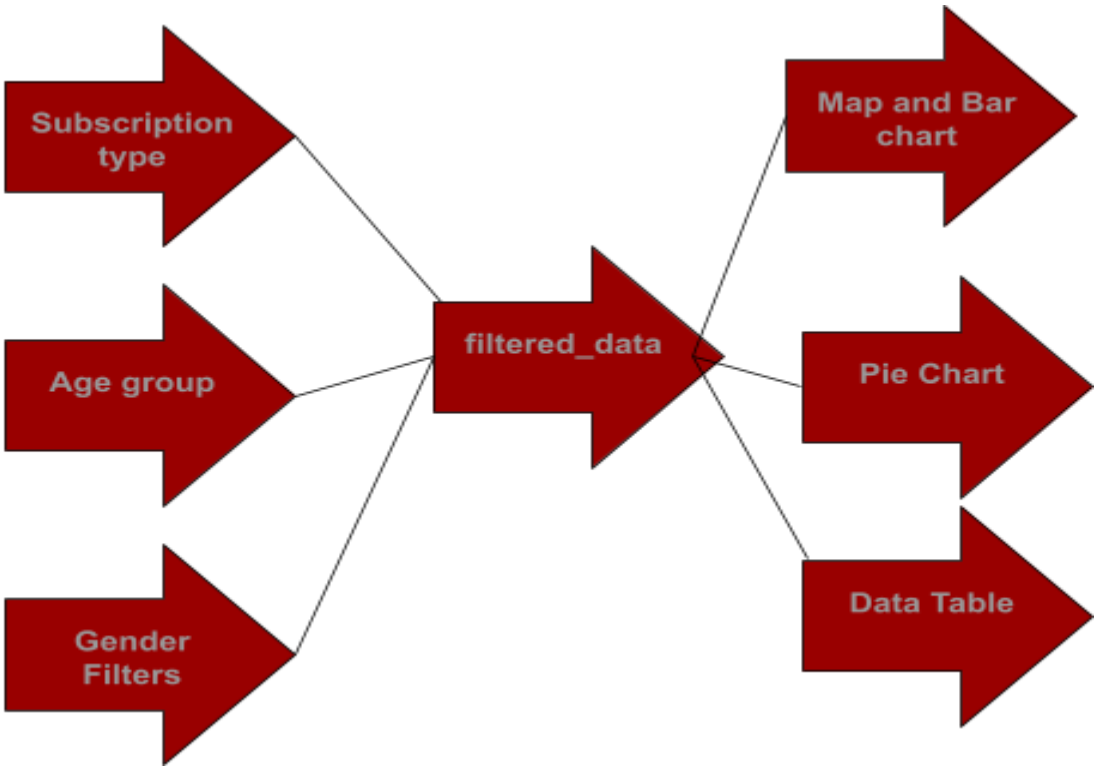
When designing the layout, I focused on keeping things simple and visually appealing. Maps, bar charts, and pie charts were used to display data in a way that’s easy to understand, even for users

unfamiliar with data analysis. Labels and annotations were added to guide users through the app, ensuring that anyone could navigate and interpret the data without needing prior knowledge.

Reactive Graph:

The Netflix User Base Dashboard relies on reactive expressions to update visualizations based on user inputs in real time.

- **Inputs**: Filters for subscription type, age group, and gender.
- **Reactive Expression**: The filtered_data expression dynamically updates the dashboard based on the selected filters.
- **Outputs**:
    - **Map and Bar Chart**: Display revenue by country and subscription type.
    - **Pie Chart**: Shows device preferences for different age groups and genders.
    - **Data Table**: Displays filtered subscription details, such as duration and subscription type.



Further Development:

This app could be expanded to offer deeper insights for a wider audience. For instance, incorporating data on regional income or subscription costs could help explain why certain countries favor specific subscription plans. This would provide a clearer picture of how economic factors influence streaming behavior.

Another potential improvement could involve adding personalized recommendations, based on user preferences and device usage. This would help Netflix users and industry analysts better understand viewing habits and how they differ globally. By expanding the tool's scope, it could provide even more valuable insights into Netflix's reach and help users better understand streaming behavior across different regions.

Data source:

https://www.kaggle.com/datasets/arnavsmayan/netflix-userbase-dataset