Task 1: Data Visualization Dashboard

Context: Assume that you're working for a financial services company that has gathered data related to customer transactions and investment portfolios. The objective is to design a comprehensive dashboard that allows users to explore transaction trends, portfolio performance, and customer demographics.

Dataset: You have a CSV file named "financial_data.csv" with the following columns:

- **TransactionID**: Unique identifier for each transaction.

- **CustomerID**: Unique identifier for each customer.

- **Date**: Date of the transaction.

- **Amount**: Transaction amount.

- **TransactionType**: Type of transaction (e.g., deposit, withdrawal, investment).

- **PortfolioID**: Unique identifier for each investment portfolio.

- **PortfolioName**: Name of the investment portfolio.

- **PortfolioValue**: Current value of the investment portfolio.

- **CustomerAge**: Age of the customer.

- **CustomerIncome**: Annual income of the customer.

Task Requirements:

1. **Dashboard Layout:**

   - Design a dashboard layout with key visualizations, including transaction trends, portfolio performance, and customer demographics.

   - Consider the arrangement of visualizations for a seamless user experience.

2. **Transaction Trends Visualization:**

   - Create a chart of your choice illustrating transaction trends over time (using the **Date** column).

   - Implement interactive features like zooming and panning to allow users to focus on specific time periods.

3. **Portfolio Performance Visualization:**

   - Design a chart of your choice or line chart showing the performance of different investment portfolios over time.

   - Include interactive elements for users to select specific portfolios or time ranges.

4. **Customer Demographics Visualization:**

   - Develop a chart of your choice to represent the distribution of customers across different age groups.

   - Implement interactive features for users to explore the income distribution by age group.

5. **Transaction Type Breakdown:**

   - Create a chart/visualization of your choice to show the distribution of transaction types.

   - Ensure the chart is visually appealing and provides insights into transaction patterns.

6. **Interactivity and Filters:**

   - Implement filters for users to interactively select specific time periods, portfolios, or demographic groups.

   - Ensure that filters update all relevant visualizations on the dashboard.

7. **Overall Aesthetics:**

- Pay attention to the overall aesthetics of the dashboard, including color schemes, font choices, and spacing.

- Aim for a visually cohesive design that enhances user engagement.

8. **Annotations and Insights:**

- Consider adding annotations to highlight key events or trends in the data.

- Include a section for textual insights summarizing key findings from the visualizations.

Deliverables:

1. Interactive dashboard prototype (using tools like Figma, Adobe XD, HTML/CSS/JS, or any visualization that you are familiar with for a functional prototype).

2. Short documentation explaining design choices, such as color schemes, chart types, and interactivity features.

3. Presentation to walk through the dashboard, explaining the insights it provides and how users can interact with it.