Product Feature Optimization and User Experience Analysis

Scenario:

The company X.inc has recently launched a new feature called "Smart Recommendation" in their B2C tech product. This feature provides personalized suggestions to users based on their preferences and usage patterns. We collected quantitative and qualitative data from users during a one-month trial period.

Objective:

Your task is to analyze the data and provide insights that will help us optimize the "Smart Recommendation" feature and enhance the overall user experience.

## Instructions:

**Data Engineering:** You will receive a dataset (attached as 'raw\_user\_data.csv') with raw user data, which includes demographic information, feature usage patterns, and user satisfaction ratings. Use SQL or Python to clean, preprocess, and analyze the data to understand user behavior.

**Product Analytics:** Identify key performance indicators (KPIs) to measure the success of the "Smart Recommendation" feature. Analyze the data to determine whether the feature meets the desired outcomes and provide recommendations for improvement.

**Qualitative UX Research:** Review the user feedback provided in the dataset and categorize it into common themes. Identify any trends or patterns in the feedback that may indicate user pain points or areas for improvement. Propose potential solutions or adjustments to address these issues.

## Deliverables:

Please submit the following:

1. A Python or SQL code that demonstrates your data engineering and analysis process.
2. A report (in PDF or Word format) that includes:
   1. A brief description of your data preprocessing and cleaning methodology.
   2. An analysis of the key findings from the data, including visualizations and  
      metrics.
   3. A summary of the identified KPIs and an evaluation of the feature's performance.
   4. A qualitative analysis of the user feedback, including identified themes, trends, and pain points.
   5. Recommendations for optimizing the "Smart Recommendation" feature and  
      enhancing the overall user experience.