Technical Task: Analyze Enhanced Product Usage Data and Provide Insights

Objective:- Analyze a dataset containing enhanced product usage data to identify trends, patterns, and insights that can inform product decisions.

Enhanced Dataset Description:- You are provided with a MYSQL database access containing enhanced product usage data for a mobile application. The dataset consists of the following columns:

- User ID: Unique identifier for each user.
- Date: Date of the interaction.
- Action: Type of user interaction (e.g., login, feature usage, transaction).
- Feature: Specific feature or action performed by the user.
- Engagement Duration: Duration of the interaction (in minutes).
- Device: Type of device used by the user (e.g., iOS, Android).
- Country: Country of the user.
- Subscription Status: Subscription status of the user (e.g., subscribed, trial, expired).
- Revenue: Revenue generated from the user's interactions (in USD).

Tasks:

1. Get the data from database (enhanced_product_usage_data) and load it into a pandas DataFrame.
2. Perform initial exploratory data analysis (EDA) to understand the structure and characteristics of the dataset.
3. Clean the data by handling missing values, outliers, and any inconsistencies in the dataset.
4. Perform necessary data transformations and conversions in Python to prepare the data for visualization.
5. Export the processed data to a CSV file.
6. Connect to Power BI and import the CSV file to create visualizations (e.g., charts, graphs, dashboards).
7. Design a dashboard in Power BI to visualize key metrics and insights derived from the data.
8. Analyze the dashboard to identify trends, patterns, and actionable insights for the product team.
9. Provide a written executive summary outlining key observations, insights, and recommendations based on the analysis of the Power BI dashboard.

Deliverables:

1. Jupyter Notebook (.ipynb file) containing code and comments explaining the data retrieval, processing, and export process.
2. CSV file containing the processed data.
3. Power BI file (.pbix) containing the dashboard with visualizations and insights.
4. Written executive summary outlining key observations, insights, and recommendations for the product team.