Assignment: Exploratory Data Analysis (EDA)

Objective:

Perform **Exploratory Data Analysis (EDA)** on a dataset containing customer purchasing behaviour to identify correlations, trends, and outliers.

Instructions:

1. Dataset

Use the dataset named **customer_purchases.csv** with the following columns:

- **Customer_ID** (Integer)
- **Age** (Integer)
- **Gender** (Categorical: Male, Female)
- **Annual_Income** (Float, in USD)
- **Spending_Score** (Scale of 1-100, based on purchasing habits)
- **Purchase_Frequency** (Integer, number of purchases per month)

2. Tasks:

- **Load** the dataset using Pandas.
- **Perform EDA** using Pandas Profiling or custom scripts.
- **Generate the following visualizations:**
    - **Histogram of Annual Income**
    - **Scatter Plot:** Purchase Frequency vs. Spending Score
    - **Correlation Heatmap** of numerical features (Income, Spending Score, Purchase Frequency)
- **Analyze trends and patterns:**
    - Identify correlations between variables (e.g., Does a higher income lead to more purchases?).
    - Detect outliers (e.g., Are there customers with extremely high or low spending scores?).

3. Submission:

- Submit the **Python script (.ipynb)** file **PDF**.