Task 2: Lookalike Model

Step-by-Step Plan:

1. **Load the Data:**
   Load the Customers.csv, Products.csv, and Transactions.csv files into dataframes.

2. **Prepare the Data:**
   Merge the Customers.csv and Transactions.csv datasets to create a comprehensive dataset with customer profiles and transaction history.
   Merge the resulting dataset with Products.csv to include product information.
3. **Feature Engineering:**
   Create features that represent customer profiles and transaction history.
   Normalize the features if necessary.
4. **Build the Lookalike Model:**
   Use a similarity measure (e.g., cosine similarity, Euclidean distance) to find similar customers based on their profiles and transaction history.
   Recommend 3 similar customers for each of the first 20 customers (CustomerID: C0001 - C0020).

Explanation of the Code -
Load the Data:

- The Customers.csv, Products.csv, and Transactions.csv files are loaded into dataframes.

Merge Datasets:

- The transactions dataframe is merged with the customers dataframe on CustomerID.
- The resulting dataframe is then merged with the products dataframe on ProductID.

Feature Engineering:

- A pivot table is created to represent customer-product interactions, with CustomerID as the index, ProductID as the columns, and Quantity as the values.
- The features are normalized using StandardScaler.

Calculate Cosine Similarity:

- Cosine similarity is calculated between customers based on their profiles and transaction history.

Get Top 3 Similar Customers:

- For each of the first 20 customers, the top 3 similar customers are identified based on the similarity scores.
- The results are saved to a CSV file (FirstName_LastName_Lookalike.csv).