Title: customer segmentation with data science

Phase 1

Problem Definition: The problem is to implement data science techniques to segment customers based on their behavior, preferences, and demographic attributes. The goal is to enable businesses to personalize marketing strategies and enhance customer satisfaction. This project involves data collection, data preprocessing, feature engineering, clustering algorithms, visualization, and interpretation of results.

Design Thinking:

Data Collection: Collect customer data, including attributes like purchase history, demographic information, and interaction behavior.

Data Preprocessing: Clean and preprocess the data, handle missing values, and convert categorical features into numerical representations.

Feature Engineering: Create additional features that capture customer behavior and preferences, such as total spending, frequency of purchases, etc.

Clustering Algorithms: Apply clustering algorithms like K-Means, DBSCAN, or hierarchical clustering to segment customers.

Visualization: Visualize the customer segments using techniques like scatter plots, bar charts, and heatmaps.

Interpretation: Analyze and interpret the characteristics of each customer segment to derive actionable insights for marketing strategies.