

Second Semester Project (30 marks)

ShopSmart Inc. is an e-commerce platform that sells a variety of products online. The company aims to optimize its website and enhance customer satisfaction by understanding customer behavior and preferences. To achieve this goal, ShopSmart Inc. plans to analyze the data collected from its website to gain insights into customer interactions, purchasing patterns, and product preferences.

Project Objective: The objective of this project is to utilize data from ShopSmart Inc.'s website to understand customer behavior and preferences. By analyzing the data, the company aims to:

1. Segment customers based on their preferences, geographic location, and purchasing behavior.
2. Enhance website usability and user experience based on insights gained from customer interactions.
3. Optimize product offerings and marketing strategies to improve customer satisfaction and retention.

Data Sources:

The data for this project will be sourced from ShopSmart Inc.'s website and will include various attributes such as customer IDs, device IDs, transaction details, product information, and timestamps of customer interactions.

Methodology:

The project will involve data wrangling to preprocess the dataset, followed by exploratory data analysis (EDA) to uncover patterns and trends in customer behavior. Visualization techniques will be used to present the findings effectively.

Expected Outcome:

By understanding customer behavior and preferences, ShopSmart Inc. aims to optimize its website, product offerings, and marketing strategies to increase customer satisfaction, retention, and ultimately, revenue.

You are provided with 5 datasets from different tables, your first task is to merge the datasets, clean and wrangle the dataset, engineer new features from event data. Then identify the following:

a. Visit Frequency:

How often does this customer visit the website, based on the provided data?

Can you identify any patterns or trends in the customer's visit frequency?

b. Location Analysis:

What is the customer's location based on the provided data?

How might the customer's location influence their purchasing behavior?

c. Overall Purchase Behavior:

Based on the data provided, what insights can you draw about this customer's overall behavior on the website?

How might these insights inform marketing strategies or personalized recommendations for this customer?