Project Initialization and Planning Phase

Date	07-07-2024
Team ID	739747
Project Title	Customer Shopping Segmentation by using Machine learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

We propose implementing a Machine learning based Customer Segmentation system to boost efficiency and accuracy. This will analysis personalized marketing, optimize inventory management and improve customer satisfaction by analyzing features.

Project Overview	
Objective	Utilize machine learning to achieve precise customer segmentation for personalized marketing and optimized inventory, enhancing customer satisfaction and driving business growth.
Scope	The project Implement a machine learning system to analyze customer data for accurate segmentation, enabling personalized marketing and efficient inventory management across all shopping malls.
Problem Statement	
Description	Current customer segmentation lacks accuracy and efficiency, hindering personalized marketing and optimal inventory management in shopping malls. Implementing machine learning can address these challenges and improve overall business outcomes.
Impact	Implementing machine learning for customer segmentation in shopping malls enhances precision in targeting and inventory management, leading to improved customer satisfaction .

Proposed Solution	
Approach	Develop a machine learning model using customer data to segment shoppers. Utilize clustering algorithms like k-means for segmentation and personalize marketing strategies based on identified segments.
Key Features	• Gathering comprehensive customer data including demographics, purchase history, and behavior. • Choosing appropriate clustering algorithms for segmenting customers effectively. • Tailoring marketing strategies and inventory management based on identified customer segments to enhance engagement and satisfaction.

Resourcs Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Jupyter Notebook, pycharm

Data		
Data	Source, size, format	Kaggle dataset, 614, csv