Project Initialization and Planning Phase

Date	18 june 2024
Team ID	739642
Project Title	Customer shopping segmentation using machine learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project report aims to develop a data-driven segmentation strategy using customer data to categorize based on demographics, behaviors, and preferences. Implement tailored marketing campaigns and optimize resource allocation to enhance customer engagement and satisfaction, thereby maximizing revenue potential and reducing churn rates.

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Project Overview	
Objective	Customer segmentation requires collecting and analyzing data such as purchase history, demographics, geographic location, psychographics, and behavioral pattern.
Scope	Businesses can effectively implement customer shopping segmentation to enhance their marketing strategies, improve customer satisfaction, and drive overall business growth.
Problem Statement	
Description	Customer Shopping Segmentation is the challenge of effectively understanding and catering to diverse customer needs and preferences within a broad customer base.
Impact	Solving these issues will result in improved market effectivenees, enhanced customer satisfaction, optimized resource allocation
Proposed Solution	
Approach	Customer Shopping Segmentation using machine learning include data integration from diverse sources, feature engineering for relevant customer attributes, and the selection of appropriate algorithms (like clustering or classification) to identify distinct customer segments. These segments are validated and utilized to personalize marketing strategies, optimize resource allocation, and improve overall customer satisfaction effectively.
Key Features	**Integration**: Utilizing diverse customer data sources for comprehensive insights. **Algorithm Selection**: Choosing suitable clustering or classification

	algorithms for segment identification. **Personalization**: Implementing insights to tailor marketing strategies, optimize resource allocation, and enhance customer satisfaction.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	2 x NVIDIA V100 GPUs
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD

Data

Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	Numpy, pandas, seaborn, datetime, pylab ,matplotlib.
Development Environment	IDE, version control	Jupyter Notebook, syder,visual code
Data		
Data	Source, size, format	Kaggle dataset, 10,000 images