Project Initialization and Planning Phase

Date	15 March 2024
Team ID	LTVIP2024TMID25001
Project Title	Customer Segmentation Using Machine Learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	To develop a customer segmentation tool that enables businesses to classify their customers into distinct groups based on demographics, behavior, and purchasing habits, leading to more targeted marketing strategies.
Scope	This project will focus on building the customer segmentation module, which includes data input, analysis, and visualization tools. It will integrate with existing CRM systems and cover segmentation based on location, age, gender, buying behavior, and other relevant factors.
Problem Statement	
Description	Many companies lack an effective method to segment their customers, resulting in generalized marketing efforts that don't account for the diverse needs and preferences of different customer groups.
Impact	By solving this, businesses can target customers more effectively, leading to improved engagement, personalized experiences, and increased sales. It will also reduce marketing costs by eliminating inefficient, broad-spectrum campaigns.

Proposed Solution	
Approach	The project will use machine learning algorithms to analyze customer data and automatically segment customers into distinct groups. The solution will offer a user interface for customization and exploration of these segments. Data visualization tools will allow users to monitor segment performance over time.
Key Features	Data-driven customer grouping based on demographics, behavior, and preferences. - Customizable segmentation filters and criteria. - Integration with existing CRM and marketing tools. - Visual analytics dashboard for tracking segment performance and trends. |

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
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Kaggle dataset, 10,000 images