**Project Initialization and Planning Phase**

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| Date | July 5, 2024 |
| Team ID | 739838 |
| Project Title | Customer segmentation using Machine Learning |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

Customer Segmentation using Machine Learning is a strategic approach to dividing a customer base into distinct groups based on shared characteristics, behaviors, and preferences. By leveraging machine learning algorithms and customer data, this project aims to uncover meaningful insights and create targeted marketing strategies, personalized offerings, and improved customer experiences.

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| **Project Overview** | |
| Objective | Customer segmentation is a group of business customer base called customer segment such that each customer segment has customers who share the same market characteristics |
| Scope | This project enables the learner to understand the business use case of how and why to segment the customers. |
| **Problem Statement** | |
| Description | Our company faces challenges in effectively targeting and retaining customers due to a lack of personalized marketing strategies. |
| Impact | Implement a robust customer segmentation strategy to enhance marketing effectiveness, improve customer satisfaction, and drive business growth. |
| **Proposed Solution** | |
| Approach | By utilizing the advanced analytics tools to analyze and segment customer data effectively. |
| Key Features | -businesses can improve customer satisfaction and loyalty.  -Segmentation provides insights into customer preferences and demands, aiding in the development of new products or customization of existing offerings.  -enables businesses to differentiate themselves from competitors by offering unique value |

**Resource Requirements**

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| **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, seaborn, matplotlib |
| Development Environment | IDE, version control | Jupyter Notebook, VS code |
| **Data** | | |
| Data | Source, size, format | Kaggle dataset, 614, csv |