**Project Initialization and Planning Phase**

| Date | 12 July 2024 |
| --- | --- |
| Team ID | 739742 |
| Project Title | Estimating the stock keeping units 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 | Develop accurate predictions of future demand for each SKU based on historical sales data ,seasonality, trends and external factors. |
| Scope | The scope involves collaboration across different terms within the organization, including supply chain management,finance,marketing,IT to ensure alignment with business objectives and effective implementation of the solution. |
| **393Problem Statement** | |
| Description | The problem is to address inefficient inventory management often leads to increased costs.it outlines the core challenges,objectives,deliverable,stakeholders and timeline for an ML project aimed at estimating SKUs to improve inventory management efficiency and operational effectiveness. |
| Impact | Solving this problem will lead to improved forecasting accuracy , optimized inventory management , cost savings, and overall enhanced customer satisfaction, competitive advantage. |
| **Proposed Solution** | |
| Approach | The methodology will help organizations to effectively leverage machine learning techniques to estimate SKUs,optimize inventory management strategies and enhance operational efficiency while meeting customer demand effectively . |
| Key Features | **Real time predictions**: The model will predict future stock levels based on incoming data as it becomes available .   **Seasonal adjustments**: The model will account for seasonal variations and peak times to maintain accuracy throughout the year.   **Customizable parameters**: Businesses can adjust model parameters to fit specific needs and constraints. |

**Resource Requirements**

| **Resource Type** | **Description** | **Specification/Allocation** |
| --- | --- | --- |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | e.g., 2 x NVIDIA V100 GPUs |
| Memory | RAM specifications | e.g., 8 GB |
| Storage | Disk space for data, models, and logs | e.g., 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | e.g., Flask |
| Libraries | Additional libraries | e.g., tensorflow |
| Development Environment | IDE, version control | e.g., Jupyter Notebook, Git |
| **Data** | | |
| Data | Source, size, format | e.g., Kaggle dataset, 10,000 images |