**Project Initialization and Planning Phase**

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| Date | 15 July 2024 |
| Team ID | 740067 |
| Project Title | Crop Prediction 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.

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| **Project Overview** | |
| Objective | Machine learning can also help farmers identify the most profitable crops to plant based on market demand and environmental factors. By analyzing historical market data and weather patterns, machine learning models can predict the demand for different crops and suggest optimal planting times and locations. This can help farmers maximize their profits while minimizing the risk of crop failure. In addition to predicting crop growth and output, machine learning can also analyze the quality of the harvested crops. |
| Scope | The scope of this project is to take the input of various factors such as soil, weather condition, ph and historical data to predict the crop. |
| **Problem Statement** | |
| Description | Crop prediction is also known as agricultural forecasting. It can help farmers to predict the crop in a particular season when to crop and when to harvest. |
| Impact | It can be impact on the several factors such as soil, weather conditions, changing in ph values etc. |
| **Proposed Solution** | |
| Approach | Crop Prediction involves variety of approaches like weather data, expert knowledge, sensor technology, Data analytics. |
| Key Features | N, P, K, Temperature, rainfall, humidity, ph. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware Requirements:** | | |
| Computing Resources | CPU/GPU specifications,  number of cores | T4 GPU |
| Memory | RAM specifications | 16 GB |
| Storage | Disk space for data, models,  and logs | 512 SSD |
| **Software Requirements:** | | |
| Frameworks | Python frameworks | Flask |
| Libraries | Additional libraries | Scikit-learn, pandas, NumPy,  Seaborn, matplotlib |
| Development Environment | IDE, version control | Google colab, VS code |
| **Data** | | |
| Data | Source, size, format | Kaggle, dataset, csv |