**Project Initialization and Planning Phase**

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| Date | 03 July 2024 |
| Team ID | 740149 |
| Project Title | Predicting CO2 emissions by countries by 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 | To develop a machine learning model that accurately predicts the co2 emissions of different countries |
| Scope | The project will encompass data collection, preprocessing, model training, evaluation, and deployment. It will focus on historical CO2 emissions data from various countries, |
| **Problem Statement** | |
| Description | Global CO2 emissions contribute significantly to climate change, and there is a need for accurate prediction models to help policymakers and researchers understand future trends and plan mitigation strategies. The challenge is to create a model that can predict CO2 emissions with high accuracy using historical data and other relevant features. |
| Impact | predicting CO2 emissions can help in formulating effective climate policies, setting emission reduction targets, and planning sustainable development strategies. |
| **Proposed Solution** | |
| Approach | The project will employ machine learning techniques to develop the prediction model. The steps include:  Data Collection, Data Preprocessing, Feature Selection , Model Training , Model Evaluation, Model Deployment |
| Key Features | Implementation of advanced machine learning algorithms like Random Forest to improve performance.  User-friendly interface for policymakers to input data and receive predictions. |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | e.g., 4GB x NVIDIA GeForce GTX |
| Memory | RAM specifications | e.g., 16 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., scikit-learn, pandas, numpy, matplotlib, seaborn, random |
| Development Environment | IDE, version control | e.g., Google colab, spyder |
| **Data** | | |
| Data | Source, size, format | e.g., Kaggle dataset, 10,000 images |