Predicting CO2 Emission by Countries Using ML

Milestone 1: Project Initialization and Planning Phase

The “project initialization and planning phase ” marks the project’s outset,defining goals,scope, and stakeholders. This phase establishes parameters for predicting co2 emissions using machine lerning techniques, focusing on gathering and clening data from international databases and national statitics. Key activities include

Activity 1: Define Problem Statement

Problem Statement: The project aims to predict CO2 emissions of countries using machine learning techniques. Key factors such as GDP, population, and energy consumption will be analyzed to understand emission dynamics and inform policy decisions.

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Predicting CO2 Emission Problem Statement Report: CLICK HERE

Activity 2: Project Proposal (Proposed Solution)

Proposed Solution: "CO2 Emissions Prediction" seeks to develop accurate predictive models. It involves data collection from international databases, feature selection, model training, and deployment for informing climate change mitigation strategies.

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Predicting CO2 Emission Project Proposal Report: CLICK HERE

Activity 3: Initial Project Planning

Initial Project Planning: This phase outlines objectives, scope, and resource allocation. It includes understanding data sources, formulating analysis goals, and planning data preprocessing workflows.

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Predicting CO2 Emission Project Planning Report: CLICK HERE

Milestone 2: Data Collection and Preprocessing Phase

The "Data Collection and Preprocessing Phase" involves gathering and preparing data to ensure its quality and suitability for predictive modeling of CO2 emissions.

Activity 1: Data Collection Plan, Raw Data Sources Identified, Data Quality Report

The project sources data from international databases and national statistics, focusing on CO2 emissions, GDP, population, and energy consumption. Data quality is ensured through verification and addressing missing values, adhering to ethical guidelines for reliable predictive modeling..

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Predicting CO2 Emission Data Collection Report: CLICK HERE

Activity 2: Data Quality Report

Verification and cleaning processes are conducted on the sourced data to ensure completeness and reliability for CO2 emissions prediction. Ethical considerations guide data handling practices throughout the project.

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Predicting CO2 Emission Data Quality Report: CLICK HERE

Activity 3: Data Exploration and Preprocessing

Data analysis includes exploring relationships and patterns in CO2 emissions data. Preprocessing steps such as handling missing values and scaling features are implemented to enhance data quality and prepare for modeling.

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Predicting CO2 Emission Data Exploration and Preprocessing Report: CLICK HERE

Milestone 3: Model Development Phase

The Model Development Phase entails crafting a predictive model for co2 prediction. The "Model Development Phase" focuses on building and evaluating predictive models for CO2 emissions. It encompasses strategic feature selection, evaluating and selecting models (Random Forest, Decision Tree, KNN, SVM), initiating training with code, and rigorously validating and assessing model performance for informed decision-making in the lending process.

Activity 1: Feature Selection Report

Identifying and selecting key features (e.g., GDP, population density) that impact CO2 emissions prediction model performance..

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Predicting CO2 Emission Feature Selection Report: CLICK HERE

Activity 2: Model Selection Report

Evaluating and selecting regression models (e.g., linear regression, random forest) based on performance metrics and suitability for CO2 emissions prediction.. It considers each model's strengths in handling complex relationships, interpretability, adaptability, and overall predictive performance, ensuring an informed choice aligned with project objectives.

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Predicting CO2 Emission Model Selection Report: CLICK HERE

Activity 3: Initial Model Training Code, Model Validation and Evaluation Report

Implementing selected models on prepared data to initiate training and evaluate model performance using accuracy metrics. The subsequent Model Validation and Evaluation Report rigorously assesses model performance, employing metrics like accuracy and precision to ensure reliability and effectiveness in predicting churn outcomes.

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Predicting CO2 Emission Model Development Phase Template: CLICK HERE

Milestone 4: Project Files Submission and Documentation

For project file submission in Github, Kindly click the link and refer to the flow. CLICK HERE

For the documentation, Kindly refer to the link**.** CLICK HERE

Milestone 5: Project Demonstration

In the upcoming module called Project Demonstration, individuals will be required to record a video by sharing their screens. They will need to explain their project and demonstrate its execution during the presentation.