Project Initialization and Planning Phase

Date	11 July 2024
Team ID	SWTID1720086522
Project Title	Forecasting Economic Prosperity: Leveraging Machine Learning For GDP Per Capita Prediction
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

Our project aims to develop a machine learning model predicting GDP per capita changes from economic policy reforms. By analyzing historical data and employing advanced algorithms, we empower stakeholders to optimize reform implementation for sustainable economic growth. This initiative enhances strategic planning with data-driven insights, fostering proactive socioeconomic development and stability in dynamic economic landscapes.

Project Overview	
Objective	Develop a machine learning model to predict GDP per capita changes resulting from economic policy reforms, leveraging historical data and advanced algorithms to empower stakeholders in optimizing reform implementation for sustainable economic growth
Scope	This project aims to develop a machine learning model predicting GDP per capita changes based on economic data. It encompasses data collection, preprocessing, model training, evaluation, and the creation of a web application for deployment. Excluded are in-depth policy analysis beyond economic correlations and non-economic factors not directly influencing GDP per capita forecasts.
Problem Statement	
Description	The challenge lies in accurately forecasting the specific impact of economic policy reforms on GDP per capita, hindering informed decision-making by policymakers and stakeholders. This project aims to develop a machine learning model that predicts these impacts using historical data, enabling proactive planning and optimization of reform strategies for sustainable economic growth.
Impact	Successfully predicting the impact of economic policy reforms on GDP per capita would empower policymakers to make informed

	decisions, optimize reform strategies, and foster sustainable economic growth. It would enhance economic stability, improve resource allocation efficiency, and facilitate proactive planning for socioeconomic development, thereby benefiting both national economies and global economic stability
Proposed Solution	
Approach	This project will employ machine learning algorithms such as regression and possibly ensemble methods to model the relationship between economic policy variables and GDP per capita. Feature engineering, data preprocessing techniques like normalization, and evaluation metrics such as RMSE and R^2 will be utilized to refine and validate the models.
Key Features	This project integrates machine learning with economic data to predict GDP per capita changes, offering precise insights into policy impacts and facilitating proactive policy planning for sustainable economic growth.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	Ryzen 7, Nvidia RTX 3060
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, matplotlib, seaborn
Development Environment	IDE, version control	Jupyter Notebook, Anaconda
Data		
Data	Source, size, format	