Project Initialization and Planning Phase

Date	05 June 2024
Team ID	739975
Project Title	To Predict Consumer Price Index
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 a predictive model to accurately forecast the Consumer Price Index (CPI) for food items, pulses, vegetables, fruits, milk products, meat, fish, snacks, sweets, beverages, housing, and other related categories.
Scope	Collection and preprocessing of relevant economic data related to the specified categories, selection and implementation of predictive modeling techniques, evaluation of model performance, and deployment of a user-friendly interface for predictions. Focus on CPI for a specific region or country.
Problem Statement	
Description	The Consumer Price Index (CPI) for food items and other categories measures the average change in prices over time for a basket of goods including pulses, vegetables, fruits, milk products, meat, fish, snacks, sweets, beverages, and housing. Accurate prediction of CPI in these categories is challenging due to the complex interplay of various economic factors and market dynamics.
Impact	Accurate CPI predictions for these categories enable better economic forecasting, aid in policy formulation, assist businesses in strategic planning, and help consumers manage their expenses
Proposed Solution	
Approach	Use machine learning techniques to predict CPI for the specified categories. Collect data from reliable sources, preprocess data to handle

	missing values and outliers, perform feature engineering, and test various predictive models (e.g., linear regression, decision trees, neural networks). Evaluate models using metrics such as MAE and RMSE.
Key Features	Integration of multiple economic indicators specific to food and housing categories, use of advanced machine learning algorithms, ensemble learning, hyperparameter tuning, and a user-friendly interface for model interaction and result visualization.

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., scikit-learn, pandas, numpy
Development Environment	IDE, version control	e.g., Jupyter Notebook, Git
Data		
Data	Source, size, format	e.g., Kaggle dataset, 10,000 images