Project Planning Document

1. Time Series Forecasting and API Development

Objective:

Develop a Time Series Forecasting system with an API for easy integration.

Steps:

Dataset Selection:

* Identify and acquire a suitable time series dataset relevant to the forecasting goal.

Model Selection for Hyperparameter Tuning (HPT):

* Research and choose potential models for time series forecasting, considering ARIMA and scikit-learn-based models.
* Define hyperparameter tuning (HPT) strategies for selected models.

Constraints Analysis and Preprocessing:

* Identify constraints and challenges associated with the selected dataset.
* Develop preprocessing steps to handle constraints, missing values, outliers, etc., in the time series data.

Model Implementation:

* Implement the chosen time series forecasting model(s) with the optimized hyperparameters.

Flask API Development:

* Create a Flask API to expose the forecasting functionality.
* Define API endpoints for input data and retrieve forecast results.

Timeline:

Day 1: Going through Flask document

Day 2: Preprocessing, Building, and Training time series model

Day 3: Learning Postman and creating Flask API’s for time series model

2. Chatbot for Time Series Forecasting Results

Objective:

Extend the scope of our project by developing an NLP-powered chatbot that seamlessly communicates time series forecasting results, enhancing user interaction, and providing an intuitive layer to the previously established Time Series Forecasting and API Development task, thereby aligning personal learning goals with the strategic objectives of the company.

Steps:

NLP Model Selection:

* Choose a suitable NLP model for the chatbot.

Chatbot Development:

* Develop the chatbot to understand and respond to user queries related to time series forecasting results.

Integration with Forecasting System:

* Integrate the chatbot with the Time Series Forecasting API developed in the first project.

User Interface Design:

* Create a user-friendly interface for the chatbot, ensuring ease of interaction.

Timeline:

Day 1: Understanding the technological requirements for the above project

**3. A tool that can visualise code in the form of mind map**