**AIML Project Review 1**

Title and Project outcomes:-

Title:-

Stock Price Prediction

Outcomes:- A stock price prediction project can yield several key outcomes, depending on its objectives and the methods used. Here are some common outcomes: 1) Stock Price Forcasting Model, 2) Feature Importance Analysis, 3) Visualizations & Dashboard, 4) Recommendations for future improvements  
  
**Project Feasibility Analysis**

1. **Technical Feasibility:**
   * Data Availability: Reliable financial data for stock prices is readily available from sources like Yahoo Finance, Google Finance, and Alpha Vantage. This ensures the availability of historical stock data, including open, close, high, low prices, and volumes.
   * Tools & Technologies: The project utilizes readily accessible technologies such as Python libraries (like yfinance for data collection, XGBoost or LightGBM for GBM modeling, and tkinter for the user interface). These are robust, well-documented, and widely used tools in stock market prediction projects.
   * Simplicity of SMA: The Simple Moving Average (SMA) is computationally light and straightforward to implement, making the development of SMA-based models technically feasible even for beginner-level developers.
2. **Financial Feasibility:**
   * **Cost of Data:** Financial data from platforms like Yahoo Finance is available for free. For more comprehensive data, affordable API services from providers like Alpha Vantage can be considered.
   * **Development Costs:** The project leverages open-source software and tools, meaning development costs will be minimal, mostly involving the time spent by developers and researchers.
3. **Operational Feasibility:**
   * **User Interface:** The project includes a GUI built with tkinter, offering an easy-to-use interface for investors and traders. This adds operational value, as users can engage with real-time data visualizations without requiring deep technical knowledge.
   * **Market Fit:** The stock market is a large, established sector with consistent demand for reliable, user-friendly predictive tools. This ensures operational sustainability and long-term use by traders, analysts, and financial enthusiasts.

**Oriented with Societal Needs**

* **Improved Financial Literacy:** The project addresses the need for tools that enhance the financial literacy of non-professional investors. By offering a straightforward approach through SMA-based models, users can better understand stock market trends and make informed decisions.
* **Accessible Trading Strategies:** The use of simple indicators like SMA democratizes access to trading strategies that were once limited to institutional investors. Individual traders can leverage these tools for personal investment, filling the gap between novice traders and complex, institution-level predictive systems.
* **Supporting Financial Planning:** The project aids investors in making sound decisions, potentially supporting better financial planning and long-term wealth management. This is crucial in an era where financial markets are accessible to a wider audience due to platforms like Robinhood and eToro.

**Novelty of the Project Title**

* **Novelty in Simplicity:** The title, "Stock Price Prediction Using Simple Moving Averages," emphasizes the simplicity of the approach. While SMA is a well-known indicator, the project stands out by showcasing its effectiveness in prediction when combined with machine learning techniques (e.g., GBM). This brings a fresh perspective to stock prediction research, which often focuses on more complex models.
* **Practical Focus:** The novelty lies in combining the traditional SMA method with modern predictive techniques like Gradient Boosting Machines. This hybrid approach is not often explored in academic research, making it a novel contribution to the field of stock price prediction.
* **User-Friendly Approach:** The title’s focus on SMA suggests a more accessible, user-friendly prediction model for the broader trading community. Most stock prediction projects focus on advanced machine learning models, which are complex for the average user. This project offers a solution with practical and easy-to-understand indicators