Feasibility Report: Algo Trading Project

Project: Algo Trading

A. Technical Feasibility

This project is **technically feasible** because the necessary technology and expertise are readily available and mature. The team members have experience in Python, which is the primary language for this project, along with other essential tools like Jupyter Notebook, Google Colab, and relevant libraries such as TensorFlow and Scikit-learn.

- **Available Technology**: The core technologies for the project—data collection via APIs, data preprocessing, and model application using Python libraries like Pandas, Matplotlib, Scikit-learn, and TensorFlow/Keras—are all well-established.
- **Technical Expertise**: The team has prior experience with Python and the proposed environments, which makes the project a suitable learning experience for beginners. The project's outlined steps, from data collection to model comparison, are standard practices in machine learning, ensuring a clear path for implementation.

B. Managerial Feasibility

The project's managerial feasibility is strong, given the clear roles and the team's shared experience. The group members are all beginners with shared experience in Python, which streamlines the division of labor and ensures a collaborative learning environment. The project's phased approach, from data collection to final comparison, provides a structured framework that is easy to manage and track. The project is well-defined and achievable for a small team of beginners.

C. Economic Feasibility

The project is economically feasible as it doesn't require any significant capital investment. The primary tools are open-source and free to use.

- **Cost-Benefit Analysis**: The costs associated with the project are minimal, mainly consisting of access to a computer and an internet connection. The benefits are significant, as it provides a practical application of machine learning concepts, strengthens the team's portfolio, and offers valuable experience for future careers in data science, fintech, or AI.

D. Financial Feasibility

This project has

excellent financial feasibility as no start-up capital is required. All necessary software and datasets are freely available. The project can be developed and tested on standard personal computers, eliminating the need for high-end systems.

E. Cultural Feasibility

The project is culturally feasible as it aligns with the academic and professional culture of learning and applying technology. It promotes problem-solving, teamwork, and the application of cutting-edge technologies, which are all highly valued in the academic and tech communities.

F. Social Feasibility

The project has a positive social influence. It provides a practical application of machine learning and deep learning to a real-world financial problem, which can contribute to a better understanding of market dynamics. While the project is a learning exercise, the skills gained can be applied to other socially beneficial projects, such as predicting weather patterns or combating misinformation.

G. Safety Feasibility

The project is inherently safe, as it is a software-based academic exercise. There are no environmental or physical safety concerns. The project uses publicly available historical data and does not involve any live trading or real-money transactions, ensuring a safe and controlled learning environment.

H. Political Feasibility

The project is politically neutral and does not involve any political considerations. It is a purely technical and educational endeavor, making it "politically correct" for academic study.

Algo Trading Project - Weekly Gantt Chart

Phase / Task	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10	Wk11	Wk12	Wk13	Wk14	Wk15	Wk16
Requirement Analysis & Planning	■■■	■■■														
Data Collection		■■■	■■■													
Data Preprocessing & Cleaning			■■■	■■■												
Exploratory Data Analysis (EDA)				■■■	■■■											
Feature Engineering					■■■	■■■										
Apply ML Models (LR, DT, RF)						■■■	■■■	■■■								
Apply DL Model (LSTM)							■■■	■■■	■■■	■■■						
Model Evaluation (RMSE, MAE)								■■■	■■■	■■■						
Comparison (ML vs DL)									■■■	■■■						
Visualization & Dashboard										■■■	■■■					
Documentation												■■■	■■■	■■■		
Final Testing & Review													■■■	■■■		
Submission & Presentation															■■■	■■■