Project Market IQ Progress Report

Summary of Documents 📚

Name: Ajmal Amir

Project Topic: Stock market Prediction (Market IQ)

GitHub Repo: https://github.com/ajmal-amir/MarketIQ

Self-Assessment: The required readings have been thoroughly reviewed and summarized to support the key points of this presentation

Introduction to Stock Market Prediction 📊

- **Objective:** Forecasting stock market trends using various machine learning and time-series models.

- **Challenges:** Stock prices are volatile and influenced by multiple factors, making accurate prediction difficult.

- **Key Techniques:** Machine learning, data mining, and time-series analysis.

Machine Learning for Stock Market Prediction 🤖

- **Document:** *Stock Market Prediction Using Machine Learning*

- **Authors:** Abdulhamit Subasi, Faria Amir, et al.

- **Key Points:**
  - Comparison of different machine learning classifiers for predicting stock prices.
  - Models tested on NASDAQ, NYSE, Nikkei, and FTSE.
  - Leaked vs. normal datasets were analyzed for accuracy.

Hybrid Approaches to Forecasting 📈

- **Document:** *An Efficient Hybrid Approach for Forecasting Real-Time Stock Market Indices*

- **Key Techniques:**
  - **Hybrid models combining traditional statistical methods (ARIMA) and AI models (LSTM, FB Prophet).**
  - **Findings:** Each model has strengths:
    - **ARIMA** is good for stationary data.
    - **LSTM** captures nonlinear trends.
    - **FB Prophet** handles seasonality well.
  - **Recommendation:** Hybrid approaches yield more reliable predictions.

Comparative Analysis of Forecasting Models ⚖️

- **Document:** *Time Series Forecasting of Stock Market Using ARIMA, LSTM, and FB Prophet***Findings:ARIMA:** Works best when data is linear and stable.

- **LSTM:** Excels in recognizing complex patterns and long-term dependencies.

- **FB Prophet:** Handles trends, seasonality, and external events like holidays.

- **Conclusion:** No single model is best; ensemble learning is recommended.

MarketIQ Project Progress Report

- 1 **Project Overview**

- **MarketIQ** is an AI-driven stock prediction and analysis tool.

- It integrates **machine learning models** to forecast stock trends and provides real-time financial insights.
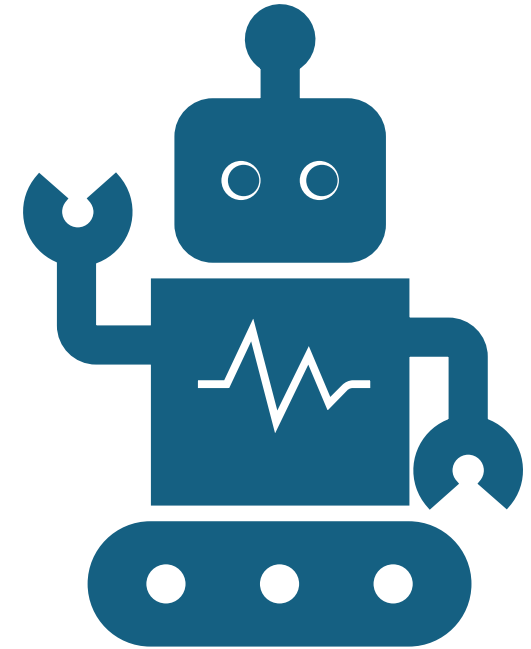
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2 Recent Updates 🆕

✅ **Enhanced UI Navigation:** Added structured buttons for seamless access to:

- Home

- Stock Prediction App

- Stock Analyzing AI ✅ **Live Stock Trends:** Added a **real-time stock trend visualization** alongside a data table. ✅ **Improved Forecasting Models:** Implemented **ARIMA, LSTM, and FB Prophet** for better accuracy. ✅ **Expanded API Support:** Ensured reliable **stock data retrieval** from Financial Modeling Prep API.

3 Next Steps 🚀

- ◆ **Optimize Model Performance:** Fine-tune AI models for improved accuracy.
  ◆ **User Experience Enhancements:** Improve layout, interactivity, and responsiveness.
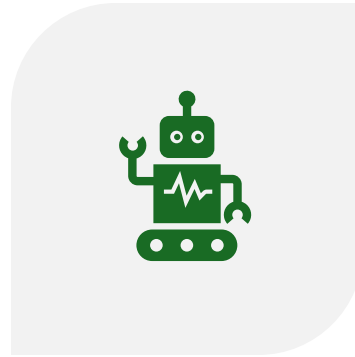 ◆ **Deployment & Scalability:** Prepare for cloud deployment to handle more users efficiently.

Conclusion

THE **MARKETIQ PROJECT** HAS MADE SIGNIFICANT PROGRESS IN **USER INTERFACE DESIGN, MACHINE LEARNING MODEL INTEGRATION, AND REAL-TIME MARKET INSIGHTS.** NEXT, THE FOCUS WILL BE ON REFINING PREDICTIVE ACCURACY AND ENHANCING USER EXPERIENCE.

🚀 **STAY AHEAD WITH MARKETIQ – YOUR AI-POWERED STOCK INVESTMENT TOOL!** 🚀