Stock Market Prediction Project – InvestWave

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Abstract*: InvestWave is a stock market prediction application designed to help users fetch real-time stock data, analyze historical trends, and predict future stock prices using machine learning techniques. Developed in Python with an intuitive Tkinter-based graphical user interface (GUI), the application integrates financial data from Yahoo Finance and applies a Linear Regression model to forecast stock price movements.*

The system includes a secure login and registration mechanism using SQLite, ensuring that only authenticated users can access stock insights. Users can input a stock ticker symbol, select a specific timeframe, and view historical price trends along with predicted values through graphical representations. Additional features include company-specific details, total stock value calculation, and customization options for historical data visualization. By leveraging predictive analytics, InvestWave provides a powerful yet user-friendly platform for traders, investors, students, and researchers interested in stock market trends. While the Linear Regression model offers a straightforward approach to stock forecasting, future enhancements will focus on integrating advanced machine learning models such as LSTM (Long Short-Term Memory Networks) and Sentiment Analysis, as well as cloudbased data storage for improved accuracy, scalability, and real-time analysis. With these advancements, InvestWave aims to become a comprehensive financial analytics tool that bridges the gap between historical stock data and intelligent market predictions..

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