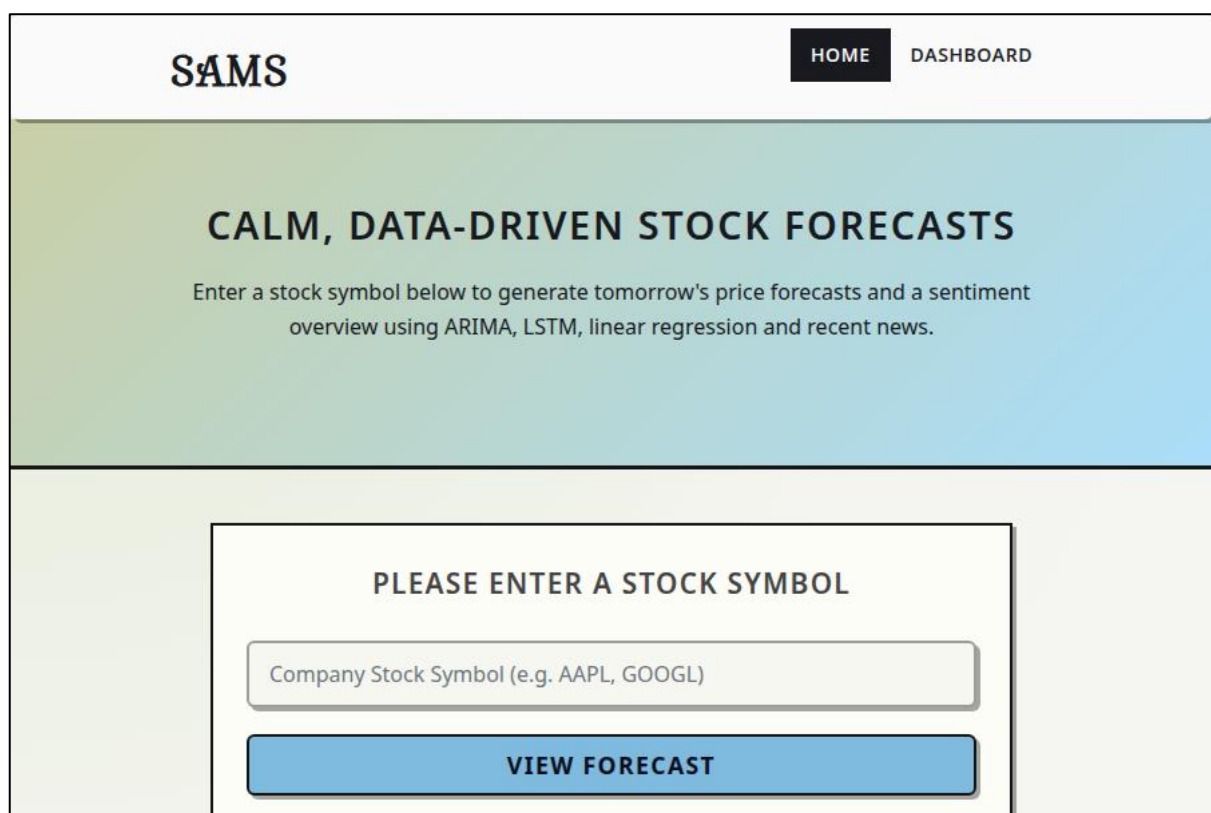


CHAPTER 5: RESULTS AND DISCUSSIONS

5.1 Evaluation Metrics

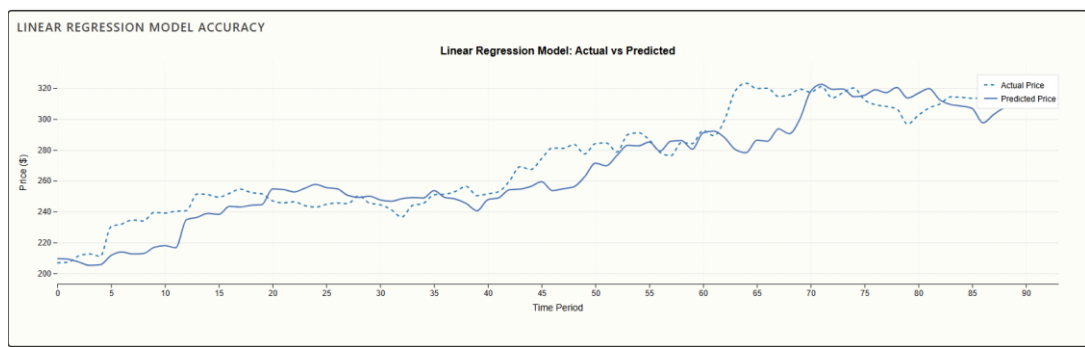
RMSE (Root Mean Squared Error) is computed for the active forecasting model (Linear Regression) and displayed on the results page.

5.2 Output Screens

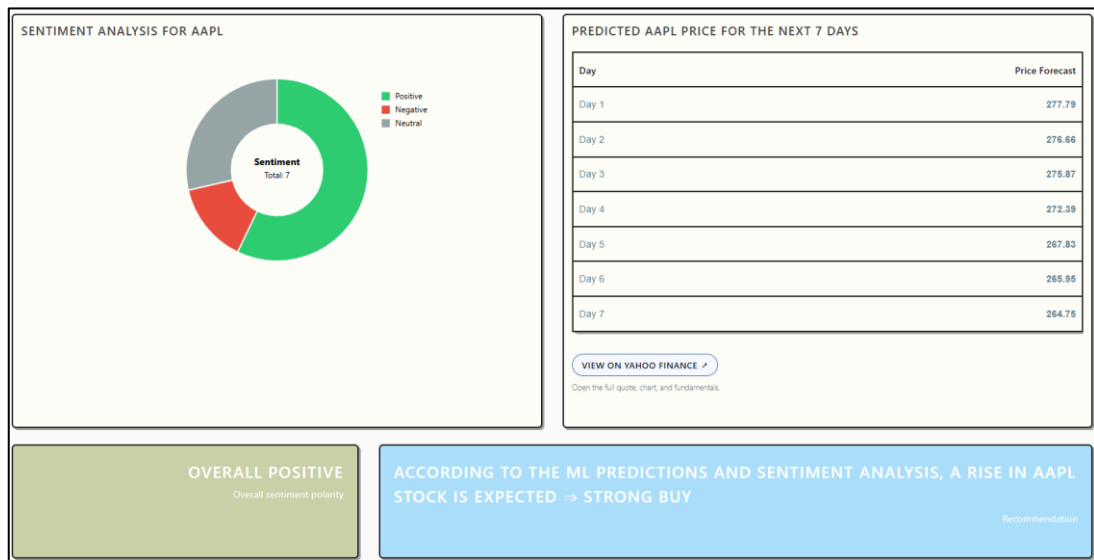


The screenshot shows the 'SAMS' Prediction Studio interface. At the top, there is a navigation bar with 'HOME' and 'DASHBOARD' links. The main header area features the title 'CALM, DATA-DRIVEN STOCK FORECASTS' and a descriptive text: 'Enter a stock symbol below to generate tomorrow's price forecasts and a sentiment overview using ARIMA, LSTM, linear regression and recent news.' Below this, a central form prompts the user to 'PLEASE ENTER A STOCK SYMBOL'. It includes a text input field with placeholder text 'Company Stock Symbol (e.g. AAPL, GOOGL)' and a blue 'VIEW FORECAST' button.

Home / Prediction Studio page



LR model test graph



7-day forecast table and Sentiment Chart

9656736.64
WALLET BALANCE

607301.07
CURRENT PORTFOLIO VALUE

ADD FUNDS (SIMULATION)

Amount

RECORD DIVIDEND

Symbol Amount per share

HOLDINGS

Symbol	Quantity	Current Price	Actions
AAPL	834	260.46 +1.09 (+0.42%)	Qty <input type="text"/> <input type="button" value="BUY"/> Qty <input type="text"/> <input type="button" value="SELL"/> <input type="button" value="VIEW PREDICTION"/>
TSLA	471	436.86 -8.15 (-1.83%)	Qty <input type="text"/> <input type="button" value="BUY"/> Qty <input type="text"/> <input type="button" value="SELL"/> <input type="button" value="VIEW PREDICTION"/>
NVDA	1009	182.67 -2.19 (-1.18%)	Qty <input type="text"/> <input type="button" value="BUY"/> Qty <input type="text"/> <input type="button" value="SELL"/> <input type="button" value="VIEW PREDICTION"/>

NEW TRADE

Symbol Quantity

RECENT TRANSACTIONS (BILLING)

Stocks trading and dividends management

ADMIN MONITORING & CONTROL

LOGOUT

2
TOTAL USERS

4
BROKERS

47
TRANSACTIONS

6
COMPANIES

2354.14
TOTAL COMMISSION

2425
TOTAL VOLUME (SHARES)

REGISTER BROKER

Broker name

Email

Commission %

ADD BROKER

BROKERS

Name	Email	Commission %	Active
BrokerC	brokerc@example.com	0.75	Yes
BrokerD	brokerd@example.com	0.30	Yes
aditya	xyz@email.com	0.90	Yes
nebroker	email@email.com	0.88	Yes

COMPANY PROFILES

Symbol	Name	Exchange	Sector	Active
AAPL	AAPL	-	-	Yes

Admin dashboard and Broker management with Company management

5.3 Discussion

- The system provides a unified view combining technical forecasting and sentiment context, addressing the integration gap identified in the literature [1], [5].
- The Linear Regression model delivers fast response times suitable for web applications while maintaining interpretable predictions [2], [3].
- Feature scaling and proper train-test splitting ensure robust model performance as recommended by recent studies [2], [4].
- The 7-day forecast horizon provides actionable short-term predictions that align with practical trading strategies.
- The sentiment engine is designed with multiple fallback sources to remain operational even when primary data sources are unavailable.
- The combination of quantitative forecasting and qualitative sentiment analysis provides a more comprehensive decision-support framework than either approach alone.