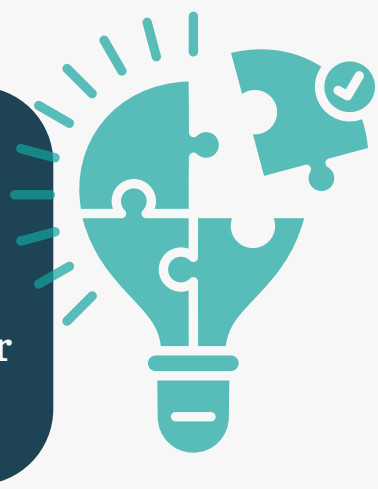
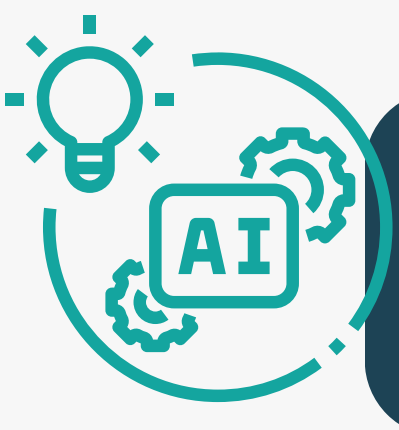
PREDICTIVE MODELLING FOR STOCK TRADING

Leveraging advanced analytics to forecast stock trends and improve trading strategies.

PROBLEM



- Limited research on predictive models tailored to the volatile Indian stock market.
- Challenges in integrating diverse data sources like historical prices and sentiment analysis for reliable forecasts.

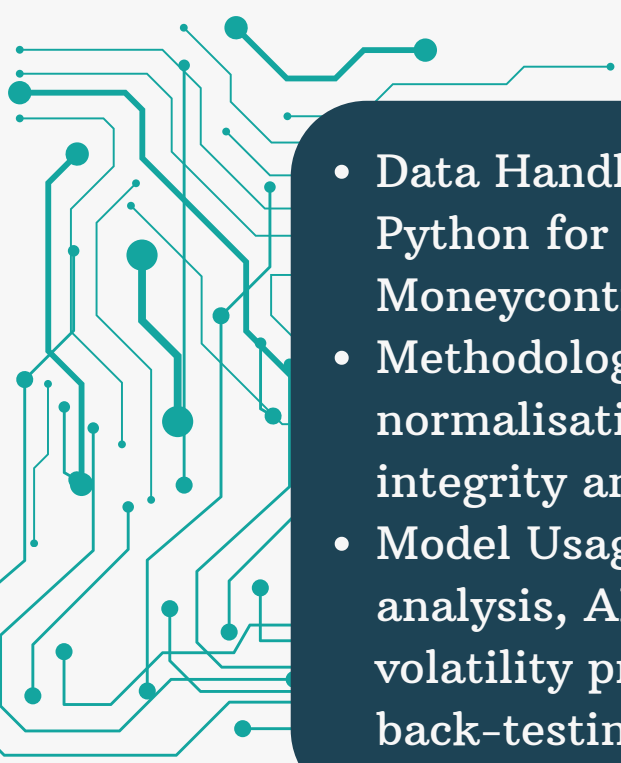


SOLUTION

- Implement a machine learning model that analyses historical market data and financial news sentiment to predict stock price trends for informed trading decisions.

AIMS/OBJECTIVITY

- Predictive Modelling: Develop a model to forecast stock trends, leveraging ML and sentiment analysis, focusing on NIFTY 50 and Sensex.
- Sentiment Analysis Integration: Utilise NLP to analyse financial news, enhancing investment strategies by predicting stock price impacts.
- Risk Management: Integrate a risk assessment framework employing LSTM, ARIMA, and GARCH models, considering market volatility for calculated investment decisions.



TECHNOLOGY

- Data Handling: Angel One API for price related data, Python for web scraping news articles from Moneycontrol for qualitative insights.
- Methodological Precision: Outlier detection, data normalisation, and filling gaps to ensure data integrity and model accuracy.
- Model Usage: Selection of LSTM for nonlinear trend analysis, ARIMA for linear trends, and GARCH for volatility predictions; hyperparameter tuning and back-testing to refine predictive performance.

FUTURE DEVELOPMENT

- Monetising by integrating predictive models into a digital trading app for extra features, enabling real-time stock market insights to enhance user trading strategies and decisions.
- Continuous improvement of model accuracy through iterative feedback and adaptation to market changes.