1. 1) Time Series Analysis - ARIMA (AutoRegressive Integrated Moving Average):
2. Theory: ARIMA models are based on the idea that past price and volume data can be used to predict future stock prices. They account for trends, seasonality, and autocorrelation.
3. Implementation: You can use libraries like Python's statsmodels to fit ARIMA models to historical stock price data. Parameters (p, d, q) need to be selected based on data characteristics.
4. 2) Machine Learning - Support Vector Machines (SVM):
5. Theory: SVM is a supervised learning algorithm that can be used for regression to predict stock prices. It finds a hyperplane that best separates data points.
6. Implementation: You can implement SVM regression using libraries like scikit-learn in Python. Features such as historical prices, volumes, and technical indicators can be used for prediction.
7. 3) Deep Learning - Long Short-Term Memory (LSTM) Networks:
8. Theory: LSTM is a type of recurrent neural network (RNN) that can capture long-term dependencies in time series data. It's suitable for modeling sequential data like stock prices.
9. Implementation: You can use deep learning frameworks like TensorFlow or PyTorch to build LSTM models. Historical stock price sequences are fed into the network for training and prediction.
10. 4) Sentiment Analysis - Natural Language Processing (NLP):
11. Theory: Sentiment analysis models process news articles, social media, and other textual data to gauge public sentiment. Positive or negative sentiment can impact stock prices.
12. Implementation: Implementing NLP for sentiment analysis involves text preprocessing, sentiment lexicon or machine learning-based analysis, and integrating sentiment scores with historical data for analysis.
13. 5) Technical Analysis - Moving Averages and RSI (Relative Strength Index):
14. Theory: Technical analysis uses historical price and volume data to identify patterns and indicators that can predict future price movements. Moving averages and RSI are commonly used.
15. Implementation: You can use technical analysis libraries or write custom code to calculate moving averages and RSI. Buy/sell signals can be generated based on these indicators.

Currently we are using 3rd model and for future work we try to implement the 4th oe also.