

Stock Analysis Using Python

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ABSTRACT -This paper describes stock forecasts using technical analysis. technical analysis one of the well-known and widely followed analysis by traders worldwide.

Whatever happens in the stock market today has happened before and will happen again, "says Jesse Livermore, "because the stock market is made up of all the traders who make the stock market". Technical analysis tries to leverage this fact to its advantage, it helps traders to make better buy-sell decision based on repetitive price patterns, this paper outlines some of the price structures that occur frequently, using which traders can make sound decisions. The aim of this assignment is not to predict the future price movements, rather following the prevalent trend and try to capture some portion of it.

The National Stock Exchange of India (NSE) is the largest derivatives market in the world. which is one of the key playgrounds for intraday traders. owing to the limitless trade opportunities it provides.

Flask, a python-based web framework, was used to create the suggested system as a web app.

System relies on previous day trading data to generate trading signals.

Keywords- Stock, Trader, NSE, Intraday traders, Flask

I. INTRODUCTION

We are all aware of how the stock market works. A stock is a small portion of a company's ownership. The stock price of a firm reflects its net worth and provides some insight into its operations performance.

These stocks are traded on exchanges, and their prices are determined by market forces. Because of the market's demand and supply, they are constantly changing. The stock price rises when a stock is in high demand and low supply, which means that more people want to purchase it and fewer people want to sell it; conversely, the stock price falls when it is in low demand and high

supply, which means that more people want to sell it but fewer people want to buy it.

The sudden increase in stock demand could be due to a variety of factors, including positive news about the company or an announcement from the company.

When the demand for the stock declines over time, the price of the stock gradually falls as the investor loses interest in it. The fluctuation of stock price is an iterative and repeated process.

Stock volatility causes investors to be wary of investing in a company. So, in order to understand the risk associated with it, a proper stock analysis must be performed prior to purchasing it. We would try to explore only the tip of the iceberg for stock market analysis in this project, as technical analysis of stocks is a vast field.

II. LITERATURE SURVEY

Traders and investors use stock analysis to make purchasing and selling choices. Traders and investors try to obtain an edge in the market by making informed decisions by analysing and analysing current and historical data. Different forms of analysis exist.

1. Technical analysis of stock market
2. Fundamental analysis of stock market
3. Stock market analysis with a modern perspective.

- Stock Market Price Prediction and Analysis

Publication Number: ISSN 2278-0181

This project is created using Django (Backend) and React (Frontend) and also they used deep learning(keras,sklearn,Tensorflow),Rest API,SQLite,SMTP in Backend and for Frontend they are used JavaScript, jQuery,css,html. They built a dashboard for their app that shows live prices, percentage changes, and value changes for the four most popular indices, including the NIFTY100 (National Stock Exchange fifty), NIFTY50, and SENSEX, which are updated every

second when the market opens. News section in the dashboard of home page shows news related to business and stock markets which are updated every 15 seconds. They manually entered 5500 NSE and BSE stock information into a google sheet and saved it to Google Drive. The Google cloud connection allows users to access and utilise that database in their Backend. They devised a search algorithm that considers both of these factors and delivers the four most accurate predictions. The dashboard's watchlist feature allows users to add their favourite stocks to the watchlist and track how they evolve over time. They created a prediction algorithm to forecast how the stock would close in the subsequent trading session.

Apart from that they missed discussion forum, tutorials to learn about the stock market. When beginners come to this website they can't engage them to create interest in the stock market.

- Stock Market Analysis & Prediction Using R & Python

Publication Number: ISSN 2278-6856

This research paper analyses the stock market and predicts the prices of stocks using python and r programming. For prediction they used SVM, RNN and EML developed by computer scientists. In this paper they mainly focus on fundamental analysis, Technical analysis, Sentimental analysis, Forecasting and prediction. In this project their main focus is on prediction and forecasting using recurrent neural network (RNN) and Long Short-Term Memory (LSTM) approach. They used Pre-processing and Feature Extraction & Selection, Design of Training Algorithm, Testing and Prediction these methodology for making the project successful.

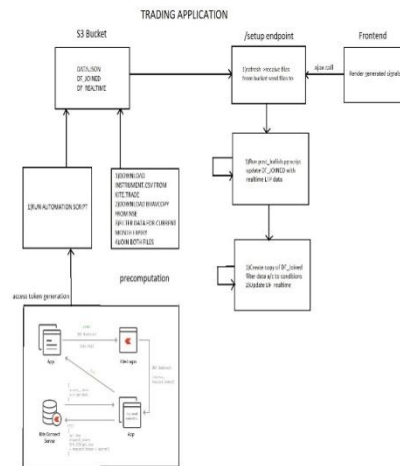
In this project they only added analysis and prediction features apart from that they need to add discussion forums, news sections and deep technical analysis of stock to get more traffic of stock market interested people who spend more time on their website. Apart from this project our project provides you technical analysis, prediction of stock prices and with this they also provide you tutorial, news and discussion forum which make our project interesting to stock investors and traders and beginner people.

III. METHODOLOGY

This section describes the methodology, system architecture, features, and algorithms that we used to develop a web application that can be used for real-time stock analysis as well as live trading.

PROPOSED SYSTEM DESIGN

Backend System:

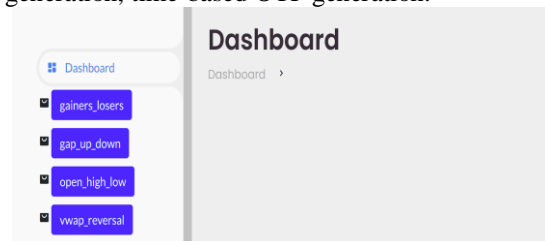


For handling backend work of the web application, we have opted for Flask, which is a python based micro web framework.

The primary reason for choosing Flask over any other python-based web framework was its simplicity, It also does not require any particular tools or libraries to begin with. Hence it is a lightweight web framework which makes development experience smooth.

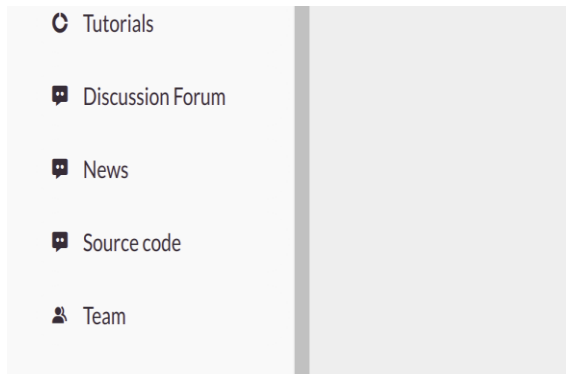
It enabled us to concentrate more on developing functionalities that we wanted rather than overwhelming ourselves with complex technical know how's.

We have used web scraping and browser automation extensively to automate some mundane and repetitive workflows such as access token generation, time-based OTP generation.



The dashboard of our application displays the trading strategies that we have implemented such as gainers losers, gap_up_down, open_high_low, vwap_reversal etc.

On selecting any of these options, real-time scan happens at the backend on stocks in derivatives segment and generated signals for buy and sell are then shown on the dashboard.



Apart from above mentioned features, we have also provided some extra features such as tutorials, discussion forum, news, source code etc.

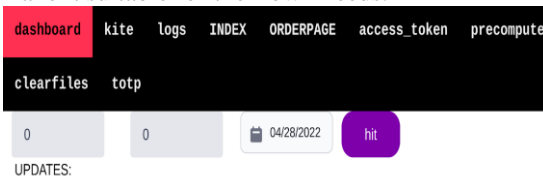
On the tutorials page we have enlisted some of the trading related articles which can be beneficial for beginners to get acquainted with markets.

Discussion forum is a page where we have given options for users to sign in and make posts about trading. which can help them to interact with other fellow traders. and learn from each other.

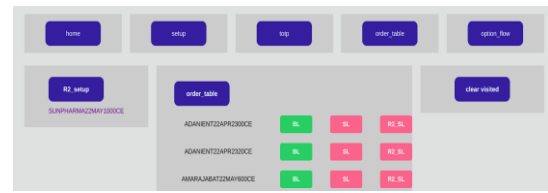
In the news section of the application, we have fetched news from <https://newsapi.org/s/india-business-news-api>, using which users can stay in touch with real-time news. helping them make better decisions during live markets.



We have also open sourced our code. so that users can check out the implementation and tweak it to make it suitable for their own needs.



On the navigation bar, we have provided several functionalities such as generating access tokens, precomputing market data, generating time based otp etc. we have also provided redirection links to brokers website, order page, dashboard for the ease of navigation.



We have provided a custom webpage, where users can implement their own trading strategies, they can see the signals generated as well as the order table corresponding to those signals. In this way we have reduced the friction between generating signals and placing orders by making them available on the same page. This ensures fast and seamless and perfect execution.

IV. RESULTS OBTAINED

fully fledged web application which can be used for trading as alternative to brokers web platform, minimal working scripts are created to automate basic functionalities such as follows:

1. Access token automation
- 2) Time based OTP automation
- 3) Dashboard to monitor signals of multiple trading strategies at one place
- 4) Deployed project to cloud so that user can access the application from anywhere anytime
- 5) Order placement through KiteConnectApi for custom made trading strategies.

V. CONCLUSION

The effective market study, hands on experience with some of the well-known technical strategies is achieved by stock analysis using python application.

Automated workflows, slick user interface help aid in increasing productivity, reducing the cognitive load that traders may experience during market activity is also achieved by use of this application.

VI. RECOMMENDATIONS

The scope of the project is restricted to understanding the basics of technical analysis and applying it to take a choice of investing or trading in stocks listed on the national stock exchange. Strategies implemented in this project are to be used intraday only as they are more viable in short term trading.

Project demonstrates use of technical analysis for generating signals for trading in the short term, users are advised to trade at their own risk.

During the limit period of study, the study may not be a detailed, complete and utilitarian one in all aspects.

Few financial tools are used for the analysis which are paid. And they need some prerequisite technical knowledge

The conclusion cannot be generalised as market variations are unpredictable.

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