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 [ijircce@gmail.com](mailto:ijircce@gmail.com)

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# Candlestick Pattern Analyser

Mrs. N. A. Jadhav<sup>1</sup>, Om Kolte<sup>2</sup>, Tejas Bhosale<sup>3</sup>, Pranav Warke<sup>4</sup>, Gaurav Sonavane<sup>5</sup>

Lecturer, Department of Computer Engineering, PCET's Pimpri Chinchwad Polytechnic, Pune, India<sup>1</sup>

Diploma Student, Department of Computer Engineering, PCET's Pimpri Chinchwad Polytechnic, Pune, India<sup>2,3,4,5</sup>

**ABSTRACT:** Candlestick Patterns are commonly used to analyse and predict the movement of where the stock will go in the short term. There are different types of candlestick patterns, each of them having their own meaning. Some patterns indicate the increasing price and some patterns indicate decreasing stock price. Also a few similar projects exist on the internet but all of them are paid and charge a hefty price. This project is completely free and tries to provide almost similar features to those which are present on the internet. Its main objective is to detect stocks with particular candlestick patterns in the candlestick charts of the stocks.

**KEYWORDS:** Data Mining, Candlestick Pattern Detection, Predictive Analysis, Sentiment Analysis, Stock Market, Python, Flask.

## I. INTRODUCTION

Within the past year, trading in stock market has attracted a lot of people, and has become one of the major way for people to earn money. The number of investors' accounts rose by a record of 10.4 million in 2020, as reported by the two main depositories of India. However, it is not easy to trade in the stock market and it is even more difficult to identify various patterns which occur on the candlestick charts due to which it becomes inefficient to trade in the stock market.

Many websites provide suggestions to buy or sell a stock for particular amount of money. But this is not recommended as it may lead to unwanted losses, which is why it is important to do your own analysis and then decide about which stock to buy and when. There are systems which provide similar features but for a hefty price, this system aims to provide almost similar features to users who are willing to learn and do their own analysis, it will help the users to identify certain candlestick patterns and take trade decisions accordingly.

The main purpose of candlestick pattern analyzer is to identify stocks with certain patterns and display them to the user. There are various features which can be implemented in this project which would help the user a lot and make this system more useful than it currently is. The same features are listed further in section VI.

## II. LITERATURE REVIEW

1. The project aims to solve various problems faced by users while trading in the stock market such as identifying the stocks and finding the candlestick pattern occurred in the candlestick chart of the particular stock.
2. Basically it is a web based application developed using Python and Flask framework which enables the user to find stocks by selecting any particular pattern from a list of various patterns.
3. Additionally it also provides sentiment analysis to determine the sentiment of the market.
4. This project provides almost similar features to the users which are provided by the paid software present on the internet.

III. DESIGN

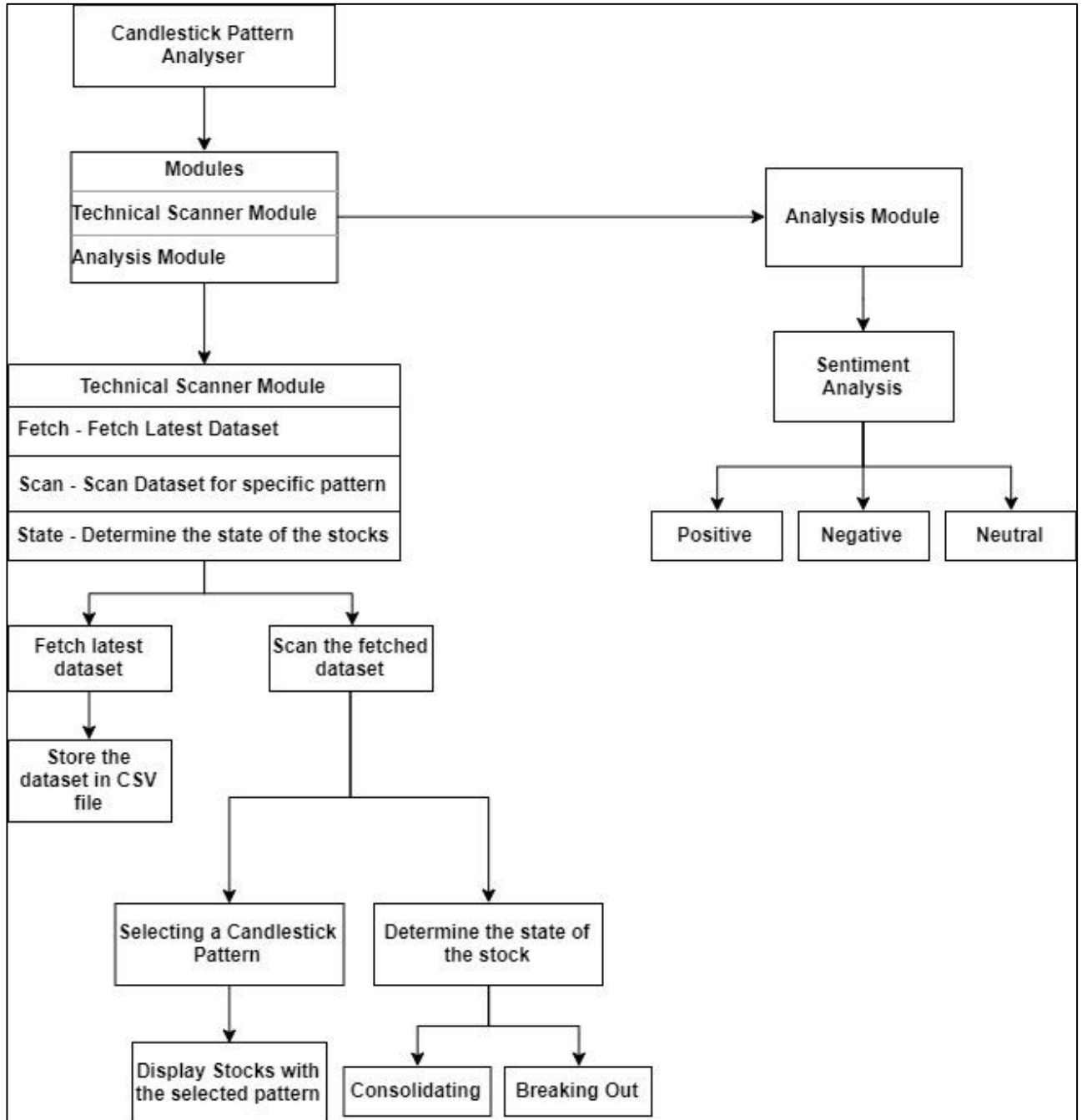


Fig. 1 – Architecture model for Candlestick Pattern Analyser

#### IV. WORKING

The project is divided into 2 modules, the first is the technical scanner module and the other is the analysis module. The technical scanner module of the project is completely built in Python which also uses various functions from the technical analysis library to analyze the dataset of the stocks and determine which pattern has occurred in the candlestick chart. This module can be considered as the core of the project as it does the work of identifying the candlestick pattern occurred on the chart. If it finds no pattern on the charts then the scanner simply ignores the stock and does not display it on the screen. This module also has a function to fetch the dataset of all the stocks included in the specified benchmark index (in this case we used India's NIFTY50). This function is responsible for updating the old dataset to the current latest dataset. The dataset contains the data of daily stock prices and is stored in a CSV file. In this case the below listed parameters combined is called as dataset and this dataset is used for performing the required analysis in this module.

The CSV file consists of the following parameters:

- Date – Date of working trading days
- Open – Opening price of the stock on the respective date
- High – Highest price of the stock on the respective date
- Low – Lowest price of the stock on the respective date
- Close – Closing price of the stock on the respective date
- Volume – No. of shares (volume) of the stock traded on the respective date

Then next is the analysis module which performs the sentiment analysis by predicting the sentiment behind the given input (it may be a few stocks or entire market) by taking data from multiple sources (like Reddit and Finviz), analyzing it based on the data received and displaying the output.

The sentiment can be either positive, negative or neutral based on the following factors:

- When the data indicates positive news, articles, and decisions it leads to positive sentiment.
- When the data indicates negative or hateful news, articles and decisions it leads to negative sentiment.
- And when the data does not indicate either positive or negative emotions then it leads to neutral sentiment.

#### Advantages of this project:

- a) Display stocks based on the candlestick pattern selected.
- b) Perform sentiment analysis on the given input.
- c) Helps the user to speed up their analysis skill
- d) Helps the user to plan their trades efficiently.

#### Disadvantages of this project:

- a) The user needs to have basic knowledge of what various patterns define and how stock market works.
- b) Risk management skills are required to manage the trade effectively.
- c) Sentiment analysis is currently supported for US stocks only.

#### V. RESULTS AND CONCLUSION

- The Fig. 1 in Section III represents the architecture of the software project.
- Therefore we conclude, this system can identify stocks with selected candlestick pattern.
- It can also perform sentimental analysis to predict the market sentiment.
- As it is a web-based Python application it can be accessed from any platform like Android OS, iOS, Linux, Windows, etc. i.e., it is platform independent.
- Implementation of this project will help various users who trade in the stock market to analyse and study how various candlestick patterns work in the live market hours.
- The users will be able to plan their trades effectively.
- The project would also result in helping the people increasing their knowledge about technical analysis and how the market performs under a certain sentiment.

## VI. FUTURE WORK

We can implement many additional features which will surely help the users to expand their knowledge deeply and even help us to improve our skills as a programmer too.

Keeping in mind the future development the following additional features can be added in this project:

- 1) Stock price prediction using various prediction techniques like regression, LSTM, ARIMA, RNN.
- 2) Support for multiple benchmark indices from around the world.
- 3) Option to select specific index from a list of indices from around the world for analysis.
- 4) Discover trending stocks on the selected index.
- 5) Support for performing fundamental analysis on stocks.

The above features can be added in the project but still there will be a lot of scope for improvement in this project as currently there are a lot of concepts of technology which are still under development. As new technology and techniques are discovered, future scope for development of this project will increase further.

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  - c. [Technical Analysis](#)
  - d. [Risk Management](#)
  - e. [Technical Analysis Library](#)



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