CANDLESTICK FORMATION PREDICTION

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ABSTRACT

Prediction in the stock market is challenging and complicated for investors. Many researchers have employed different algorithms to predict the stock market. Candlestick chart analysis is one of the model. Candlestick chart shows the open, close, high and low price of the stock. Based on these four prices it forms various patterns. The most successive candlestick patterns are taken in this paper. Then we analyse the various patterns formed in the share market and predict the trend of the stock market based on the analysis.

. **Keywords: -***Stock market, Candlestickchart analysis, Candlestick..*

1. INTRODUCTION

The candlestick chart is used in stocks, equity, foreign exchange, and commodities trading to keep track of the price movement. Each "candlestick" typically shows one day, thus a one-month chart may show the 20 trading days as 20 "candlesticks". It is plotted with a fat set that contains pen, close, high and low values for each time period you want to plot. Candlestick charts are an effective way of visualizing price movements. There are two basic candlesticks bullish candlestick and bearish candlestick.

ExistingSystems

This paper proposed an approach to extract fuzzy candlestick patterns from financial time series and select a set of patterns for investment decision making. The candlestick chart in stock market is a widely used technical analysis model. The investor observes the candlestick chart and makes investment decisions by identifying patterns in the chart. We use fuzzy linguistic variables to model candlestick chart and extract patterns from the chart. A Genetic algorithm based approach is used to select a set of extracted pattern as the background knowledge in the system for investment decision making.

1.1 ProblemStatement

Prediction in the stock market is challenging and complicated for investors. Many researchers have employed different algorithms to predict the stock market. Analysis of patterns formed in the candlestick chart is one of the model. Since candlestick chart analysis is a technical based one it can be used by anyone who has no knowledge about share market.

1.2 ProposedSystem

In this paper we analyse the candlestick charts of various company. We search for the patterns formed in the company over the past few days. Based on the analysis of the candlestick patterns, we predict the stock price fluctuation in the market. Since this is a technical analysis it also includes considerable risk. The experimental results shows that the investment decisions based on selected these patterns have better investment performance than using original non-fuzzy patterns.
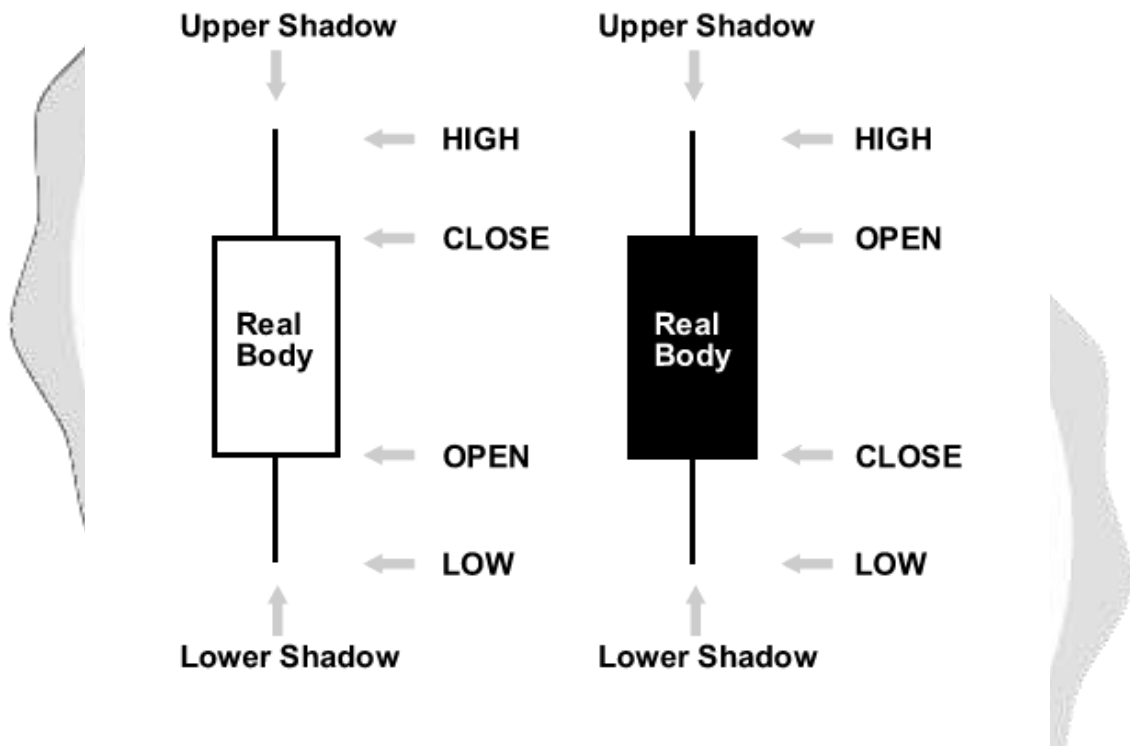
2. SYSTEM ARCHITECTURE ANDCOMPONENTS

Fig -1: System architecture of Smart Deal.

The above Figure shows the system architecture of the proposed system. It depicts conceptual model of communication between user and the system. The hollow or filled portion of the candlestick is called "the body" (also referred to as "the real body"). The long thin lines above and below the body represent the high/low range and are called "shadows" (also referred to as "wicks" and "tails"). The high is marked by the top of the upper shadow and the low by the bottom of the lower shadow. If the stock closes higher than its opening price, a hollow candlestick is drawn with the bottom of the body representing the opening price and the top of the body representing the closing price. If the stock closes lower than its opening price, a filled candlestick is drawn with the top of the body representing the opening price and the bottom of the body representing the closing price.

The components of the system architecture diagram are:
Open
Close
Low
High
Bullish and Bearish Candle
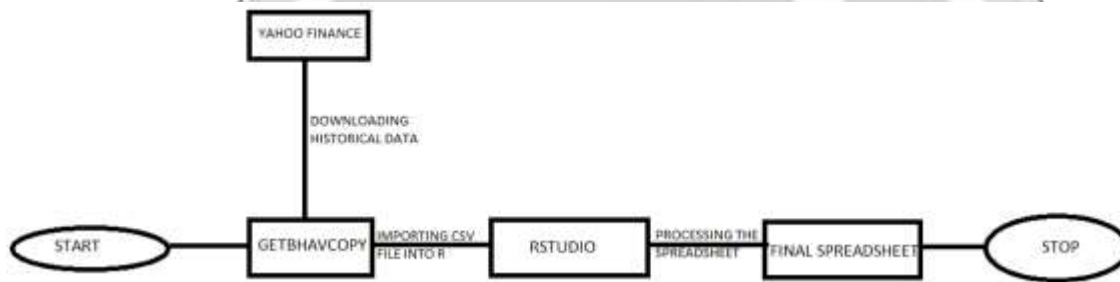Upper and Higher shadow

2.1Working

Fig -2 DataFlow Diagram

Getbhavcopy can download daily and historical EOD data for Equities, Indices and Futures. The downloaded data is exported in a format that can be easily imported by leading technical analysis softwares like Metastock, Amibroker and Fcharts. R Studio imports the downloaded csv file. Then it process the data in the spreadsheet. The values required for the candlestick patterns are created. Then the pattern is selected and the logic for that pattern is applied to the imported file. Finally the result is stored in the same spreadsheet.

2.2. CandlestickPattern

A candlestick pattern is a movement in prices shown geographically on a candlestick chart. These patterns are used to predict the market movement. There are 42 recognised patterns that can be split into simple and complex patterns. Patterns in turn help the technical analyst to set up a trade. The patterns are formed by grouping two or more candles in a certain sequence. However, sometimes powerful trading signals can be identified by just single candlestick pattern. Hence, candlesticks can be broken down into single candlestick pattern and multiple candlestick patterns.

3.IMPLEMENTATION

Data puller is used to extract the historical data. The csv file is converted into excel file and it is imported into r studio. Steps involved in implementations are:
1.) Downloading Historical Data 2.) Importing into Rstudio

3.) Processing the spreadsheet 4.) Executing the programming
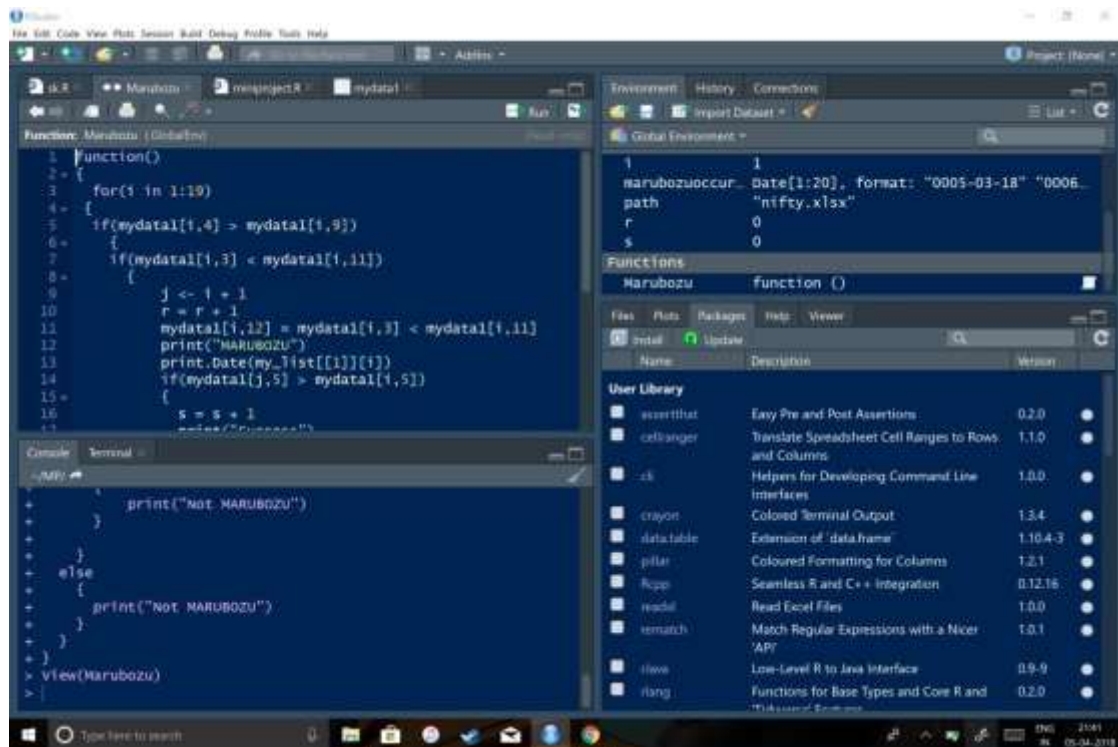
5.) Displaying the resulting spreadsheet

Fig 3: Program Implementation
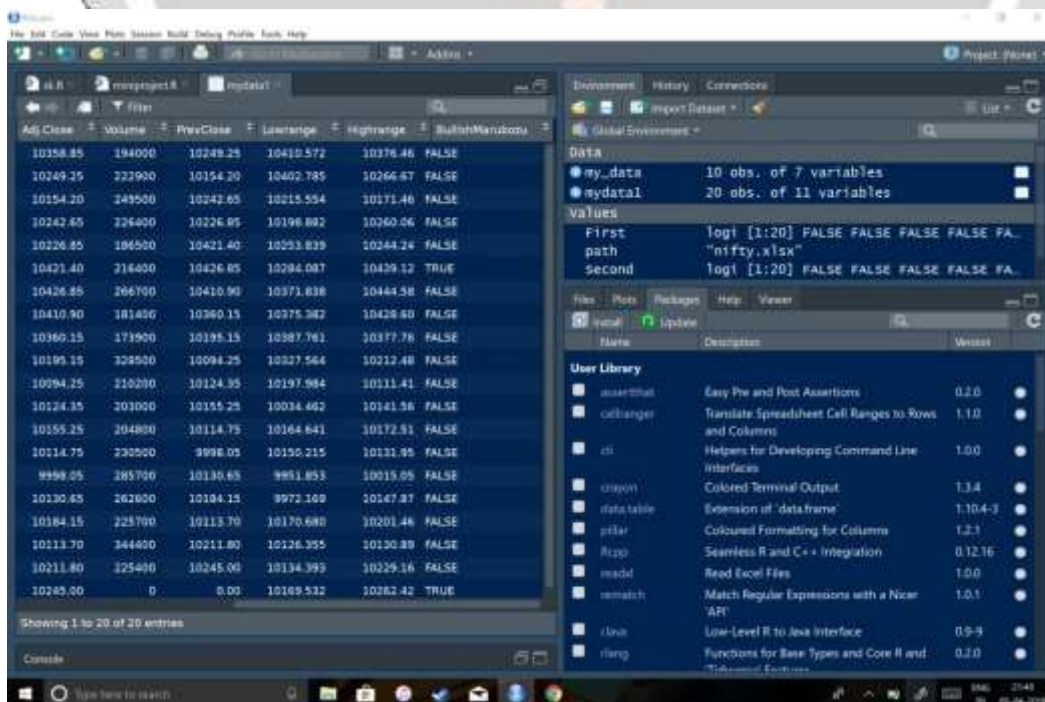
3.1 Marubozu

Fig 4: Execution

Marubozu is the single candlestick pattern. The word Marubozu means "Bald" in Japanese. Marubozu has just the real body without shadows. Two types of Marubozu Bullish Marubozu, Bearish Marubozu. The conditions for bullish marubozu pattern:

The body should not be very small

Upper shadow should not exceed the close value more

than 0.17 percentage

Similarly, for lower shadow it should not exceed higher

than 0.17 percentage of low value.

Sample code for marubozu pattern

```
#Calculating Lowrange and Highrange
mydata$Lowrange = mydata$Open - (mydata$Open * 0.0017) mydata$Highrange
= mydata$Close + (mydata$Close * 0.0017)
#Checking for BullishMarubozu
First <- mydata$Low > mydata$Lowrange Second
<- mydata$High < mydata$Highrange
mydata$BullishMarubozu <- First & Second
```

3. CONCLUSIONS

Candlestick chart analysis is a technical analysis of which helps investors in investing in the share market by prediciting the trend of the market. In the technical analysis context, the price trend tends to repeat itself. This happens because the market participants consistently react to price movements in a remarkably similar way, each and every time the price moves in a certain direction. We can also determine the success rate of the patterns formed which will help investors in reducing the risk of downtrade.

4. REFERENCES

[1] Candlestick analysis based short term prediction of stock price fluctuations using SOM –
CBR – Author's - M M. Goswami, C K. Bhensdadia, A P. Ganatra

[2] The information content of high, low and close prices – Author's - Hongbing Ouyang

[3] Stock investment decision support for HongKong market using RBFNN based candlestick
models – Author's - Wing W.Y, Xue - Ling Liang, Patrick P.K. Chan

[4] Stock price trend analysis using wavelet transform - Author's – Armenia Z.R. Langi, S W Pitara, Kuspriyanto

[5] Developing a prediction model for stock analysis – Author's - R. Yamini Nivetha, C.Dhaya

[6] P. Wyckoff, "The Psychology of Stock Market Timing, New Jersey: Prentice - Hall, 1967.

[7] www.zerodhavarsity.com