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Virtual Trading Platform Using Algo trading

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ABSTRACT: The stock market is a platform where an enormous amount of data exists and constantly needs to be scrutinized for business opportunities. Peoples thought about buying stock in a certain company but sometimes they don't have the cash to trade or perhaps they do not have enough knowledge about the share market or they are worried to invest in a particular company. For carrying out online trading in India, you have to open an online Demat account and trading account for this you will require a depository participant, selection of which should be preceded by extensive research on various determinants, this is very time-consuming and inefficient. Online stock market games are simple, easy-to-use programs that imitate the real-life workings of the equities markets. These charges can significantly affect an investor's bottom line, and including these in simulated trading helps users learn to factor these costs in when making purchasing decisions. Using real data from the markets, the trading occurs in the context of a game, which can involve joining an existing game or the creation of a custom game that allows the user to configure the rules. The goal of this project was to achieve a basic understanding of the stock market through research and trading simulation. By using proper investment and technical analysis strategies in addition to online simulation tools, investment theories were put into practice. During the simulation, stock trades were made based on different strategies. Results from several trading strategies were compared and contrasted according to their profitability

KEYWORDS: Stocks, Investor, Simulation, FIX, Exchanger.

I. INTRODUCTION

The internet's arrival and its subsequent popularity in India have made online trading in India, which is about the online purchase and sales of shares, one of the extremely popular means trading. Both beginner and experienced traders and investors in India are milking this opportunity by trading online in futures and options, stocks and currencies worldwide. Such opportunities are in the form of reduced brokerage and commissions, better broking services etc. For a new investor, the stock market can feel a lot like legalized gambling. If the price of your stock goes up – you win! If it drops, you lose!" Not exactly. The stock market can be intimidating, but the more you learn about stocks, and the more you understand the true nature of stock market investment, the better and smarter you'll manage your money. Terms: A stock of a company constitutes the equity stake of all shareholders. A share of stock is literally a share in the ownership of a company. When you buy a share of stock, you're entitled to a small fraction of the assets and earnings of that company. Assets include everything the company owns (buildings, equipment, trademarks) Stocks in publicly traded companies are bought and sold at a stock market or stock exchange. These are some examples of popular Indian stock exchanges: NSE – National Stock Exchange (India) BSE – Bombay Stock Exchange The truth is there is no magical way to predict the stock market. Many issues affect rises and falls in share prices, whether gradual changes or sharp spikes. The best way to understand how the market fluctuates is to study trends. Algorithmic trading is the use of programs and computers to generate and execute (large) orders in markets with electronic access. Orders come from institutional investors, funds and trading desks of big banks and brokers. Algorithmic trading cuts down transaction costs, and allows investment managers to take control of their own trading processes. The main objective of Algo trading is not necessarily to maximize profits but rather to control execution costs and market risk.

II. RELATED WORK

A stock exchange, securities exchange is a facility where stock brokers and traders can buy and sell securities, such as shares of stock and bonds and other financial instruments. Stock exchanges may also provide for facilities the issue and redemption of such securities and instruments and capital events including the payment of income and dividends citation needed. Securities traded on a stock exchange include stock issued by listed companies, unit trusts, derivatives, pooled investment products and bonds. Stock exchanges often function as" continuous auction" markets with buyers and sellers consummating transactions at a central location such as the floor of the exchange. Algo trading is the use of programs and computers to generate and execute (large) orders in markets with electronic access. Orders come from

institutional investors, funds and trading desks of big banks and brokers. These statistical, mathematical or technical models analyse every quote and trade in the stock market, identify liquidity opportunities, and turn the information into intelligent trading decisions. Algo trading, cuts down transaction costs, and allows investment managers to take control of their own trading processes. The main objective of Algo trading is not necessarily to maximize profits but rather to control execution costs and market risk. Algo trading possesses numerous advantages over discretionary methods. The most important advantage in creating an automated strategy is that its performance can be ascertained on historical market data, which is representative of future market data, known as back testing. With a fully automated system there is no need for an individual or team to be constantly monitoring the markets for price action or news input. This frees up time for the developer of the trading strategy to carry out more research and thus, depending upon capital constraints, deploy more strategies into a portfolio. Furthermore by automating the risk management and position sizing process, by considering a stable of systematic strategies, it is necessary to automatically adjust leverage and risk factors dynamically, directly responding to market dynamics in real-time. This is not possible in a discretionary world, as a trader is unable to continuously compute risk and must take occasional breaks from monitoring the market

III. PROPOSED ALGORITHM

The proposed system will predict best stock prizes either for buyer or seller depending upon the conditions based on the environment of company. Peoples are getting more confused and they are not able to find any way so this new virtual stock exchange technology, stock market simulators stock market games that let you pick securities, make trades and track the results all without risking and that will help in building their confidence to invest in stock market. Online stock market games are simple, easy-to-use programs that imitate the real-life workings of the equities markets. Most stock market games give users 1lakh in pretend money to start. Most online stock simulators try to match real-life circumstances and actual performance as much as possible. Many even charge broker fees and commissions. The Virtual trading platform is well integrated with the site's familiar educational content. Using real data from the markets, the trading occurs in context of a game, which can involve joining an existing game or the creation of a custom game that allows the user to configure the rules

Extraction of Stock Data: The extraction of historical prices was done by using the set of tools provided by finance.yahoo.com. The historical prices were obtained by framing the required URL and using the python get URL code. The historical prices were downloaded in the csv format and then parsed to store the required data on to the database. The data extraction is done using Django web application framework. Django was originally developed for the news-oriented site of the world It simplifies the development process of complex, data-base driven web applications like a news-oriented site. Its well-designed framework includes three major parts: model, view and template. Dataset characteristics: Date of trade, Open price, High price, Low price. Number of shares of the company: Total turnover (in INR), Deliverable quantity, Spread High-Low. Features:Analysing stock data We have obtained row stock data of some companies that affect the Sensex. Analysing the factors,we have to obtain the data in the same period for the following factors. We have to analyse the variations in the stock value of the companies with respect to these factors using some regression algorithms The virtual trading platform was successfully made and output of the same for the static as well. With this system, the user can easily buy or sell the shares without using the actual money. The GUI provides a very user-friendly experience for the user so that, the user can able to understand the stock market very easily.

IV. CONCLUSION AND FUTURE WORK

Online Virtual trading is a new concept in the stock market. In India, virtual trading is still at its infancy stage. Online trading has made it easy to trade in the stock market as now people can trade while sitting at their home. There are some problems while doing the trading through the internet. The major problem faced in online trading is that people don't have full knowledge regarding the stock market. They find it difficult to trade themselves, as a wrong entry made by them, can bring them huge losses. The stock market is full of risk, and risk is not always on the opposite side of earning profits. Risk is the potential opportunity for investors with full preparation. Nevertheless, risk can be a disaster for investors who do merely enough prior work and tend to do any emotional- based decision. This Virtual trading platform provides a precious opportunity to have an early and quick glimpse of how the stock market runs. It indicated that, as future investors, should do much more work than we could expect before we put our money in the stock market and let it run. With the Virtual Trading Platform, people can able to practice and understand the stock market very easily and efficiently without using the actual money. This gives the user an assurance to buy or sell the stocks in the real-time market with legitimate predictability. Overall, this project has benefited in many ways adding to our Web Development and Machine Learning knowledge. This is the ending to the progress report. Using Neural networks to forecast stock market prices will be a continuing area of research as researchers and investors strive to

outperform the market, with the ultimate goal of bettering their returns. The commonly used backpropagation network offers good performance, but this performance could be improved by using recurrence or reusing past inputs and outputs. However, it is unlikely a neural network will ever be the perfect prediction device that is desired because the factors in a large dynamic system, like the stock market, are too complex to be understood for a long time.

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