

Impact of Artificial Intelligence on Stock Market Game

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Abstract— In last few years India have seen extensive growth in the area stock market and investments involving stocks and mutual funds .Growing interest in these areas provide vast opportunity for educating individuals with respect to the general and various concepts used in investing in stock market .Teaching methods are less but with respect to teaching general concepts of the stock market since these methods are normally not uneasy to understand .However, a method similar to general concepts related to stock market and investing into a game that is both educational as well as entertaining would be of greater assist in the education of individuals with respect to the stock market. The main aim of this paper is to develop a stock market trading game which is easy to understand by common person who wish to learn about stock trading but hesitates to invest money into the stock market.

Keywords— Develop, Educational, Entertaining, Hesitates, Investments, Trading.

I. INTRODUCTION

Simulated Stock Market game is a web application based game that tries to give a real experience of a live stock market virtually so that players gain confidence for trading in real stock market without any loss of money. Virtual Stock Trading sometimes also called as paper trading is a way through which a person can practice trading process without actually investing money. This is simply possible by creating an environment just like a real stock market trading. Before evolution of computer and advance technologies investors used to find out paper trading more hard [1]. Our aim is to create a web application that will help people to understand stock market trading that is buying or selling stocks. We are going to create this application using HTML5 AND CSS3.

The resources available and cost of the resources is a topic which bothers us in our life are

- Staff is given a quality education or not.
- Reduce consumption of resources to get benefits to more number of people.

The stock market shows the vast distribution and pricing for all stocks, there is huge scope for buying and selling [2]. The system is currently running by number of investors or traders who keep on investing their money in stocks. There are two main purposes of stock market.

- First is to provide income revenue to companies so that they can use those income to fund and grow their businesses.
- Second purpose is to give investors a chance to purchase stocks of desired and profitable trading companies.

II. LITERATURE SURVEY

Literature was reviewed from various sources, like from research papers, publications books, existing bibliographic information and recommendations by the project panel. Various data has been obtained from these statistics.

Simulated stock market game is the game that allows players to trade stocks in a virtually simulated area. There are several forms in which Stock Market Simulation Games exist but the aim remains the same that is to let players gain experience and also for entertainment purpose by trading stocks virtually with zero risk and satisfaction. Moreover, some stock market simulation games involve real money. Players play within themselves to get more stocks with maximum profit. There are various stock market games which are based on real life stocks from Nasdaq, Amex and Nyse or other indexes. Simulated stock market games are used for educational use to train aspiring stock market traders and future brokers about stock trading. Simulated stock market games are also used for entertainment and also to engage in virtual trading competitions.[5]

As per the survey, in [3] majority of the population in India don't invest in the stocks market due to the risk of losing capital, In comparison, Americans over 50% and neighbor country China over 7% of the total population invest in the stocks where in India only 2% are the investors of the overall population.

Stock market simulation is a non-mainstream simulator of the real stock market. The objective of this project is to get familiar with and study the Stock market by analyzing the market workflow. This will help in making strategies and taking the risk to invest in the stock market. The simulation provides users with virtual money to invest and implement the strategies. There are online websites that provide virtual investment services in form of a game. As per the information

In [4] price variations in the stock market are occurred due to two types of investors, "Rational" and "Noise". Rational traders are those who do market analysis review past data and

plan their investment opposite to that Noise traders are novice one who investments depends upon market dynamics and behavior of other traders.

In[7] Amir albadvi suggested the key issue in stock trading is decision making, Selecting the right stock at the right time to sell or buy would give a positive or a negative result of the decision, The purpose of this model is to learn the stock trading from both good and bad angle.

By stock trading people can make a good income to support their financial needs. But losing money in market also makes an impact on people's mental health.

In[8] Geri Terzo discussed how emotions influence the stock market, It is seen that when the emotions are on the negative side investor take irrational decisions about stocks, In opposite to that joyful feeling works in stock advantage.

A. CONTRIBUTION

- Creating an application with players interested in stock market for trading.
- Capabilities for deals to take place
- Displaying data on dashboard
- Dealing with the problem occurring during trading and how to resolve those problems.

III. PROPOSED SYSTEM

The proposed system is a game where players compete with each other [6]. Basic knowledge about this game is to give knowledge of stock market and how buying and selling takes place in stock market. To make it simple for people virtual stock exchange technology or stock market games that let you invest securely without loss of actual money. Making trades and tracking investments results without risking and which in return helps to boost confidence of people to invest in stock market.

Stock Market Games are easy and simple programs that replicate the real-life functioning's of the equities markets. In this game users are initially give ₹1000 and 100 stocks to start the game. Game tries to match real life conditions and situations as much as possible. This game doesn't charge any broker fees and commissions.

This Game is good for educational purpose and is familiar to people who have knowledge of stock market. Using data which is already inputted in the games database, the trading takes place, which can involve joining or creating a game with fixed set of rules. Through the use of RANDOM module the cost of shares would be randomized which help to give a experience of real stock market where the stock prices changes every minute.

IV. METHODOLOGY

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Charges from brokers can significantly affect the players bottom line [6] and these helps users to learn the cost related factors and also helps in decision making. Players will be able to watch their own dashboard and have look on their budget and finance, accordingly invest into stocks. The stock market simulator is well integrated and familiar application for educational purpose. Using the dummy data the trading occurs in context of a game. To begin with game players need to sign up or register first then only players will be allowed to start with the game with the pre-defined rules by the creator.

A. RANDOM NUMBER GENERATOR

In this game, to keep on changing the stock prices random number generation method is used. With the help of this method we are able to create stock prices which vary each time the player clicks on the view order book button. Random number generation is the truly random generator method which doesn't repeat a number. There are various applications which have led to development of different randomly generated data. Some examples are rolling a dice, coin flipping, cards etc. The nature of this technique generating large quantity of numbers is very useful. [9]

In this game random number generator is used to change the prices of stocks every time. Similar, to the actual stock market where prices vary every minute. So, to keep the game in running mode random function plays important role by randomizing the cost of shares.

For example, suppose the stock1 price is currently ₹1200 the very next moment player visits again then the stock price would be more than ₹1200 or less than ₹1200 as per randomly generated value.

a. SHARES COST

Whenever the player wishes to buy or sell stock he needs to specify the quantity and company name of that stock which he wants to buy or sell.[10] So, the cost generated by random function would be taken into consideration and multiplied by the quantity of stocks player wish to buy or sell. According, changes would be made on player's dashboard.

b. INVESTORS STRATEGY

A set of rules which are to be followed while investing in stock market is the investor's strategy; it is designed to guide the investor like how to behave or proceed with trading is all mentioned in this. Investors are guided for selecting the portfolio. Everyone has their own strategies. Everything depends on individual skills, tricks and strategies. Some takes high risk and takes profit where as some may not. Most of the investors think of taking high risk to gain more profit.

V. SIMULATED STOCK MARKET GAME

Simulated stock market games are the games that allow players to trade stocks in virtually simulated area. There are several forms in which Stock Market Simulation Games exists but the aim remains same that is to let players gain experience and also for entertainment purpose by trading stocks virtually with zero risk and satisfaction. Moreover, some stock market simulation games involve real money. Players play with each other to get more stocks with maximum profit. There are various stock market games which are based on real life stocks from Nasdaq, Amex and Nyse or other indexes. Simulated stock market games are used for educational use to train aspiring stock market traders and future brokers about stock trading. Simulated stock market games are also used for entertainment and also to engage in virtual trading competitions.[5]

This is profession with high risk but at same time well-paid and requires highly skilled and knowledge able persons, but then also results have shown that simulation is applied using basic knowledge and simple rules, both artificial and human agents converge for high allocation efficiency but also for high transaction occurrence.

The player can play game through any web browser. As soon as player registers itself he/she will be visible with main window that is game window. Each player gets its

fixed amount and shares and player can began playing. Whatever changes made by player gets stored immediately into the database. If player request to watch its money or shares database responds to it and display the desired content to the player. Hence this communication between the player and database goes on continuously till the game ends.

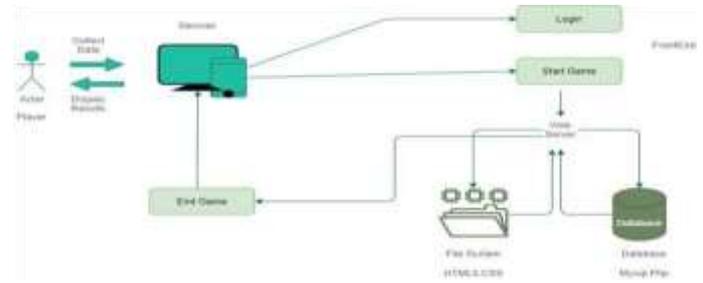


Fig-1. Architecture of Simulated Stock Market Game

In this game where players compete with each other [6]. Basic knowledge about this game is to give knowledge of stock market and how buying and selling takes place in stock market. To make it simple for people virtual stock exchange technology or stock market games that let you invest securely without loss of actual money. Making trades and tracking investments results without risking and which in return helps to boost confidence of people to invest in stock market. Figure1 shows the architecture of the game from frontend to backend.

Stock Market Games are easy and simple programs that replicate the real-life functioning’s of the equities markets. In this game users are initially give ₹1000 and 100 stocks to start the game. Game tries to match real life conditions and situations as much as possible. This game doesn’t charge any broker fees and commissions.

VI. RESULTS

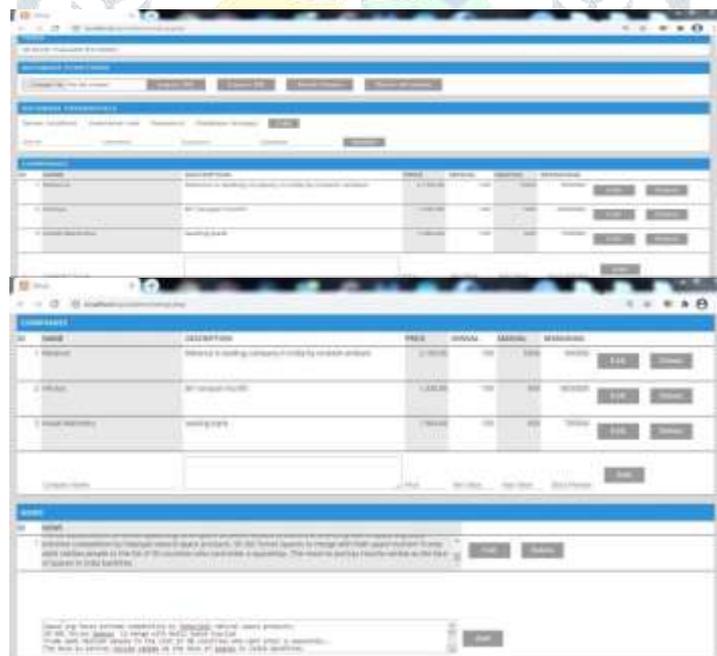


Fig- 4

Fig-2. Wireframe Diagram of the Game

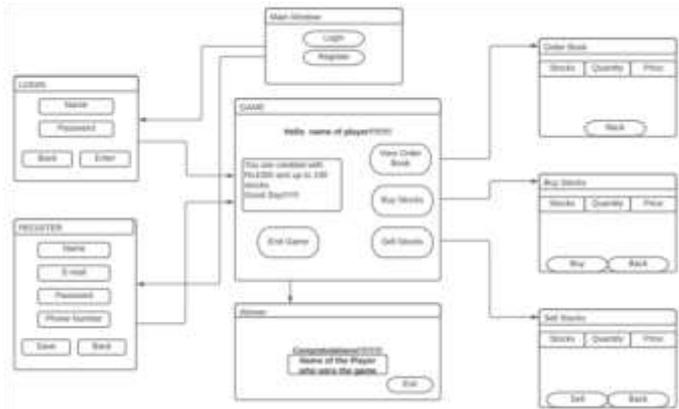


Fig-5



Figure2 shows the rough layout of pages and connectivity between different pages.

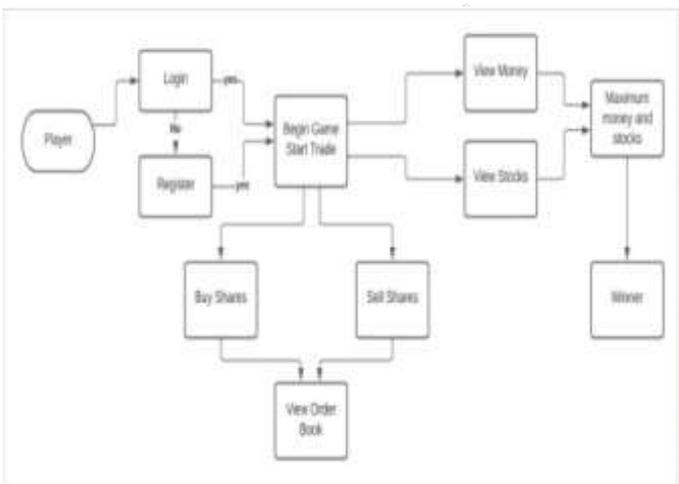


Fig-6

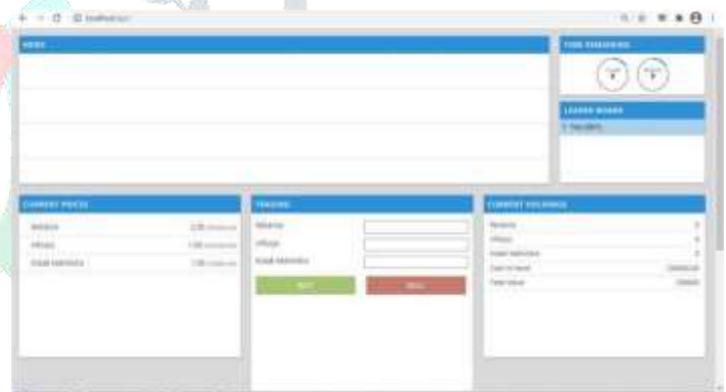


Fig-3. Work-Flow Diagram

Initially, after player begins with the game he/she needs to sign up or login after that only player will be allowed to start the game. Players will be given two options buy and sell, he/she can either use his/her money in investing for Fig-7 shares or sell stocks which are already given to them in the beginning of the game. Figure 3 shows the work flow of the game.

Fig- 4-8 represents the actual developed layout of the simulated stock market game.



Figure 8

VII. CONCLUSION

Players in the simulation game, play to compete with each other with the virtual capital allotted to them at the starting of the game, each player will trade stocks and at the end of the simulation player with the most capital will win the game. For keeping the record of each trade a centralized database, and for game simulation, a web application was used.

The main focus was on the ability to make change in situation; knowledge to gain market strategy, where the system is used; globally, inclusive usability; a ordered process principle of stock market. On other side for the strong stock market game the required components are: coordination of process and deadlines, also people are able to know the stock market better people who are interested to it are also able to take interest and learn how the trade works in stock market. This stock market game helps people to know about the stock market. In conclusion, this application provides a basic introduction to the trading world. Our understanding of the stock market and its potential to increase the value of an trading over time was also improved.

In conclusion, this game provides a basic introduction to the stocks investment which helped us in planning strategies, taking a risk, and taking decisions without the risk of losing real money.

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