

ONLINE STOCK MARKET TRADE AND MONITORING SYSTEM USING DATA MINING CLASSIFICATION TECHNIQUE

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ABSTRACT

Online shares manager is assistant software for traders who normally do the trading through some stock brokers. These traders mostly track the share prices using News channels or newspapers and place the order for stock buy or sell to stockbroker. Stockbrokers actually do the buy or sell action on behalf of such traders. In this system each and every customer who logs in for the first time has to create an online account. By creating this account the site assigns a Login Id and two different passwords namely the Membership and Trading passwords, which are rather unique to each and every customer. This system will be accessible to all customers who have a valid User Id and Password. After Logging in this system provides the following facilities

1. INTRODUCTION

Providing customized services have always helped companies to maintain better relations with their customers. According to the concept of relationship marketing, maintaining better customer relations involve building up a network with individual customers through the services being offered to them which will strengthen the network between the company and the customer and eventually provide value addition to the company(Park and Kim,2003).

E-commerce is the application of electronic means in making business transactions; the internet has surpassed the outreach of e-commerce by providing faster transmission media. To help the customers in search process, new business projects with innovative ideas have been possible to be served via ecommerce (Chappell et al., 2018). The Internet has emerged as a factor for growth of e-commerce in which trust and security are considered to be the major elements of concern for the customer for which e-vendors are required to be authentic, provide confidentiality, respect privacy, protect data and not repudiate transactions.

E-vendors aim should be to help customers by various practices like by giving smooth navigation experience, doing surveys and finding the preferences and urgencies of customers, giving the benefits of loyalty programs, giving credit on the money through reward points, giving choices for payments i.e., through credit cards, debit cards or net banking, providing interactive services by training customer's support to answer the queries of customers well (Lazakidou et al., 2008; Maniam et al., 2012). Functionality of product and psychological factors are the major determinants for online customer service experience. Factors like familiarity, layout, social presence, videos on product usage, interactivity, value for money are some others determinants while shopping online (Klaus, 2013).

E-Commerce has provided various opportunities to increase the customer base i.e. convenience, huge information about product catalog, 24*7 services, boosting brand awareness, accessing multi sites and many more. E-commerce has emerged as a convenient platform to shop over the years (Bai et al., 2014; Chiu et al., 2017). For managing customer relations, electronic customer relationship (e-CRM) has helped companies increasing their reach to the customers as well as for collecting potential data of customers.

The advancement in technology is helping companies in getting data through various touch points like at the time of point of purchase customers are asked to fill software oriented feedback forms (Chen and Popovich,2003;Becker et al.,2009). Using such data helps the companies to get feedback for their services as well as suggestions to serve better and eCRM initiative helps making customer experiences desirable whenever they shop online. It has been used helping to reduce expense and to make business more efficient and at competitive benefits. The various opportunities provided by e-CRM includes interactive and improvised customer relationships, managing customer's touch points as well as personalizing with customers (Adlin et al.,2019).

E-service quality, ease of use, and usability are positively significant towards e-CRM performance (Zandi and Tavana 2011; Momani, 2009). CRM is defined as a combination of business process and technology that seeks to understand company's customers from perspective of who they are, what they do and what they are like (Couldwell, 1998). Another group of authors (Peppers and Rogers, 1995) consider IT as one of the vital and important aspects of CRM and they define CRM as "the market place of the future is undergoing a technology-driven metamorphosis".

METHODOLOGY

Account Summary, List of all available, forthcoming List of IPO'S (initial public offering), Details of all the shares held by the customer at present, expert's opinion on the shares that can be betted on, Buying and selling of shares through a secure gateway. Also providing immediate information of any scrip's performance during the current and previous fiscal, Updating the values of the Nifty and B.S.E from time to time, Predicting the trend of the market in the coming days.

SIGNIFICANCE OF THE WORK

The present system is an undeveloped form and the manual process of the overall system is too clumsy and complicated. The Customers facing lot of problems to know their shares information details. It is very difficult to view the current share value and existing share traders' details. It is very difficult to know the stock details and available status immediately. In this system each and every customer who logs in for the first time has to create an online account. By creating this account the site assigns a Login Id and two different passwords namely the Membership and Trading passwords, which are rather unique to each and every customers. This system will be accessible to all customers who have a valid User Id and Password

2. LITERATURE SURVEY

Literature survey is the most important step in software development process. Before developing the tool, it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, the next steps are to determine which operating system and language used for developing the tool. Once the programmers start building the tool, the programmers need lot of external support. This support obtained from senior programmers, from book or from websites. Before building the system the above consideration is taken into for developing the proposed system.

RELATED WORK

Over the past two decades many important changes have taken place in the environment of financial markets. The development of powerful communication and trading facilities has enlarged the scope of selection for investors. Forecasting stock return is an important financial subject that has attracted researchers' attention for many years. It involves an assumption that fundamental information publicly available in the past has some predictive relationships to the future stock returns [10]. In order to be able to extract such relationships from the available data, data mining techniques are new techniques that can be used to extract the knowledge from this data. For that reason, several researchers have focused on technical analysis and using advanced math and science. Extensive attention has been dedicated to the field of artificial intelligence and data mining techniques [11]. Some models have been proposed and implemented using the above mentioned techniques, the authors of [5] made an empirical study on building a stock buying/selling alert system using back propagation neural networks (BPNN), their NN was codenamed NN5. The system was trained and tested with past price data from Hong Kong and Shanghai Banking Corporation Holdings over the period from January 2004 to December 2005. The empirical results showed that the implemented system was able to predict short-term price movement directions with accuracy about 74%.

The research by [2] used decision tree technique to build on the work of Lin [12] where Lin tried to modify the filter rule that is to buy when the stock price rises $k\%$ above its past local low and sell when it falls $k\%$ from its past local high. The proposed modification to the filter rule in [12] was by combining three decision variables associated with fundamental analysis. An empirical test, using the stocks of electronics companies in Taiwan, showed Lin's method outperformed the filter rule. According to [2], in Lin's work, the criteria for clustering trading points involved only the past information; the future information was not considered at all. The research by [2] aimed to improve the filter rule and Lin's study by considering both the past and the future information in clustering the trading points. The researchers used the data of Taiwan stock market and that of NASDAQ to carry out empirical tests. Test results showed that the proposed method outperformed both Lin's method and the filter rule in the two stock markets.

The model of [11] applied the concept of serial topology and designed a new decision system, namely the two-layer bias decision tree, for stock price prediction. The methodology developed by the authors differs from other studies in two respects; first, to reduce the classification error, the decision model was modified into a bias decision model. Second, a two-layer bias decision tree is used to improve purchasing accuracy. The empirical results indicated that the presented decision model produced excellent purchasing accuracy, and it significantly outperformed than random purchase. The authors of [10] presented an approach that used data mining methods and neural networks for forecasting stock market returns. An attempt has been made in this study to investigate the predictive power of financial and economic variables by adopting the variable relevance analysis technique in machine learning for data mining. Over the past two decades many important changes have taken place in the environment of financial markets. The development of powerful communication and trading facilities has enlarged the scope of selection for investors. Forecasting stock return is an important financial subject that has attracted researchers' attention for many years. It involves an assumption that fundamental information publicly available in the past has some predictive relationships to the future stock returns [10]. In order to be able to extract such relationships from the available data, data mining techniques are new techniques that can be used to extract the knowledge from this data. For that reason, several researchers have focused on technical analysis and using advanced math and science. Extensive attention has been dedicated to the field of artificial intelligence and data mining techniques [11]. Some models have been proposed and implemented using the above mentioned techniques, the authors of [5] made an empirical study on building a stock buying/selling alert system using back propagation neural networks (BPNN), their NN was codenamed NN5. The system was trained and tested with past price data from Hong Kong and Shanghai Banking Corporation Holdings over the period from January 2004 to December 2005. The empirical results showed that the implemented system was able to predict short-term price movement directions with accuracy about 74%.

3. EXISTING SYSTEM

This project is associated to maintain all the Shares details, stockbroker details and Share values details these are going to be maintained in manual process to do all these tasks it will take lot of time. Thus the existing system not supporting multi-user support.

LIMITATION OF EXISTING SYSTEM

The main limitations of the existing system are as follows:

1. The present system is an undeveloped form and the manual process of the overall system is too clumsy and complicated.
2. The Customers facing lot of problems to know their shares information details.
3. It is very difficult to view the current share value and existing share traders' details.
4. It is very difficult to know the stock details and available status immediately.

4. PROPOSED SYSTEM

In this system each and every customer who logs in for the first time has to create an online account. By creating this account the site assigns a Login Id and two different passwords namely the Membership and Trading passwords, which are rather unique to each and every customers. This system will be accessible to all customers who have a valid User Id and Password.

ADVANTAGES OF THE PROPOSED SYSTEM

The following are the advantages of the proposed system. They are as follows:

1. The system makes the overall project management much easier and flexible.
2. Trader can maintain all the details about the shares with the details of their status.
3. Customer can feel ease to know the value of the shares and his account information.

There is no risk of data mismanagement at any level while the project development is under process.

5. SOFTWARE PROJECT MODULES

Implementation is a stage where theoretical design is converted into programmatically manner. The implementation will be divided into number of modules like 3 modules

1. Member Registration Module
2. Member Login Module
3. Admin Login

Now let us discuss about each and every module in detail as follows:

5.1 Admin Module

Here admin is one who is responsible for creating the shares information. In this module he can add money for the members account. He can add shares information and he can also see list of shares information like how many sold the shares and what is the percentage acquired from sell and buy. For every sell and buy transaction admin will get some sort of brokerage charges.

5.2 Member Registration Module

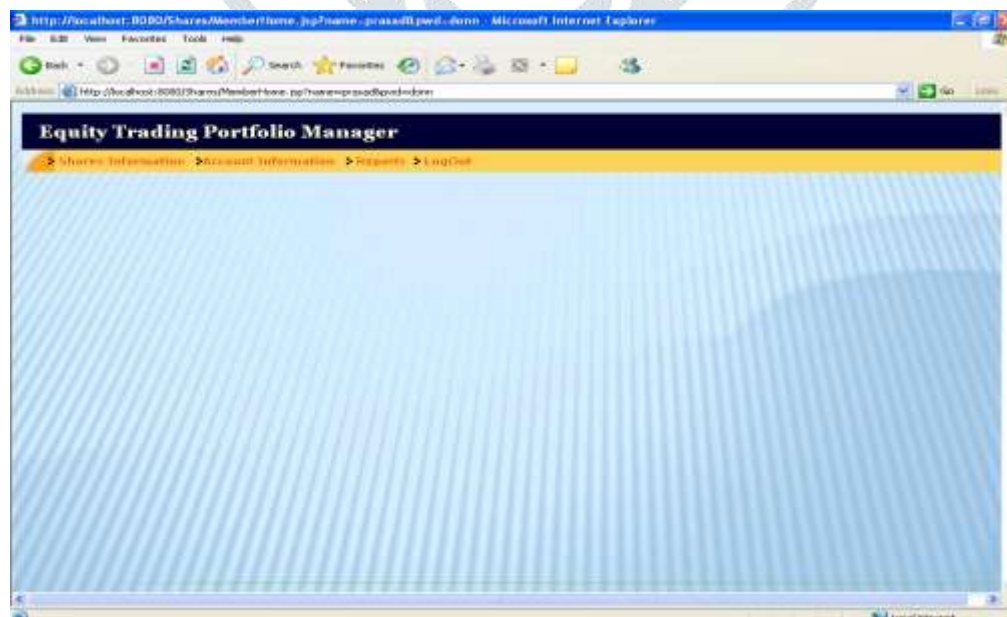
In this module, the member is one who is mainly required to create a account to participate in share.He will create account with his basic details and also try to login after getting approved by the admin.

4.8.3 Member Login Module

In this module, once after getting registered the member can able to login into the account and he can perform following operations like :Try to add bank account,try to deposit amount in the account.He will buy/ sell the shares which are created by admin.He can see list of shares information which periodically update.He can see list of profit and loss information generated from shares.

6. OUTPUT RESULTS

MEMBER HOME PAGE



VIEW SHARES INFORMATION

The screenshot shows the 'Equity Trading Portfolio Manager' interface. The 'SHARES INFORMATION' section displays a table for DELL with columns for Scrip Name, Buy value, and Sell Value. The 'EQUITY HOLD INFORMATION' section shows a table with columns for Scrip Name, Qty, Buy Price, and Current Price. The 'EQUITY SELL INFORMATION' section shows a table with columns for Scrip Name, Qty, Sell Price, and Current Price. The 'EQUITY SUMMARY ACCOUNT INFORMATION' section shows a table with columns for Scrip Name, Qty, R/S, Buy Price, Current Price, P/L, and Net P/L.

Scrip Name	Buy value	Sell Value
DELL		1452.00

Scrip Name	Qty	Buy Price	Current Price
DELL	6	1475.0	1522.00

Scrip Name	Qty	Sell Price	Current Price
DELL	7	1515	1652.00

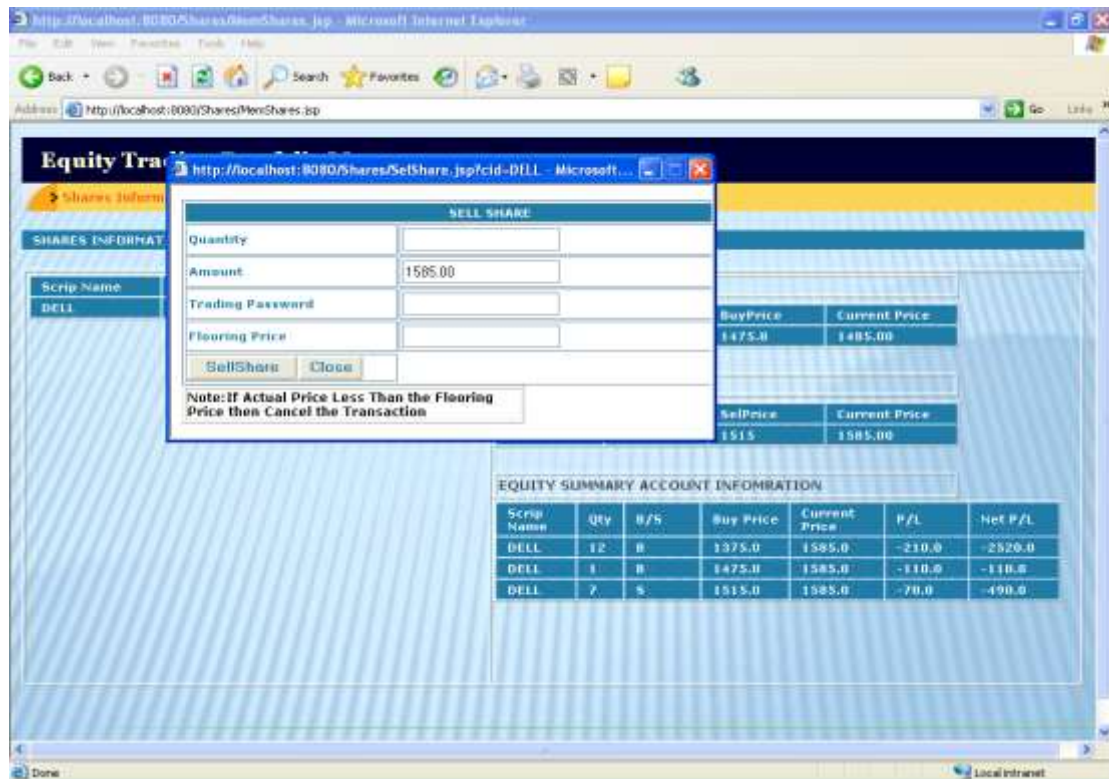
Scrip Name	Qty	R/S	Buy Price	Current Price	P/L	Net P/L
DELL	12	0	1475.0	1652.0	-273.0	-329.0
DELL	1	0	1475.0	1652.0	-177.0	-177.0
DELL	7	0	1515.0	1652.0	-137.0	-599.0

BUY SHARES

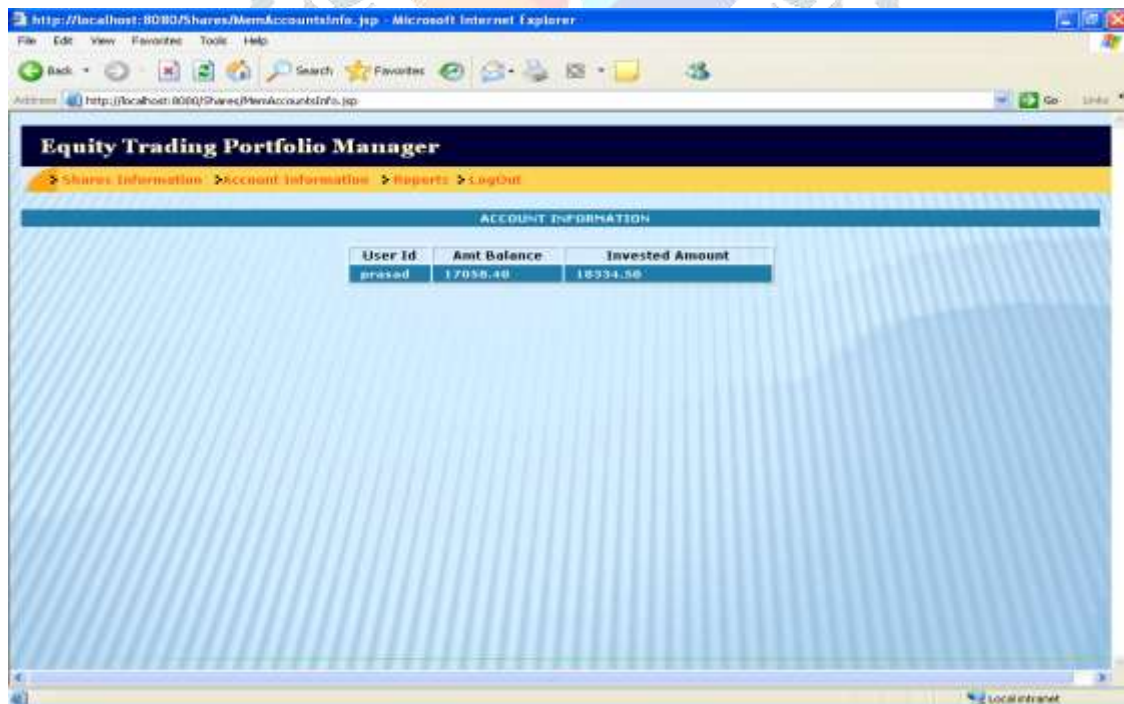
The screenshot shows the 'BUY SHARE' form in the Equity Trading Portfolio Manager application. The form includes fields for Quantity, Amount (1419.00), Trading Password, and Ceiling Price. There are 'Buy Share' and 'Clear' buttons. A note states: 'Note: If Actual Price Exceeds Ceiling Price then Transaction is Cancelled'. The background shows the 'SHARES INFORMATION' section with a table for DELL.

Scrip Name	Qty	R/S	Buy Price	Current Price	P/L	Net P/L
DELL	12	0	1475.0	1519.0	-144.0	-1729.0
DELL	1	0	1475.0	1519.0	-44.0	-44.0
DELL	7	0	1515.0	1519.0	-4.0	-20.0

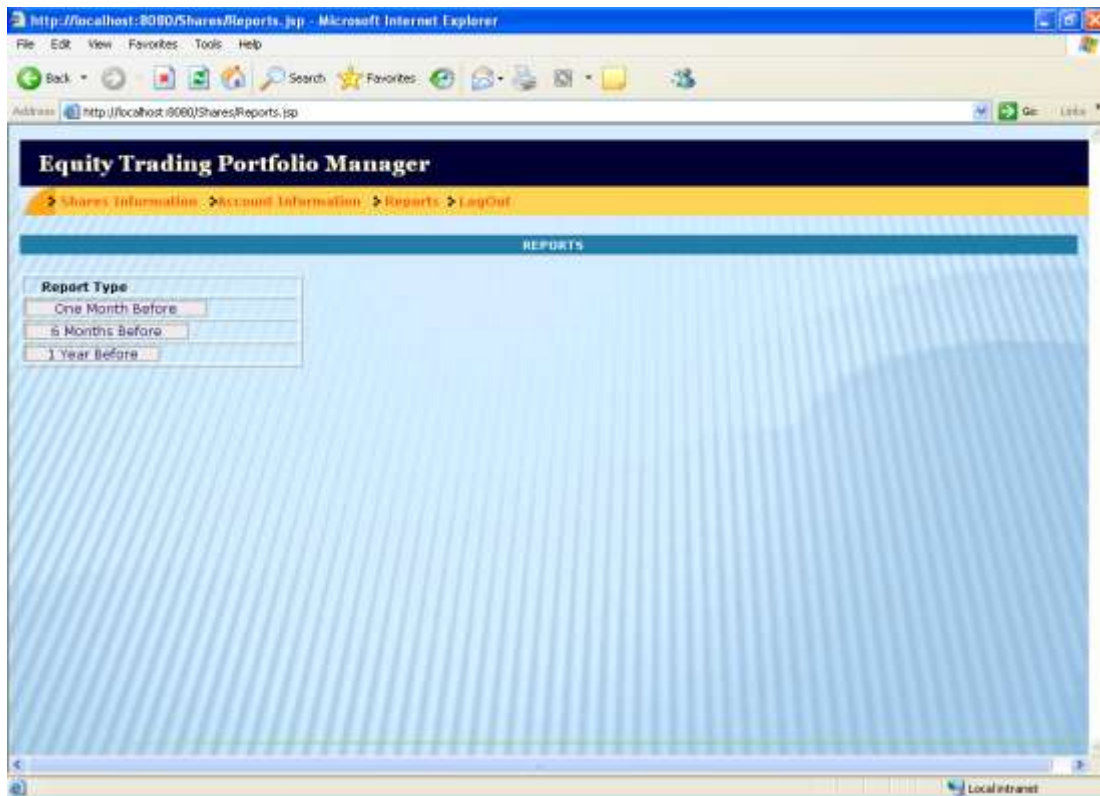
SELL SHARES



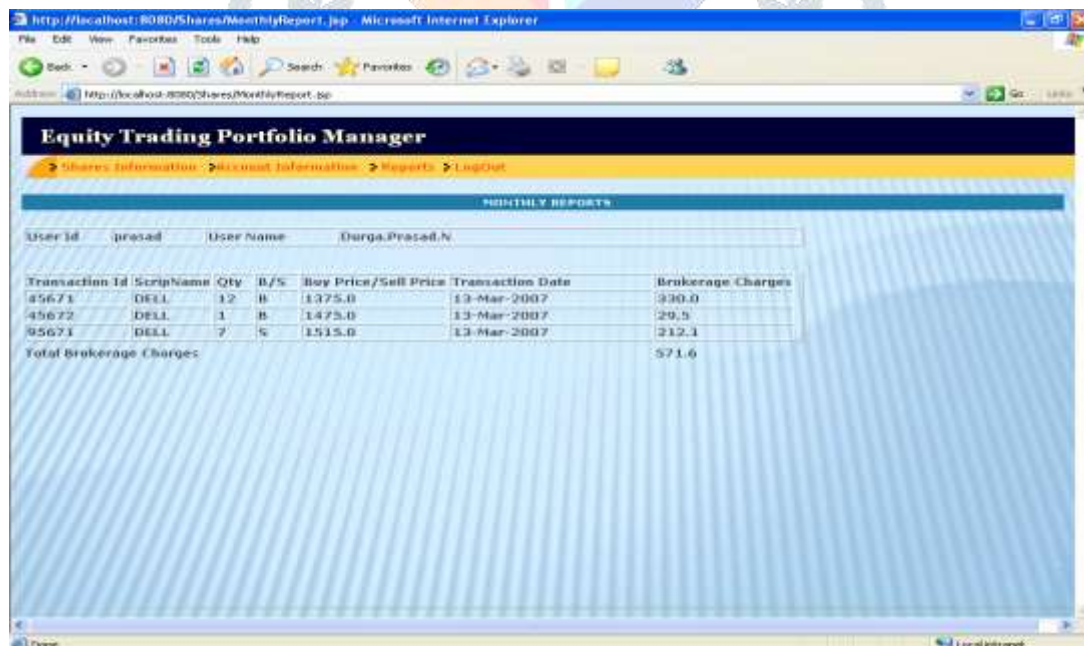
ACCOUNTS INFORMATION



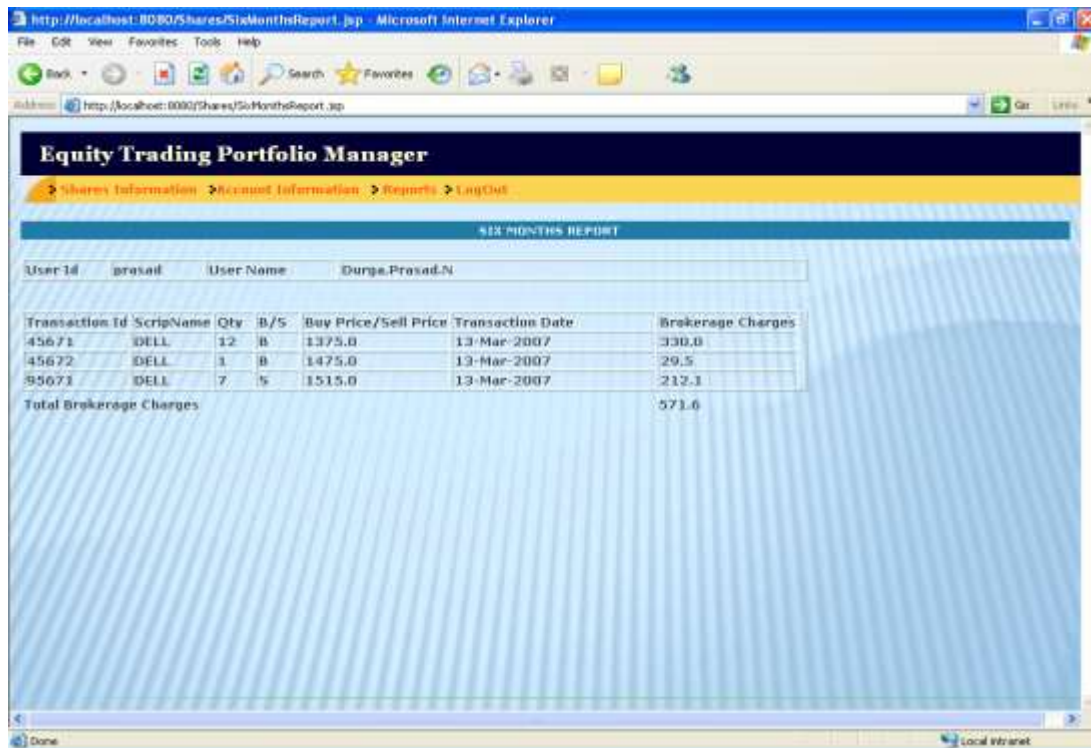
REPORTS



REPORTS FOR LAST ONE MONTH



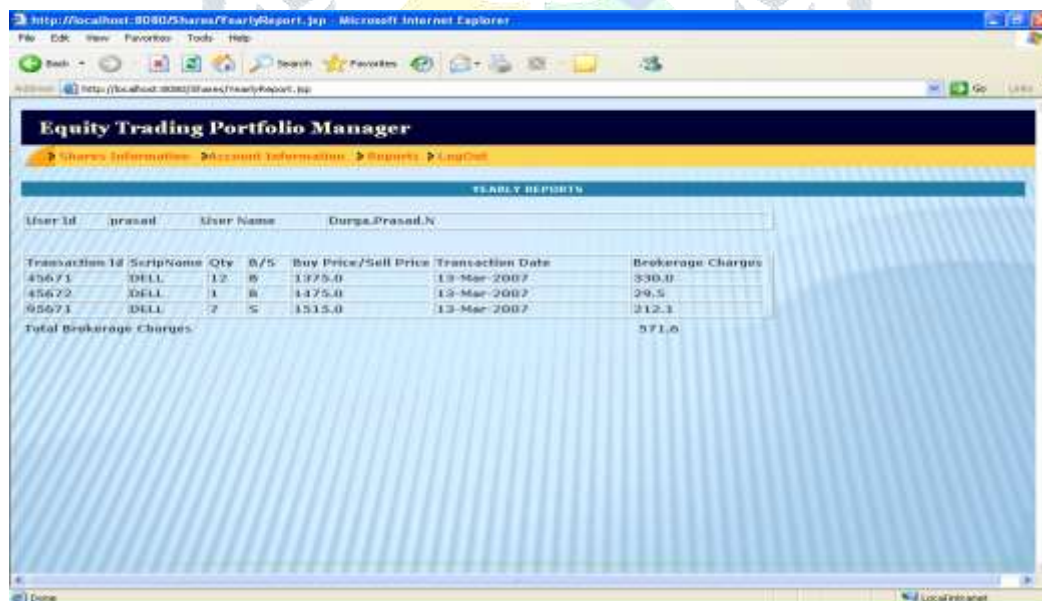
REPORTS FOR LAST SIX MONTHS



The screenshot shows a web browser window displaying the 'Equity Trading Portfolio Manager' interface. The page title is 'SIX MONTHS REPORT'. The user information is: User-Id: prasad, User Name: Durga.Prasad.N. The transaction table is as follows:

Transaction Id	ScriptName	Qty	B/S	Buy Price/Sell Price	Transaction Date	Brokerage Charges
45671	DELL	12	B	1375.0	13-Mar-2007	330.0
45672	DELL	1	B	1475.0	13-Mar-2007	29.5
85671	DELL	7	S	1515.0	13-Mar-2007	212.1
Total Brokerage Charges						571.6

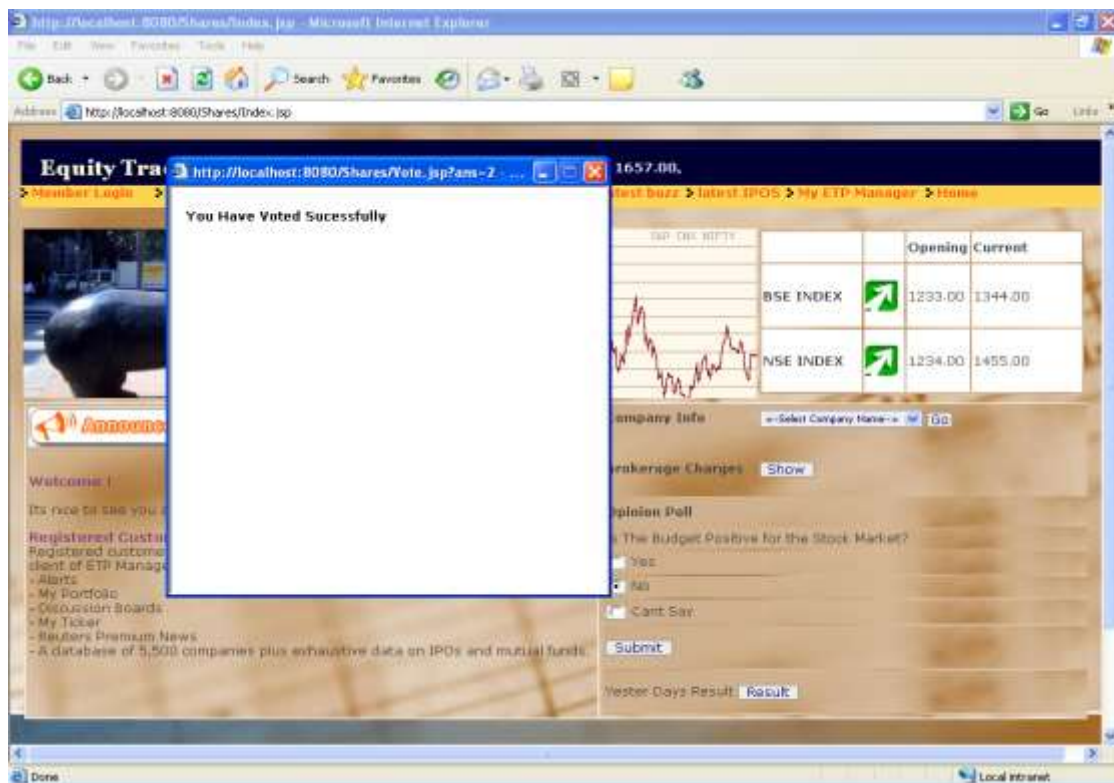
REPORTS FOR LAST ONE YEAR



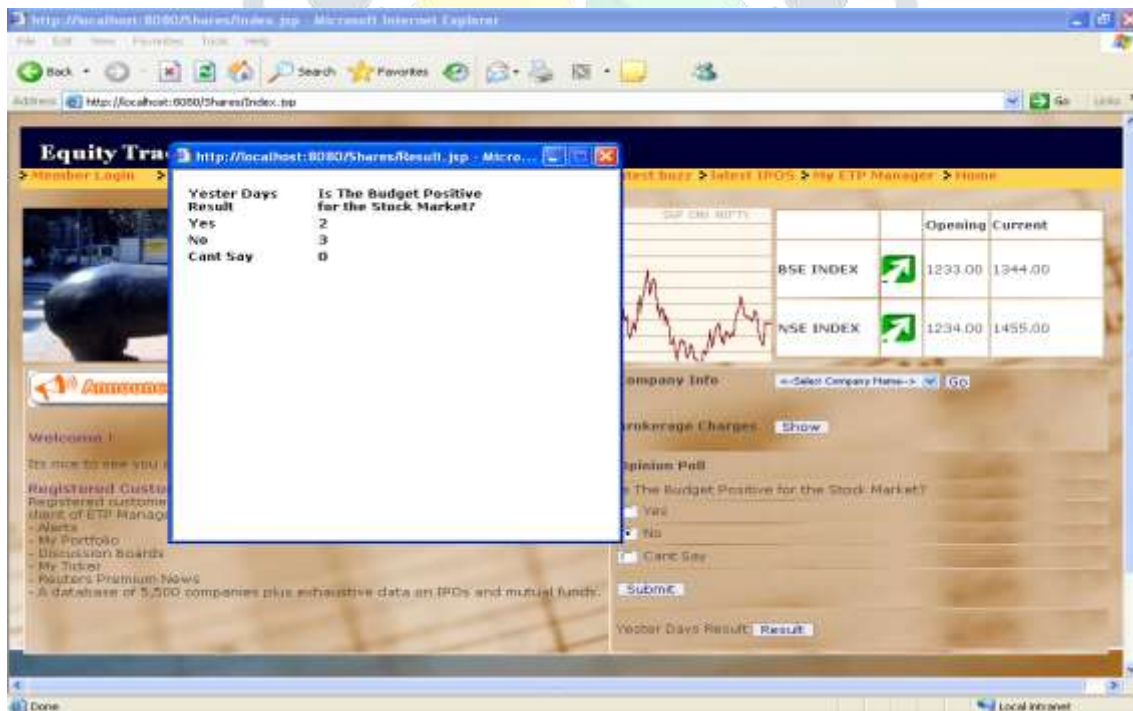
The screenshot shows a web browser window displaying the 'Equity Trading Portfolio Manager' interface. The page title is 'YEARLY REPORTS'. The user information is: User-Id: prasad, User Name: Durga.Prasad.N. The transaction table is as follows:

Transaction Id	ScriptName	Qty	B/S	Buy Price/Sell Price	Transaction Date	Brokerage Charges
45671	DELL	12	B	1375.0	13-Mar-2007	330.0
45672	DELL	1	B	1475.0	13-Mar-2007	29.5
85671	DELL	7	S	1515.0	13-Mar-2007	212.1
Total Brokerage Charges						571.6

OPINION POLL



VIEW RESULT



7. CONCLUSION

This software presents the part of an organization work as per the requirements, specifications and conditions mentioned in the user manual. This application s/w has been developed and completed successfully and also tests successfully by taking “Test Cases “.It is user friendly and has all the needed menu options , which can be utilized by the user to perform the desired operations .Moreover help messages are provided which will help any authorized user from using the system without trouble.

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