Abstract. A Stockbroker is a regulated professional individual, usually associated with a brokerage firm who buys and sells stocks and other securities for both retail and institutional clients, through a stock exchange or over the counter, in return for a fee. There is a cumbersome storage required to store paper files, the possibility of making mistakes in the manual storing of stocks, the risk of losing this files due to one reason or the other are some of the many limitations of a stock broker without one. The main objective of this research is therefore, to develop a web based application for stock brokers that will assist in keeping proper record of their client portfolio and help in avoiding mismanagement of their assets and also to allow clients to keep track of their transactions.

Keywords: stock broker, information systems, management.

INTRODUCTION
A Stockbroker is a regulated professional individual, usually associated with a brokerage firm or broker-dealer who buys and sells stocks and other securities for both retail and institutional clients, through a stock exchange or over the counter, in return for a fee or commission (Wikipedia, 2014). Stock Brokers are the professionals who execute the buying and selling orders of shares and securities given by the investors, who are their clients. The stock brokers have the latest and precise information about the bonds and stocks and their task is to find those people who will carry out the buying and selling transactions of the shares and the securities.

Stock Brokers work with a stock brokerage organization, while some others are independent. The challenge for every stock broker is to increase the number of client by providing them good service and proper guidance on investments in the stock market.

Portfolio is a collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives. The projects or programs of the portfolio may not necessarily be independent or directly related (PMI, 2006).

Portfolio management is the centralized management of one or more portfolios, which include identifying, prioritizing, authorizing, managing and controlling projects, program and other related work to achieve specific strategic business objectives (PMI, 2006). Stock portfolio management software is developed to help investors create impressive and successful portfolios. This type of software is used by new and existing investors. Successful investors also use portfolio management software as well. It facilitates users (i.e. investors to keep track of their stocks, etc.). It also allows clients to keep track of their transactions, shows performance of different stocks in their portfolios, provides security for their transactions, and alerts them to pre-defined levels of changes in stocks, without the use of any middlemen. A stock broker firm without one is naturally disadvantaged.

The aim of this research is, therefore, to develop a web based application for stock brokers that will assist in keeping proper record of their client portfolio and help in avoiding mismanagement of their assets and also keep an accurate record of individual transactions.

The specific objectives are to:

i. Design an interactive web based stock broker application that allows for updating of users’ transactions, and produces reports of the client portfolio.

ii. Create the web based stock broker application.

2.0 RELATED WORKS
2.1 Argo Trading Platform
Argo Trading Platform is a Broker-neutral multi-assets Trading Platform that combines order management and charting screens, algorithmic trading servers, market data distribution system and internal order matching facility.
The product details are as follows: the deployment is web based, it has 24/7 online support by a live representative, it was founded in 2004. The website is www.argocons.com.


The Advantage is the Ease of Implementation and the Disadvantage is the Ease of Use.

2.2 Cogency

Cogency Software is an industry leader in automated accounting and operations solutions for Multi-Manager Funds (FOHF, FoPE Funds, Pensions, and Endowments). Through extensive experience working with clients, Cogency Software has gained an intimate understanding of alternative investment operations and applies this industry insight to the creation of its integrated product suite which includes fund and partnership accounting, portfolio management, IRM and CR.

The product details are as follows: the deployment is web based, it has a 24/7 online support. It was founded in 2002 and Website: www.cogencysoft.com. It comes with built in features like Account Management, Benchmarking, Bonds, Fixed-Income Products, Equities, Multi-portfolio management, Risk management, Performance metrics, Fund management and Mutual fund.

2.3 Credit Point Software

Credit Point Software Solutions for Credit Risk and Collections Management, Supplier Risk Management, and Commercial Loan Management. Credit Point solutions features are nearly limitless configuration options, allows the client to achieve significant automation and workflow benefits, while still embracing your own expertise and experience. There is online support for the clients and it was founded in 2000. The website is www.creditpointsoftware.com.

It also has Features like Account Management, Benchmarking, Bonds, Equities, Fixed-Income Products, Fund Management, Multi-Portfolio Management, Mutual Funds, Performance Metrics, Risk Management and Stocks Management.

2.4 EfAdrin2

EfAdrin is a top-of-the-line Portfolio Management System for Hedge Funds, built to enhance the workflows of front, middle and back office, with a focus on customization and flexibility. The Website is www.efadrin.com, it was founded in 2003.


2.5 fi360 Toolkit

The fi360 Toolkit is a powerful, web-based software solution that provides the analytical, management, and reporting features needed to help investment professionals manage and document a prudent investment process. The turn-key fiduciary management system is easy to use, easy to replicate, and easy to understand. The fi360 Toolkit promotes compliance, empowers users with better information, and provides a differentiator that fosters better, stronger client relationship. The Deployment is Web Based, The Support is online based. The Website is www.fi360.com, it was Founded 1999.


3.1 SYSTEM ANALYSIS

The proposed system has a database that stores details of the Clients that log into the EASYPORT. Each user is required to register. Our EASYPORT is more like a Content Management System in terms of inconsequential assessment features. Other features would be expatiated later on in this chapter.

Features of the Proposed System

The interface has following:

i. The Home Page: it contains navigation links to other pages
ii. Administration Login Page: collects username and password for an admin user and grants access to the Admin page
iii. Register New Clients page: adds Clients to the database with the Client details
iv. View Clients page: displays a list of the information pertaining the clients
v. Manage Clients page: edits the information of the Clients.

vii. View Security page: displays a table of the staff and their information and generate report


ix. View Commissions page: displays a table of the student and their information and generate report.

x. Add New Commissions Page: Adds new commissions to the Commission’s Table in the database.

xi. Manage Commission’s Page: Edits the information about the commission.

3.2 Method of System Design

Systems are designed to improve collaboration between the teams working on a project, reducing potential risks and helping to ensure that the project is obtained on time. As a repository they adapt for all the documents, graphs and communications relating to some specific project and are used by all co-workers in a project to access, modify, print out, and edit matter according to authorizations set up by the project creator. Programmers often confuse the terms analysis and design. Determining where analysis ends and design begins is sometimes quite difficult. As analysis proceeds, design consideration keeps popping up, making it easy to get side-tracked into following up in depth on such issues. Dealing with design issues at a superficial level at this stage helps minimize the technical risks, but you must temper any time you schedule at risk. Like so many things in system development, a fine balance is essential. Based on the requirements and the detailed analysis of a new system, the new system must be designed. It is a most crucial phase in the development of a system.

Normally, the design proceeds in two stages:
1. Preliminary or general design
2. Structure or detailed design

In the preliminary or general design, the features of the new system are specified. The objective of the detailed design phases is to create a design that will correctly and completely implement the requirements. For the preliminary phase, the main goal is to map out how the web-based project management system will perform the functions specified in the requirements, within the defined interfaces, and the environment. At this phase, the designer needs to maintain a systems perspective and look at the system operations in concert with the rest of the operations. The objective of design assurance is to verify that the design does implement all the requirements, and that it implements nothing but the requirements. The main design activities for the preliminary design phase are:

1. Create the high-level design description.
2. Any derived requirements that result from the process are fed back to the requirements engineering process
3. Any omissions or errors are resolved
4. Include reliability, maintenance, and test features that are necessary to meet performance and quality requirements, and to ensure that testing can be performed to verify the requirements.
5. Identify constraints on other system elements that are a result of this high-level design

Analysis emphasizes an investigation of the problem and requirements, rather than a solution. For example, if a new online project management system is desired, how will it be used? What are its functions? Analysis is more a board term, best qualified, as in requirements analysis an investigation of the requirements. Design emphasizes a conceptual solution (in software and hardware) that full-fills the requirements, rather than its implementation. For example, a description of a database schema and software objects. Design ideas often exclude low-level details – obvious to the intended consumers. Ultimately, designs can be implemented, and the implementation (such as code) expresses the true and complete realized design. With analysis, the term is best qualified, as in database design. Useful analysis and design have been summarized in the phrase, do the right thing (analysis), and do the thing right (design).

4.0 SYSTEM DESIGN

Systems design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements.

4.1 Block Representation of the Proposed System

The system is composed of the web server, web browser and the database server, when a client makes a request, the web server takes the request act on it and gives a response back to the web browser immediately if the request does not demand any information from the database but if the request demands an information from the database, the request is forwarded to the database, the database sends a response back to the web server, the web server acts on it and returns a user understandable response to the web browser.
4.2 Use case Diagram
The use-case diagram is used to describe the requirement of each user on the system; it does not necessarily have to show the flow of events in a system. Use case diagrams are based on functionality and so it focuses on “what” a system will do rather than “how” the system will do it.

Figure 4.1 Generalized Block Representation

Figure 4.1 Stock broker Manage Security Use Case

Figure 4.2 Stock broker Manage Commission Use Case

Figure 4.3 admin Use Case
4.3 Entity Relationship Diagram (ERD)

An entity-relationship diagram is a data modeling technique that creates a graphical representation of the entities, and the relationship between entities, within an information system. There are three main components of an ERD, which includes: The entity which is the object of interest (For Example, the entity in this system is the job applicant, their details and the vacancy they applied for. It is represented by a rectangle and labeled with a singular noun.) The relationship is the interaction between the entities, and The Cardinality, which defines the relationship between the entities in terms of numbers (The three main cardinal relationship are ; one to one, expressed as 1:1; one to many expressed as 1:M ; and many to many expressed as M:M).

Figure 4.5: Entity Relationship Diagram
4.4 System Requirements
This describes the various requirements including software requirements, hardware requirements.

4.5 Hardware Requirement
Hardware refers to the physical components of a computer system which can be seen and touched. The hardware required to ensure the proper running of the package developed are as follows:

Minimum Hardware Requirements
Pentium-IV (Processor), 256 MB Ram, 512 KB Cache Memory, Hard disk of at least 10 GB and Microsoft Compatible 101 or more Keyboard

Recommended Hardware Requirements
A 64MB VGA card, At least 40GB Hard disk space, 1.3MHZ or any higher processor, An SVGA Color Monitor and A computer Printer

4.6 Software Requirements
The software requirements of the system are as follows.
Operating System : Windows Operating system (Vista and above), Web-Browser: Internet Explorer, Mozilla Firefox, Google Chrome, Opera and so on, My-SQL Database Version 5.05 or higher., PHP version 5.5 and Apache Server Version 2.0. Or higher.

4.8 User Requirements
The system requirement contains and describes what the clients want for a particular system. It is a structural document setting with detailed descriptions of the system services. Some of the system requirements are:

i. Clients will have to login to have access to the website.
ii. Administrators will have to login to access the website.
iii. All users will be able to log out.

4.9 System Requirements
This is a document written for students in natural languages. Some of the system requirements for this system are:

i. The system requires an internet ready computer
ii. The system will have a database to store all the information about the clients.
iii. The system must be secure
iv. The system must be efficient.
v. The system must be economic
vi. The system must be usable
vii. The system must be reliable
viii. The system must be easy to maintain.
ix. The system must track the transactions carefully

5.0 SELECTED SCREENSHOTS

Figure 5.1 Home Page
SUMMARY, CONCLUSION AND RECOMMENDATION

Stock Broker Portfolio Management System is very easy and convenient to use, particularly for stock brokers and also easy for the client to view their transactions which initiated the name, EasyPort. During the course of our research we realized that building The Stock Broker Portfolio Management System is a rigorous task.

The Stock Broker Portfolio Management System is very useful for any stockbroker because it would make it easier to manage more clients. Clients can also have access to View their Transactions and Portfolio. Every Stock Broker needs one. The clients can make or view their transactions even at the comfort of their home.

The Stock Broker Portfolio Management System (EasyPort) meets a lot of expectations but would perform better if the following recommendations and suggestions are considered:

i. System testing and maintenance should be performed regularly to avoid sudden system failures.
ii. Updates and other modifications should be introduced with prior notice to users.
iii. A system administrator should be employed that can manage the transactions and update the securities regularly and technicians. This will aid and ensure that proper support is provided for the system.

REFERENCES


