ABSTRACT

This project is an implementation of a personal investments-assistance system (PIAS) to serve as an on-line stocks research and education tutorial for novice investors or college students to learn basic investment management concepts. A Web interface is provided so that end users are able to access and manipulate the quotes and financial data of chosen stocks and trading companies. This allows them to analyze and evaluate their performance to make a rational estimation of future tendencies. The system provides functions and routines that support data management, Web interaction, and security.
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1. INTRODUCTION AND BACKGROUND

The stock market is risky and tempting. Prices surge up and plunge down. What has happened soon becomes history. Who knows what will happen in the future? That leaves a major problem for investors: How should one invest to get the most for the money? A research approach to investing emphasizes quantitative techniques more than descriptive ones, and the investment decision-making process tends to be based largely on mathematical models involving heavy computation.

Though some investors may have backgrounds in financial analysis and research through education, professional training, or daily practice, other investors find financial markets to be complex. To make sound decisions and wise choices, most of the time they must turn to experts, such as brokers, financial planners and investment advisors, to ask for professional advice or spend huge amounts of time doing research themselves. Both are quite costly to them in one way or another.

Fortunately the development of technology has made many aspects of this activity easier than before. This project makes training for investment decision-making an economical and efficient process for common investors by employing the latest information technology. This investment-assistance system is able to analyze and evaluate the financial performance of chosen stocks and trading companies. It allows students to get quotes and important financial data on stocks and companies they are interested in, and perform desired analysis and evaluation. As a result, investors can learn basic and necessary financial management concepts while using this system. Since this project is a tutorial for education purposes, it does not provide real-time stock quotes and current company data. This tool is
accessible on the Web and its functionality is appropriate for college students to facilitate their learning and research needs.

Since this Web application primarily involves client-server interaction, high performance was the biggest concern when choosing the development environment. Today, Web technology has grown to such an extent that there are often many programming languages and software products on the market that can accomplish the same objective. In the design of this project, Java was chosen as the programming language and servlets as the client-server communication interface. The advantages of Java and servlets architecture can help achieve the goal of high performance. Compared with the other commonly used CGI technologies, Java and servlets have very distinct and powerful features such as rapid development, fast execution, scalability, portability, security and integration with other applications through a network. However, since the system was developed on a non-commercial PC environment, PHP was used because of its opensource, low cost and efficient communication between the Web server and MySQL database. PHP is a server-side, cross-platform, HTML-embedded scripting language. It is impressive for its simplicity in syntax, extendibility in functionality, power, ease and dependability in creating data-driven Web applications. It achieved the mission of high performance and reliability for this project.
2. PERSONAL INVESTMENTS-ASSISTANCE SYSTEM

2.1 Overview

This project developed an online stocks-analysis tutorial system to assist and educate investors in their investment decision-making process. This system functions through a Web site that is accessible through most of the commonly used Web browsers that supports HTML 4 and JavaScript. However, Internet Explorer 4.0 and higher are recommended for the best screen result.

The system includes the following components:

- Introduction and Login pages,
- Home page,
- Quotes and data pages,
- Trading companies analysis pages,
- Financial calculator pages,
- Database administration pages,

Since database administration pages are only accessible to the system administrators, an investor’s view of the organization of the system’s components (Figure 1) is different from the system administrator’s (Figure 2).
Figure 1. Investor's View of System Organization

Figure 2. Administrator's View of the System Organization