Vision Document: Its the Economy Stupid

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1 Vision

The current economic crisis has frizzled, bamboozled, and completely bewildered the average investor. Let’s face it, when the market is swinging by three hundred points in a day, how can small time investors be expected to keep track of it all? These investors need real time information regarding breaking news and price indexes that directly relate to the market value of their investments. Furthermore, this information should be pertinent and useful so as to aid them in making the investment decisions that leave their investments safe and sound (unlike many unfortunate investors, see below). For the small time investor who needs to keep track of realtime market data, we envision a desktop, web integrated tool that allows a user to enter their investments in the form of stock ticker abbreviations, and will aggregate breaking news stories which reference these stocks and report them to the user in real time, as well as keep track of current market prices of all entered stocks, and notify the user when any notable changes occur in stock values. Unlike other similar online tools, our product will be entirely desktop based, making it easily accessible and seamlessly integrated into the user’s computing experience. Our aim is to produce a tool that is simultaneously robust, helpful, efficient, and simple.

An unfortunate investor.

2 Technical Requirements

This software will need to be accessible from any desktop computer that has an internet connection, and needs to feature web content integrated with the desktop so as to provide a seamless interface between the user and their stock data, without the need for a web browser intermediary. We believe that this will lead to the greatest usability.
The main technical components of the system will be:

1. User Data Input Interface
2. News Reader
3. Stock Ticker Display
4. RSS Feed Aggregator and News Search System
5. Stock Data Feed

We discuss each of these components in the following subsections (for a graphical overview of the architecture, see Section 5).

2.1 User Data Input Interface

This interface needs to allow the user to enter his or her pertinent stock information in the form of a list of stock symbols. It should be accessible from the main program screen via a visible button labelled “Edit Personal Information”. And should consist of a series of text items indicating what stocks are currently added, and an add and remove button to add or remove items from the list of stocks. (See use case diagrams for a more detailed explanation of this user interaction)

2.2 News Reader

The news reader interface should provide two separate displays. The main display, which the user will see by default, will present a truncated view of each news story consisting of the headline, the stock which is associated with the article, the date of the article, and the first line of text from the article, followed by an ellipses... Each of these items should reside in its own box, and the items should be ordered vertically on a scrolling interface. Clicking one of these items will open a new view in which the user may read the full contents of the article.

2.3 Stock Ticker Display

The stock ticker display should be available from two different parts of the interface. The most recent and/or pertinent stocks will be displayed on the user’s main view, to the right of the news stories, in a vertical format. Each ticker display will consist of the stock name, current price, last price, and price change. This text should be colored red or green to indicate a drop or rise in stock price so as to facilitate quick analysis by the user. Stocks on the main view should be chosen based on relevance to displayed articles, and by their total change (either positive or negative) in stock value during the last query. Finally, the interface should provide a view which will display the stock tickers for every stock in the users profile, ranked alphabetically.
2.4 RSS Feed Aggregator and News Search System

This system is the essence of the service that the software provides. It should be able to search popular news services for recent articles regarding particular stock information. The interface should be a queryable and should take a stock symbol as its input and return a set of news articles from predefined news sources which reference this stock symbol. Furthermore, these articles should be returned in order of date, from most recent to least recent.

2.5 Stock Data Feed

This system serves as the backend to the stock ticker display. It needs to be a queryable interface which will take in a stock ticker abbreviation (such as “AAPL”) and return the necessary data items for the stock ticker display, namely the stock name, current price, last price, and price change.

3 Technology Evaluation

Our technologies chosen fall directly in line with our vision. We chose our technologies from a list of all possibilities less any technologies used in the previous challenges of our class CS 4503: Senior Software Project I.

To satisfy these requirements, our group chose to use Adobe AIR as an interface. The advantage of this technology is that it brings Web 2.0 capabilities to the desktop. Adobe AIR can harness all the power of the web with dynamic features like updating. The only disadvantage found was the installation of the Adobe AIR platform installed on the target system. A user must install Adobe AIR, which is minimal, but is then able to quickly and easily install any Adobe AIR application.

For our information sources we chose to use Reuters and the Economist. Both of these companies have websites that implement RSS feeds. The advantage of RSS feeds is also their ability to dynamically update with the most recent posts. For this implementation, there were no significant disadvantages for use.

For our last information service, we chose to use the an online Stock WSDL interface to Yahoo! Finance, which implements the Web Service Definition Language (WSDL). This W3C standard makes it ideal for use considering its universal format. The only disadvantage for use was the learning curve, which should be very small.
5 Architecture Diagram

6 References

1. WSDL
   http://www.w3.org/TR/wsdl

2. The Economist
   http://www.economist.com/rss

3. Reuters
   http://www.reuters.com/tools/rss

4. Adobe Air
   http://www.adobe.com/devnet/air

5. Stock Webservice