Problem Statement

Since the stock market came to use, the businessmen became capable of buying shares of different companies and the investors are also available of purchasing the shares in seek of making a huge profits. Although the market can also provide these functions, nowadays it has a tendency that the use of seeking gain for normal investors is exceeding the use of seeking capital for businessmen. Since it is an age of high taxes and low wages, the trading stocks are therefore stand out as a viable and even effortless method of becoming rich in a very short time. Unfortunately, the fact is that the same volatility in the market can be used for profits, but at the same time, it could bring huge loss as well, even for some knowledgeable investors occasionally.

The following reasons would result such loses: the unawareness of the company’s business model, the difficulty of stock history visualization, the late acknowledgement of current company economic events and the most important is the lack of capability of stock’s future performance prediction.

First, three basic acknowledgement about the company are required: what does this company do,how does the company actually make profits and the company’s fundamentals. The company’s fundamentals gives us an opportunity to have a deep understanding about the company’s financial operation, including the balance sheet,governmental filings, investor reports, etc. It is not surprising that the individual investors are unaware of the company they are trying to invest in or they have a preconception of how well the company is doing and what they are best known for. The problem with this is, how will investors be able to know when to buy or sell a stock if they don't know exactly how the company is making money and if their assets will still be popular with consumers in the future? Investors are also recommend to know the financial stability of the company.

Second, the visualization of the stock history might be not easy to understand. Therefore, our predictor implements a linear regression graph of time versus price to serve as an easy way for the investors to understand. Since with the help of such graph, investors can view the rise and fall of the stock price. The prediction will be an extension from the current stock value on the graph and will help investors see how the stock will perform relative to the current and past values.

The biggest problem is the lack of capability of predicting. The stock market is changing from raising and falling all the time, which means the stock would go very high today and go down significantly next day. Neither the long-term nor short-term prediction is one hundred percent precise, but it is possible to minimize the mismatch. The three prediction methods mentioned before are all based on past data and stock performance and are highly mathematical. However, after retrieving the mathematical and logical research, when can you take the volatility and emotional aspects of buying and selling stocks into consideration? Our predictor could help the investors to make decisions by a generated forecast. On the other hand, our website will recommend what kind of prediction model we use to generate the prediction. This is a method of accountability and investors do not need to question where such numbers came from. By utilizing these predictions, it is up to the investors to choose whether they should buy, sell, or hold the stock.

Motivation:

For every day trading, these invisible risks are a main barrier which keep the new, inexperienced traders away from the market. The investor’s ranges from a young college student who wants to feed his own, to the old who might be saving money for his retirement. But certain percentage of these investors leave the market due to the insufficient time, founds and especially knowledge about the invisible world.

We want to make such unknown risks predictable even to those people who are foreign to the market or stock field, not only to the experts or professional investors. But in the other hand, we could learn from the long-term investors who utilize the entailed analyzing of the financial performance of many companies and choose the stocks that has the best growth potential. Since it is a long-term strategy, it may has little growth at the beginning and time consuming, but it is still superior to human errors.

Many investment advisors suggest to diverse the investment portfolio to minimize the risk of loss. As the old saying goes “leaving all of the eggs in one basket is not vise”. Thus, we should increase the diversity of investment. But how to implement such strategy? Basically there are 3 methods:fundamental analysis,technical analysis and technological methods. All these methods are based on the analysis of the past data which makes them extremely mathematical. However, after receiving all the mathematical data , when and how can you make a decision whether to buy or sell the stock? Our project gives the solution to this problem by a well designed stock predictor for individual investors. Our predictor is capable of searching the internet to collect various stock data and generate a forecast automatically.

GLOSSARY OF TERMS

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| One year High/Low | Highest and lowest prices of a stock that has been recorded at during the year. |
| Buy and Hold | The practice of buying a good for a long term rather than trying to turn a profit quickly. |
| Average Volume | The amount of stocks that traded over duration of time. |
| Closing Price | The price a particular stock closes at on a given trading day. |
| Dividend | A distribution of a portion of a company's earnings, decided by the board of directors, to a class of its shareholders. The dividend is most often quoted in terms of the dollar amount each share receives (dividends per share). It can also be quoted in terms of a percent of the current market price, referred to as dividend yield. |
| Earnings per Share (EPS) | The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's profitability. It  is calculated as (Net Income -Dividends on Preferred Stock) / divided by the Average Outstanding Shares |
| Forecast | A prediction of the future based on special knowledge |
| Fundamental Trading | Fundamentalists trade companies based on fundamental analysis, which examines things like corporate events such as actual or anticipated earnings reports, stock splits, reorganizations or acquisitions. |
| Individual | An investor who purchases relatively small lots of stocks for his own |
| Investor | portfolio. |
| Institutional Investor | An entity with large amounts to invest, such as investment companies, brokerages, and investment banks. Institutional investors are covered by fewer protective regulations because it is assumed that they are more knowledgeable and better able to protect themselves. Institutional investors are usually a group of people, rather than individuals. |
| Market Trend | The tendency of a financial market to move in a particular direction over time. Bull market refers to an upward trend, and a bear market refers to a downward trend. |
| Moving Average Prediction Model | A way to predict the future price of stocks based on the assumption of constant underlying mean of given prices |
| Opening Price | The price a stock starts off at a particular trading day. |
| Stock | A type of security that signifies ownership in a corporation and represents a claim on part of the corporation's Assets and earnings. |
| Stock Market | The marketplace for buyers and sellers of stocks. |
| Stock Symbol | A unique set of symbols that represent a particular company. Ex: GOOG is the stock symbol of Google. |
| Ticker | See Stock Symbol |
| Trading Day | The duration of time the stock market is open for buying and selling stock. Ex: For the New York Stock Exchange trading day is 9:30 AM Eastern Time to 4:00 PM Eastern Time, trading days never occur on weekends. |