# Modern Approach To Nyse

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**Abstract-** *The problem observed in NYSE (New York Stock Exchange) from the past 99 years is the restrictions on the pattern day trading rule.*

*The Financial Industry Regulatory Authority (FINRA)in the U.S established the "pattern Day Trader" rule, which states that if a stock-trading customer makes three day trades (opening and closing a stock position within the same day) in a five-day period, the customer is considered a "Day Trader" and must maintain a minimum account balance of $25,000.*

*The restriction leaves us with a dilemma to shortlist the right stocks at the right time in order to make maximum ROI (Return on Investment).*

*Another flaw noticed in the trading system is that day traders monitor false indicators leading to a loss of day trades.*

*The solution to these problems lies on careful monitoring of the right indicators which help understand the health of the stock, based on which stocks can be picked for day trading.*

*Keywords*- NYSE (New York Stock Exchange), PDT (Pattern Daye Trading).

## I. INTRODUCTION

**Purpose—**Online trading gives you an opportunity to make your own decisions, set your work hours, work from home, and make as much money as you want without the artificial cap placed on salaries.

However, beginner traders often have a hard time understanding how the market works. The information overload from Wall Street is more than enough to keep a beginner in a state of constant learning. As a result they never ever feel ready to take the plunge.

The purpose of our research is a vision to help individuals utilize the pattern day trading rule as efficiently as possible which will help achieve remarkable and guaranteed returns without the actual overhead of understanding how the market works and monitoring the stocks manually.

The time consumed and manual effort required in analyzing and monitoring large cap stocks also serves as motivation to help us develop a prediction system in the near future.

**Problem Statement—**The problem observes in NYSE from the past 99 years is the restrictions on pattern day trading rule. Utilizing the pattern day trading rule efficiently is not an easy task. It requires understanding how the market works, monitoring the stocks and studying the stocks for over months just to understand the health of the stock and to decide whether the stock is worth investing on. All of this has to be done manually or an individual simply has to depend on predicting systems which definitely is a tedious process.

Adding to which these traditional methods do not guarantee the desired and consistent returns.

## II. LITRATUREREVIEW

systems are proposed and developed using machine learning algorithms integrated with mathematics to predict the health of the stock. These systems output graphs depicting the stock`s health. Such systems depend on historical data of a stock to make a prediction. A large division of people depend on such systems to trade efficiently, of which most of them don't have any knowledge about the stock market or how the stock market functions. which makes them vulnerable to depend on only such systems.

Some people who have a little knowledge about how trading and stock market works use other platforms like stocktwits.com or yahoofinance.com etc.

To gain knowledge about the stock their interested in and to monitor its activity.

Stocktwits.com requires every individual interested in trading to have a brief conversation with trading experts via exchange of messages to gain knowledge of whether the stock is worth investing in. This reduces the overhead of manually

monitoring the stocks but does not guarantee efficient utilization of PDT.

Whereas yahoo finance is a website which provides all kinds of information pertaining to stocks ranging from current volume, average volume to their EPS (Earnings per share).

So an individual is eventually expected to follow all this information for about months to make a wise decision so as to not acquire any loss.

## III. SYSTEM OVERVIEW

Our research depends on the intersection of "Computer Science, Economics and Discrete Mathematics.
This unique intersection helped us propose and develop a system or platform that will help break the pattern day trading rule in the "New York Stock Exchange".
The proposed system also overcomes the "False Indicator" problem flawlessly.
It is developed using python IDLE and basic html.

The system is implemented to be real time, that is it will be active and running while the stock market is still open which will help an individual trade instantly.Which implies that the proposed system does not make any kind of predictions of the health of the stock based on its previous health or trading activity but provides current information of the health and trading activity of the stock.This feature helps prevent any kinds of loss that an individual might come across due to false predictions or a sudden downfall of the stock which can occur due to many reasons.

This system not only provides the user/individual with the list of stocks but also provides a brief overview on what NYSE and PDT is.

## IV. SCOPE

The system is developed using python IDLE and basic html to provide a simple user interface.

Based on a certain threshold of a stock indicator our system shortlists a number of stocks from a trading website called "Trading view". These stocks are then used as lookups on another website called "Yahoo Finance" to retrieve their corresponding volume data and important news that affects the health of the stock during each trading session.

All this information is made available to the user who is interested in efficiently using pattern day trading. He can then start trading.

The shortlisted stocks, their volume data and the news will be updated every 30 seconds by the system to help retrieve accurate information which will in turn affect the trading decisions, because each second is important while trading because a stocks health can go from excellent (ascending curve)to poor (descending curve)in seconds.

## V. OBJECTIVES

Our Research focuses on achieving the following objectives:

1. Developing a system that combines discrete mathematics, computer science and economics which would break the pattern day trading rule in the "New York Stock Exchange" (NYSE).
2. To simplify the understanding of how the trade market functions.
3. To overcome "False Indicator" problem immaculately.
4. To overcome the dependency on stock health predictions system.
5. To utilize pattern day trading rule as efficiently as possible.
6. To propose a system that will altogether put an end to the fear of losing capital or the fear of never being ready to trade and will provide guaranteed ROI.

## VI. EXPECTED RESULTS

The system is designed to display a text file on a website with all the information pertaining to the stocks that are shortlisted by the algorithm.

This important information will play a vital role in helping the user trade efficiently and to utilize the PDT wisely.

The system is also expected to update the contents in a regular interval of time to help prevent any false indication. This regular updating will help the user understand how volatile a stock can be which will in turn help the user in trading efficiently.

The proposed system focuses mainly on achieving two important results they are:

1. Efficient utilization of PDT.
2. Guaranteed ROI.

## VII. REQUIREMENTS

**Trading Account—**To conduct your stock trading activities you require a trading account. This is because when a company lists its shares in the stock market you can trade the same on an electronic system through a special account known as a trading account. You can get such an account by registering with a firm or a stock broker. With this account you are assigned a unique trading ID which grants you access to conduct trading transactions.

A trading account can hold securities, cash and other investment vehicles just like any other brokerage account. The term can describe a wide range of accounts, including tax-deferred retirement accounts. In general, however, a trading account is distinguished from other investment accounts by the level of activity, purpose of that activity and the risk it involves.

**Minimum Equity in The Account—**The rules adopt the term "pattern day trader," which includes any margin customer that day trades (buys then sells or sells short then buys the same security on the same day) four or more times in five business days, provided the number of day trades are more than six percent of the customer's total trading activity for that same five-day period. Under the rules, a pattern daytrader must maintainminimum equity of $25,000 on any day that the customer day trades. The required minimum equity must be in the account prior to any day-trading activities. If the account falls below the $25,000 requirement, the pattern day trader will not be permitted to day trade until the account is restored to the $25,000 minimum equity level.

The rules permit a pattern day trader to trade up to four times the maintenance margin excess in the account as of the close of business of the previous day. If a pattern day trader exceeds the day-trading buying power limitation, the firm will issue a day-trading margin call to the pattern day trader. The pattern day trader will then have, at most, five business days to deposit funds to meet this day-trading margin call. Until the margin call is met, the day-trading account will be restricted to day-trading buying power of only two times maintenance margin excess based on the customer's daily total trading commitment. If the day-trading margin call is not met by the fifth business day, the account will be further restricted to trading only on a cash available basis for 90 days or until the call is met.

In addition, the rules require that any funds used to meet the day-trading minimum equity requirement or to meet any day-trading margin calls remain in the pattern day trader's account for two business days following the close of business on any day when the deposit is required. The rules also prohibit the use of cross-guarantees to meet any of the day-trading margin requirements.
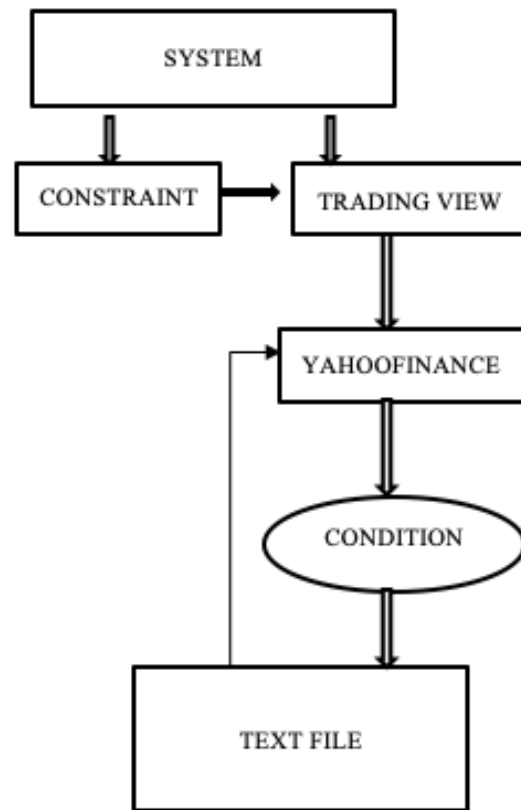
## VIII. SYSTEM DESIGN



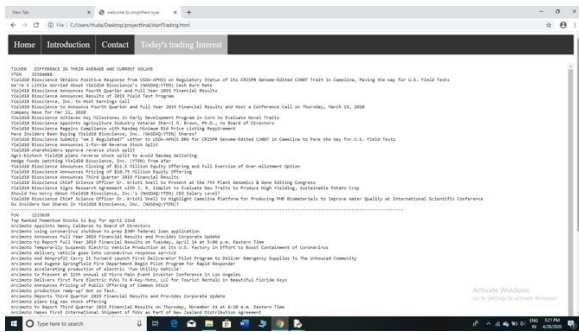Fig. 1 Block Diagram

## IX.RESULTS



Fig. 2 User Interface

Fig. 3 Result

## X. CONCLUSION

Our research provides a solution based on the intersection of 3 distinct sciences that overcomes the PDT and the "false indicator" problem flawlessly.

I hereby conclude that our major goal is to develop and deploy a time efficient platform that will help individuals trade efficiently, smartly and make maximum, consistent returns. This goal is immaculately achieved through the platform proposed by our acute research on trading and the distinct sciences that suggests a "MODERN APPROACH TO NYSE".

## RESOURCES

[1] Python
[2] Matlab
[3] Numerical methods for scientists and engineers by R W Hamming.
[4] Principles of financial stability by H W Zigeler.

## REFERENCES

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