An Interactive Qualifying Project Report: submitted to the Faculty of WORCESTER POLYTECHNIC INSTITUTE
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#### Abstract

This is a seven-week project on the stock market. A simulation was done to gain knowledge on stock trading, and to study and compare two specific strategies: Day Trading and Buy and Hold. Each strategy was applied to a $\$ 500,000$ simulated investment using real-time market prices. At the end of the project, the Day Trading strategy was proven to be more profitable, but also riskier. Most importantly, valuable real-life knowledge on the market and trading was acquired, which will be necessary for future investments.


## Acknowledgements

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## 1. Introduction

### 1.1 The Stock Market

Stock markets are a large part of any developed or developing economy today. The selling and buying of stocks create many jobs and moves money that would be put into different, fixed, forms of investment, such as government bonds. The initial entry of a company into the stock market also gives the company large funds for development and growth. This money is sometimes paid back in the form of dividends, which are monthly payments to stockholders.

The stock market is known for its high risk and its high rewards. Many investors have become millionaires in a very short time, but many more have gone bankrupt in an even shorter time. There have been a couple famous periods where the market crashed, that is when most, if not all, stocks fell drastically in price, and many investors saw their portfolio lose all its value. The most famous stock market crash was in 1929 and is taught in most history classes. A more recent crash, the "dot com crash", which is mentioned and explained later in Chapter 3.3, is barely mentioned outside of the investing world. Many people today praise the technology companies as the most successful investment in their lives, but those people forget that not too long ago countless "dot com" companies joined the market hoping to heap the same profits as Apple, Microsoft and others. Soon these companies went bankrupt and took many investors with them.

### 1.2 Goals and Methods

The main goal of this project is to gain experience in the stock market, for future investments or simply for increased knowledge in the field. Secondary goals include the comparison between two of the most used strategies: "Day Trading" (Also referred to as DT in
this project) and "Buy and Hold" (Also referred to as B\&H in this project). Finally, a short-term analysis of the overall market will be done to evaluate both methods against a standard. Day Trading is the method used by most investors looking for constant returns, it can vary from medium to high risk and returns. Buy and Hold is a long-term method with a lower risk and lower return. These methods were chosen due to the short duration of the project and the lack of a team, since the project was done during E term. The result will be a comparison between methods based on the same initial condition. To make the comparison easy and to give it a real meaning the initial condition will be a margin account starting at $\$ 500,000.00$ and a base interest rate of $8.00 \%$. This is not always a recommended approach to the stock market, as I will explain later, but it will give a real goal to achieve at the end of the project, making profit beyond the interest rate.

### 1.3 Stock Market Past and Present

The first activity that resembled brokers was recorded in $12^{\text {th }}$ century France. The "courretiers de change" were hired by banks to manage the debts of agricultural communities. The first place for gathering of commodity traders is believed to be the "Huis ter Beurze" inn in Bruges, Netherlands. The first stock market activity that can be compared to today's stock market was $17^{\text {th }}$ century Dutch East India Company, which issued bonds and shares of stocks to the public (Neal, 2005). This company was the first of which stocks found a market beyond the original sale. This was the first recording of trading between investors, without involving the bond-issuing company. Soon after other practices were born such as short selling (Petram, 2014), the strategy that bets on a stock's price fall and is banned in many markets today.

Today stock markets are found in every developed economy, and in most developing ones. With the advancement of technology and the appearance of online markets, new practices are
rising. The trading today is done by large brokers using advanced software, capable of buying and selling every time the stock varies by a few cents. This practice has made small trading much harder, as the people without the access to this technology lag in every trade.

Another recent scandal involving online markets was the use of fiber optics to beat a competitor's buy offer to the market. By sending an offer just above or below the most recent offer but beating it to the market using high-speed fiber optics a broker was able to stay one step ahead of his competitors, even though he made his offers after them.

The online market also has its good sides, as now it is much easier for small investors to get into trading. Although they are still shadowed by large brokers, they have many more opportunities than with physical markets. New investors also have the option to hire one of these large brokers to manage their portfolio, but this usually only happens with larger investments. Many banks are launching pages on their online banking system for clients to invest in the market. The stock markets are evolving each and every day, and there is no telling if small investors will have an easier time as technology advances or if they will become obsolete.

### 1.4 The Nasdaq Market and Indexes

## "We are relentlessly reimagining the world of tomorrow - one that is

 built on innovative technology, fueled by market-moving insights and driven by forward thinking. " (Nasdaq, 2019)Nasdaq was the world's first electronic stock market, launched in 1971. The launch of Nasdaq attracted the attention of many investors and changed the market, both in a good way and a bad way, as said in 1.3 above. In 1980 Apple launched its IPO on Nasdaq, making the market much more popular by hosting one of the most iconic IPOs in history. In 1985 Nasdaq launches
its first index, the Nasdaq-100. This index included the largest 100 non-financial companies listed on their market. Nasdaq did not stop growing from there, shortly after attracting new companies to its markets such as Amazon in 1997, at $\$ 18$ per share, and Google in 2004, at $\$ 85$ per share. Today Nasdaq has 40 offices around the world, and its US market counts with more than 4,000 companies. (Nasdaq, 2019)

This project will be based on the Nasdaq market due to the great mix of well-established companies and weekly IPO's of many different fields. The easy to use website was also a huge benefit to this project, as all data and graphs were taken from it. The website had a good layout for the tracked stocks, as well as an "Upcoming IPO's" tab, which was heavily used. If there was more time to be invested in this project the website would be a great help in finding and tracking more IPO's.

The most used Nasdaq Index has gone from Nasdaq-100 to Nasdaq Composite (IXIC). The Nasdaq Composite is a larger Index, with more than 3,000 companies, including the Nasdaq-100. The companies belonging to the Nasdaq-100, which are mostly tech giants including Alphabet (GOOG), Amazon (AMZN), Apple (AAPL), Microsoft (MSFT), and Netflix (NFLX), account for over $90 \%$ of the Composite movement. These companies have a constant volume of trades, and at a high share price they move billions of dollars every day.


Figure 1.1 Nasdaq Composite (IXIC) - 05/2019 to 09/2019

## 2. Methods and Definitions

### 2.1 Day Trading

Day Trading is one of the most used methods for medium risk and medium gains. It requires some amount of skill and speculation but can lead to large medium-term gains. Most day trading is based on medium sized companies, which can vary daily enough for a medium gain or loss. For Day trading in this project only the closing value of the stock will be used, unless in special cases, which will be noted when used. The buy/sell decision will be made based on daily stock price change and expected performance, as well as heavy speculation. I will be monitoring news from different companies as well as from current events. Most people believe they can predict the market using this information, I will test that. I will also use any speculative articles, and any other resource available to correctly guess the market.

Day trading can be based on two types of stocks: Medium-priced, and penny stocks. Penny stocks are the most profitable stocks for trading, as they can rise $100 \%$ on a single day. The opposite is also true, many penny stocks fall $100 \%$ on one day, going from a possible gold mine to a bankrupt company and a complete loss of investment. Medium-priced stocks offer a smaller, but still rather large, return at a much smaller risk. Stocks worth 20 to 100 dollars hardly go bankrupt overnight, but there are always exceptions. This strategy will be applied to mediumpriced stocks in this project, more specifically IPO's, defined later in this chapter.

### 2.2 Buy and Hold

Buy and Hold is the method used by investors who wish for small risk and guaranteed long-term gains. This method is applied mostly by inexperienced investors, as most of them leave
the portfolio untouched for many years. This method can also be used for long-term goals, such as a comfortable retirement or higher education for children. This method is based on large sized companies, which are known for their slow but sure stock price increase. This method is considered the safest investment in the stock market, it has the lowest risk, but also the lowest return. The companies will be chosen based on their record of slow steady growth. One obstacle to this method is the period chosen for the simulation. May is a known period for losses, there is a saying on the market: "Sell in May and go away". This will prove a challenge to this method and will require even more research into the chosen companies. Another obstacle is the short time I will be holding these stocks. Even the largest companies have their ups and downs, but over the years a steady grow is nearly guaranteed. This project only lasts seven weeks, which might not be enough for a recovery if the expected fall in price happens after the stocks are bought. This might also help me, if the fall happens just before the portfolio is bought.

### 2.3 Margin Account

Margin Accounts are offered to increase a customer's investing power. The account uses the firm's money and pays yearly interest, determined by the size of the account. Using a margin account can double the profits of an investor, as $50 \%$ of the account must be put up by the investor. But if the investor fails, he still needs to pay interest on the account. Margin Accounts also require larger returns to be profitable.

There have been many regulations put on margin accounts, mostly after the crash of 1929, when investors only had to put up $10 \%$ of the account, allowing for more dangerous trading, as if failed the investor would have to pay the $90 \%$ owned by the firm plus interest.

I will be using a Margin Account to determine if an investor would have profited with any of the methods investigated after paying interest. Thus, I will have two comparisons to make: between each method and the margin, and between methods. If either of the methods fails to pay interest it will be considered a failure. If both methods are successful in paying the interest, a comparison between methods will show the most effective one.

Most margin accounts have yearly interest rates, calculated based on a base rate and the size of the account. For a $\$ 500,00.00$ account most brokers offer base interest plus one to two percent. For the project I will use a value of $8 \%$ annually for 49 days, which gives a $1.07 \%$ total interest for the project. This is a rather small target for the time period, but margin accounts are still very dangerous to use if the investor is not experienced.

### 2.4 IPO's

In this project I will rely on recent IPO's (Initial Public Offering) for my Day Trade method. IPO's are the entry of a stock to the stock market. This project will focus on the many "trend" IPO's happening more and more every week. The newer generations have moved from physical stores to online stores, and start-ups are growing fast with new ideas and products to fit this new mindset. This project's IPO's include Beyond Meat, a vegan meat substitute company, Uber, a ride-share company, and Revolve, an online clothes store. Many studies have been done on past famous IPO's and they all come to a similar conclusion. IPO's are very volatile during their first days and usually fall on their first week or month to then rise at a relatively steady rate. This is only a general pattern, not an undeniable truth, but it is enough to make it worth the risk.

This risk is the whole basis of Day Trading and will provide a good view into the trading done by most investors. Using the very volatile entry of a stock on the market I will be able to
trade more frequently and profitably. Usually investors hold stocks for a couple weeks, waiting for the right moment to trade, either by an unusual drop or rise. With IPO's these drops and rises happen every week, making the whole process faster and help create a more accurate simulation in a shorter time. As the stock enters the market with the price put by the company the market quickly adjusts its price to what investors believe it should be. With new stocks this price is not yet fully settled, as different investors believe in different futures for the stock, and without a price history to base it on the price bounces up and down until the investors agree.

Buy and Hold will not use IPO's as there is too much risk to hold an IPO for a medium amount of time. A real B\&H portfolio would hold the stocks for months or even years, this project only lasts 7 weeks. A long-term hold of an IPO is not common but could be profitable if the right IPO's are chosen. For a medium-term project, IPO's are too unstable to guarantee a profit in a B\&H strategy.

## 3. Simulation 1: Day Trading

### 3.1 Companies Chosen

Uber - UBER

Uber is the leading company in ride share and is present all around the world. Uber entered the market recently and was one of the most expected IPO's this year. The company keeps growing worldwide, replacing the common taxi in many places. Being familiar with their product and the growing field of ride share, the market has high hopes for this IPO. Uber is the leading company in its field, and the first IPO of the field. With such a growing field and high expectations and hopes for the company, this IPO will be a success. From the company's SEC filing:
"Our mission is to ignite opportunity by setting the world in motion. We believe deeply in our bold mission. Every minute of every day, consumers and Drivers on our platform can tap a button and get a ride or tap a button and get work. We revolutionized personal mobility with Ridesharing, and we are leveraging our platform to redefine the massive meal delivery and logistics industries." (SEC, 2019)


Figure 3.1 UBER value - 5/13/19 to 6/9/19

## Beyond - BYND

Beyond Meat is one of the leading companies in meat replacements production. In such a new and fast-growing field, any company is bound to have a success with investors. Many people are moving away from meat, whether because of ethics, health or to help with climate change, and the investors know this field, and more specifically this company, will only grow from now on. With new clients and partnerships every day, BYND is set to be the best IPO this year. Unfortunately, the project started a few days after the IPO, and the initial price was not taken advantage of. From the company's SEC filing:
"Beyond Meat is one of the fastest growing food companies in the United States, offering a portfolio of revolutionary plant-based meats. We build meat directly from plants, an innovation that enables consumers to experience the taste, texture and other sensory attributes of popular animal-based meat products while enjoying the nutritional benefits of eating our plant-based meat
products. Our brand commitment, "Eat What You Love," represents a strong belief that by eating our plant-based meats, consumers can enjoy more, not less, of their favorite meals, and by doing so, help to address concerns related to human health, climate change, resource conservation and animal welfare. The success of our breakthrough innovation model and products has allowed us to appeal to a broad range of consumers, including those who typically eat animal-based meats, positioning us to compete directly in the $\$ 1.4$ trillion global meat industry." (SEC, 2019)


Figure 3.2 BYND value - 5/8/19 to 6/9/19

Boeing - BA

Boeing is one of the two leading commercial aircraft manufacturers in the world. Boeing's 737-MAX was recently involved in two accidents, dropping the stock price. This is a very temporary drop and can lead to good gains in the short future. Many investors predict that BA will bounce back and continue to rise in the following weeks. Such a large and established company, it can be considered a high-quality blue-chip stock, is bound to have a constant, slow rise. After
such a large drop it is almost certain that an almost as fast rise will happen to the value before the drop and further. The high price of the stock can also serve as a safety net for the portfolio. From the company's SEC Filing:
"The Boeing Company, together with its subsidiaries [...], is one of the world's major aerospace firms. We are organized based on the products and services we offer. We operate in four reportable segments: [...] Commercial Airplanes Segment[.] This segment develops, produces and markets commercial jet aircraft and provides fleet support services, principally to the commercial airline industry worldwide. We are a leading producer of commercial aircraft and offer a family of commercial jetliners designed to meet a broad spectrum of global passenger and cargo requirements of airlines." (SEC, 2018)


Figure 3.3 BA value - 5/8/19 to 6/9/19

Coca-Cola Consolidated - COKE:

One of the main Coca-Cola distributors has brought a lot of attention on itself recently but will not be a major player in this project. This company was a larger bet among this trading strategy, as it was shown a few days later in the graph below. The high stock price did not help, and the stock stabilized shortly after the rise. From the company's SEC Filing:
"Coca-Cola Consolidated, Inc. [...], distributes, markets and manufactures nonalcoholic beverages in territories spanning 14 states and the District of Columbia. The Company was incorporated in 1980 and, together with its predecessors, has been in the nonalcoholic beverage manufacturing and distribution business since 1902. We are the largest Coca-Cola bottler in the United States. Approximately 88\% of our total bottle/can sales volume to retail customers consists of products of The Coca-Cola Company, which include some of the most recognized and popular beverage brands in the world." (SEC, 2018)


Figure 3.4 COKE value - 5/8/19 to 6/9/19

Revolve - RVLV:

Another recent IPO, this one happened during the project on $06 / 07$. Revolve is another "trend" company entering the market. Revolve is an online clothes retailer, and in today's market "online" is usually a safe bet for gains. Revolve's IPO did not get as much attention as Uber or Beyond, but as I monitored the "Upcoming IPO's" I felt a rather personal connection to this one. Young people today, including myself, are buying everything online, and one of the most timeconsuming shopping is for clothes. That is why I believe in this IPO. From the Company's SEC filing:
"REVOLVE is the next-generation fashion retailer for Millennial and Generation Z consumers. As a trusted, premium lifestyle brand, and a go-to online source for discovery and inspiration, we deliver an engaging customer experience from a vast yet curated offering totaling over 45,000 apparel, footwear, accessories and beauty styles. Our dynamic platform connects a deeply engaged community of millions of consumers, thousands of global fashion influencers, and more than 500 emerging, established and owned brands. Through 16 years of continued investment in technology, data analytics, and innovative marketing and merchandising strategies, we have built a powerful platform and brand that we believe is connecting with the next generation of consumers and is redefining fashion retail for the 21 st century" (SEC, 2019)


Figure 3.5 RVLV value - 6/10/19 to 6/28/19

### 3.2 Trading

The simulation will be done using real data gathered from the Nasdaq website. To keep track of all transactions, an excel file will be used. The use of a simulation software was considered but not used to keep the simulation simpler and to keep an easy track of all transactions in a familiar method. Using a new software would introduce a new learning curve, as well as a dependency on it to work perfectly for the whole project. I am very familiar with using Excel, so no learning will be required for this part of the project, which will allow my focus to stay on the main goal.

The trading will be done mostly at the end of each day using its closing value. This is not the most accurate simulation but is the only option due to the project being done during the summer and factors such as summer job and family vacations being the deciding influence on my time availability. These constraints will make my decisions a little harder, as I will be betting on the closing value of next day or week, and not its peak or trough.

The initial purchase was made on Sunday (05/26) using Friday's closing value. Although this is not realistic it is the best way to start the project, as profit can be made on the first day if necessary.

| Date | Symbol | buy/ <br> Sell | Price | Shares | Net Cost/ <br> Proceeds | Profit// <br> Loss | Total <br> Cash | Total <br> Profit |
| :---: | :--- | :--- | ---: | ---: | ---: | :--- | :--- | :--- |
| $5 / 26 / 2019$ |  |  |  |  |  |  | 500000 |  |
| $5 / 26 / 2019$ | BA | buy | 354.88 | 500 | -177440 |  | 322560 |  |
| $5 / 26 / 2019$ | BYND | buy | 79.67 | 1000 | -79670 |  | 242890 |  |
| $5 / 26 / 2019$ | UBER | buy | 41.51 | 1000 | -41510 |  | 201380 |  |
| $5 / 26 / 2019$ | COKE | buy | 307.34 | 600 | -184404 |  | 16976 |  |

Table 3.1 Initial DT Purchase

### 3.2.1 Week 1

Week one was marked by BYND's incredible rise, $30 \%$ from the first buy, and almost $100 \%$ since its IPO. UBER, COKE and BA underperformed; they will require close monitoring to return profit. I have decided to sell most of my BYND stock, a new stock will be chosen later into week two. No more BYND stock was bought during the week, as its current rise was always hinting a fall, which still hasn't arrived. Additional UBER stocks were bought along the week expecting a rise early in week two. BA will rely heavily on the accident investigation; this stock is proving riskier than thought before. COKE stock seems to have died after its unusual spike; all COKE stocks were sold at the end of week one.


Figure 3.6 BYND Week One Graph

BYND had a great week, this IPO has great potential, but should be approached carefully.


Figure 3.7 BA Week One Graph

BA continued to fall, as investigations are not yet resolved, a rise is expected as soon as they conclude.


Figure 3.8 COKE Week One Graph

COKE did not perform as expected.


Figure 3.9 UBER Week One Graph

UBER lost value, but the hope for a rise next week resulted in more stocks being bought.

| Date | Symbol | buy/ <br> Sell | Price | Shares | Net Cost// <br> Proceeds | Profit// <br> Loss | Total <br> Cash | Total <br> Profit |
| :---: | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| $5 / 28 / 2019$ | UBER | buy | 40.95 | 200 | -8190 |  | 8786 |  |
| $5 / 30 / 2019$ | COKE | sell | 311.73 | 600 | 187038 | 2634 | 195824 | 2634 |
| $5 / 30 / 2019$ | UBER | buy | 39.08 | 500 | -19540 |  | 176284 |  |
| $5 / 31 / 2019$ | BYND | sell | 104.12 | 500 | 52060 | 12225 | 228344 | 14859 |
| $5 / 31 / 2019$ | BA | buy | 341.63 | 500 | -170815 |  | 57529 |  |

Table 3.2 DT Week One Trading - 5/26/19 to 5/31/19

### 3.2.2 Week 2

Week two was marked by two major points: The complete sale of all BA stocks and the continued rise of BYND stocks. All BA stocks were sold at a nearly break-even value as I realized that having them as a safety was the opposite of what this simulation was supposed to be. Next weeks will be marked by more aggressive and targeted trading, with only one company being traded each week. Both BYND and UBER stocks were completely sold. I believe UBER will not keep rising as steadily, and BYND has grown too fast to stay at this value, the risk of a sudden, devastating drop rises exponentially each day that passes. I decided to keep my gains and play safer. New stocks will be chosen as week three goes by.


Figure 3.10 BYND Week Two Graph

BYND had an amazing rise at the end of the week. Such rises are usually followed by a fall of at least the same magnitude.


Figure 3.11 BA Week Two Graph

BA stock rose but were fully sold as it did not match my strategy.


Figure 3.12 UBER Week Two Graph

UBER's expected rise for the week happened and was taken advantage of.

| Date | Symbol | buy/ | Price | Shares | Net Cost/ | Profit/ | Total | Total |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
|  |  | Sell |  |  | Proceeds | Loss | Cash | Profit |
| $6 / 3 / 2019$ | BYND | buy | 96.16 | 500 | -48080 |  | 9449 |  |
| $6 / 4 / 2019$ | BA | sell | 350.64 | 1000 | 350640 | 2385 | 360089 | 17244 |
| $6 / 4 / 2019$ | BYND | buy | 103.41 | 1000 | -103410 |  | 256679 |  |
| $6 / 5 / 2019$ | BYND | buy | 102.6 | 1000 | -102600 |  | 154079 |  |
| $6 / 6 / 2019$ | UBER | sell | 44.92 | 1000 | 44920 | 4190.59 | 198999 | 21434.59 |
| $6 / 6 / 2019$ | BYND | buy | 99.5 | 1000 | -99500 |  | 99499 |  |
| $6 / 7 / 2019$ | UBER | sell | 44.16 | 700 | 30912 | 2401.41 | 130411 | 23836 |
| $6 / 7 / 2019$ | BYND | sell | 138.65 | 4000 | 554600 | 161175 | 685011 | 185011 |

Table 3.3 DT Week Two Trading - 6/3/19 to 6/7/19

### 3.2.3 Week 3

This week was slow on trading due to personal reasons, so no new stocks were chosen, but that did not stop BYND from continuing its rise. Last week I decided to sell all BYND stocks, due to the incoming fall that had been speculated since its phenomenal IPO. This Monday BYND rose
another $21 \%$, I considered buying during the whole day, to ride on the rising price, but decided to keep watching and waiting for the fall. This Tuesday BYND fell $25 \%$, it was time to buy again, I went all-in and left only $\$ 4395$ on bank, the reason being only to have a round number of stocks for easier tracking and trading. My bet worked out as the stock rose $20 \%$ during the week. I sold BYND twice, once on Wednesday, for a quick return, and once on Friday, to prepare for next week's probable drop.


Figure 3.13 BYND Week Three Graph

BYND's predicted drop happened on the first day and continued up until the half of the second day. This fall was used for profits, as it was clear the stock would rise for the rest of the week.

| Date | Symbol |  |  |  |  |  |  |  |
| :---: | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
|  | Sell | Price | Shares | Net Cost/ | Profit/ | Total | Total |  |
| Proceeds | Loss | Cash | Profit |  |  |  |  |  |
| $6 / 11 / 2019$ | BYND | buy | 126.04 | 5400 | -680616 |  | 4395 |  |
| $6 / 12 / 2019$ | BYND | sell | 141.97 | 2700 | 383319 | 39825 | 387714 | 228022 |
| $6 / 14 / 2019$ | BYND | sell | 151.48 | 2700 | 408996 | 63600 | 796710 | 296710 |

Table 3.4 DT Week Three Trading - 6/10/19 to 6/14/19

### 3.2.4 Week 4

This week I decided to invest on Revolve (RVLV), a recent IPO with a good first few days and an expected continued increase. I sold RVLV stocks twice, once for a quick return and then on Friday, at a small loss, to prepare for the inevitable Monday drop. This week was also marked by the rise in the BA stock that I predicted in the beginning of the project. Even though a little disappointed I did not keep any BA stock, its high price was keeping me from the purpose of this strategy, nearly daily trading of medium-priced stocks. Next week I will trade with familiar stocks as the project is approaching its end and my profit is already much higher than the margin account interest.


Figure 3.14 RVLV Week Four Graph

RVLV was a quick bet and generated some profit on the middle of the week. The loss at the end of the week was a damage control sell and did not outweigh the gains

| Date | Symbol | buy/ <br> Sell | Price | Shares | Net Cost/ <br> Proceeds | Profit/ <br> Loss | Total <br> Cash | Total <br> Profit |
| :---: | :--- | :--- | ---: | ---: | ---: | ---: | ---: | :---: |
| $6 / 17 / 2019$ | RVLV | buy | 40.87 | 16000 | -653920 |  | 142790 |  |
| $6 / 19 / 2019$ | RVLV | sell | 46.96 | 8000 | 375680 | 48720 | 518470 | 345430 |
| $6 / 21 / 2019$ | RVLV | sell | 38.75 | 8000 | 310080 | -16680 | 828550 | 328750 |

Table 3.5 DT Week Four Trading - 6/17/19 to 6/21/19

### 3.2.5 Week 5

This week I returned to trading BYND stock, as it was my main source of profit so far. I bought it too early on the week, so the first day was a loss, but instead of panicking and selling I bought more, as I knew that drop was usual of BYND and it would come back. As I predicted I closed the week with some profit, although it could have been more if I did not buy it on Monday. The buying of more stock after the drop guaranteed a profit even if the stock only returned to the
price of the first purchase. This is something many unexperienced investors fail to realize and end up selling at a loss fearing further losses. This being a simulation and not real, this decision is easier to make, but any experienced investor would do the same.


Figure 3.15 BYND Week Five Graph

BYND's value increased substantially for this week, with only a small drop at the last day and a half.

| Date | Symbol | buy/ <br> Sell | Price | Shares | Net Cost/ <br> Proceeds | Profit/ <br> Loss | Total <br> Cash | Total <br> Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6/24/2019 | BYND | buy | 154.13 | 4000 | -616520 |  | 212030 |  |
| 6/25/2019 | BYND | buy | 140.99 | 1000 | -140990 |  | 71040 |  |
| 6/26/2019 | BYND | sell | 160.48 | 2500 | 401200 | 22445 | 472240 | 351195 |
| 6/28/2019 | BYND | sell | 160.68 | 2500 | 401700 | 22945 | 873940 | 374140 |

Table 3.6 DT Week Five Trading - 6/24/19 to 6/28/19

### 3.2.6 Week 6

This week was very slow for trading, I waited until Tuesday to buy BYND, learning from last week, and the market was closed for the $4^{\text {th }}$ of July. Not only that, BYND had a very slow week compared to its history. It seems that BYND has finally arrived at a relatively stable price, which most established stocks float around when no outside events affect them.


Figure 3.16 BYND Week Six Graph

BYND's reliable early week drop happened this week, and as the weeks before it was used for a good profit at the end of the week.

| Date | Symbol | buy/ <br> Sell | Price | Shares | Net Cost/ <br> Proceeds | Profit/ | Toss | Total |
| :---: | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Cash | Total |  |  |  |  |  |  |  |
| Profit |  |  |  |  |  |  |  |  |
| $7 / 2 / 2019$ | BYND | buy | 149.71 | 5800 | -868318 |  | 5622 |  |
| $7 / 5 / 2019$ | BYND | sell | 152.63 | 5800 | 885254 | 16936 | 890876 | 391076 |

Table 3.7 DT Week Six Trading - 7/1/19 to 7/5/19

### 3.2.7 Week 7

For the final week of trading was of BYND stock again, I would not move away from my best stock. I bought on Monday and sold on Thursday and Friday as usual. I should have sold it all on Thursday for the largest gain but was hoping for a continued increase on Friday, which did not happen. I ended the week with a solid profit to end the project.


Figure 3.17 BYND Week Seven Graph

BYND did not fall, or rise much, at the beginning of the week, so stocks were bought a day earlier than usual, the fall at the last day and a half cut the profits considerably.

| Date | Symbol | buy/ <br> Sell | Price | Shares | Net Cost/ <br> Proceeds | Profit/ <br> Loss | Total <br> Cash | Total <br> Profit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 7/9/2019 | BYND | buy | 157.82 | 5600 | -883792 |  | 7084 |  |
| 7/11/2019 | BYND | sell | 174.2 | 2800 | 487760 | 45864 | 494844 | 436940 |
| 7/12/2019 | BYND | sell | 166.26 | 2800 | 465528 | 23632 | 960372 | 460572 |

Table 3.8 DT Week Seven Trading - 7/8/19 to 7/12/19

### 3.3 Final Results

The Daily Trading strategy ended with an amazing profit of $92 \%$, or $\$ 460572$, all thanks to BYND's impressive first few months on the stock market. Since its IPO in May, BYND has impressed many investors, rising over $300 \%$ in under two months and just over $100 \%$ during the project. Other stocks such as UBER and RVLV played smaller roles on the project but were very promising for continued trading. Stocks such as BA and COKE were one-time deals that did not fit the strategy but could be valuable stocks, especially BA. This strategy proved to be much superior than Buy and Hold, even if BYND did not have such good couple months. This strategy has a pretty low risk if used wisely, and the returns can be medium or high. The largest risk was when BYND fell $30 \%$ in one day, but that was expected and avoided. Inexperienced investors might not have seen the drop coming and might even have done the most common mistake in trading: selling at a low point to cut losses. BYND quickly recovered from that drop, and experienced investors used the situation, and other investors' fear, for large profits.

This strategy could have been much more successful with even more frequent trades, but due to the nature of the project I decided to keep it to only a few trades per week. With more than
one buy and sell cycle per day every small drop and rise can be taken advantage of. With IPO's this is even more evident as their daily variation is higher than more established stocks. Stocks such as BYND and UBER were highly expected IPO's as they are the first of their field to go public and enter the market. This has investors both hopeful and fearful for their future, as different investors predict different results for these stocks. BYND has relied heavily on their recent deals, and rumored deals, with famous restaurants, including McDonalds. Many investors claim that once this trend of new deals ends the stock price will fall to match the company's performance, and not expected growth, as is the case for more established stocks and blue-chip stocks.

The IPO of BYND could not have been done at a better time, the "hype" about the company, which was already high and is only increasing, has contributed greatly to its stock price. BYND has also recently made deals with many famous food chains, which is a huge sign of incoming profit in a very near future. UBER however, had a terrible timing for its IPO, the "hype" on the company is no longer the same as when the app was launched, and to top it off there was a general strike scheduled very close to its IPO, which killed any "hype" left. The 2000's "dot com" fever thought us that "hype" is not all it takes to have a successful business. Countless "dot com" companies entered the market in a short time, many of them were in severe debt and without any profits or plan to pay it. These companies entered the market based only on the idea of what the company might be one day, and the belief in the exponential growth of the field, and therefore of any company in it. These ideas and beliefs soon lost to numbers and those companies left the market as quick as they entered, taking all their investors with them to the bottom of the pit. BYND seems to be heading in the same direction. There must be a great increase in the company's value, which can be done with all the new deals being made. If the company fails to impress the investors the bubble will burst. UBER however, had a smaller IPO, and a much slower increase. This might
seem bad at the start, but in the medium run it will serve as a solid base for the stock price, and in the long run it will have proved worth it to start slow and steady.


Figure 3.18 BYND Whole project Graph

There have been other IPO's these past months, most notably Slack (WORK) and Chewy (CHWY). Both IPO's were as expected as UBER and BYND but severely underperformed, going even lower than the starting price, which means the market values the company lower than the company values itself. Both stocks are pioneers on their field, with Slack being present in many workplaces and Chewy being the first online pet store to go public. These stocks prove the instability of IPO's and their increased risk. Both IPO's were considered for the project, but their underwhelming start compared to the IPO's already on the portfolio made me choose not to invest in them.

## 4. Simulation 2: Buy and Hold

### 4.1 Companies Chosen

All companies were chosen on the same field, technology, to prevent stocks cancelling each other's gain. Many investors believe in diversifying their portfolio, in hope that the gains of some will cancel the losses of others. What many investors don't realize is that, in fact, the losses are canceling the gains as well. Having a solidified portfolio on a single field is riskier but can provide the best gains. The choice of the technology field was due to the large amount of companies on the field, increasing the chance of the whole field riding on a single company's gain, or loss. Other field normally used for this strategy is banking, which is the go-to field for most investors, due to the nature of the field favoring slow, steady growth. Today the Nasdaq Composite Index is made up almost entirely of companies on these fields. This allows for a safe comparison between individual companies and the index.

Apple - AAPL:

Apple is the most well-known name in technology today, and that name is enough to carry the price to a high value. Today every developed or developing country has an Apple store, and its products are a status symbol in the latter. At around $\$ 200$ per stock, this is the second cheapest stock in this portfolio. With the large number of products and their popularity, as well as the profit brought by them, this stock has the potential to grow much more.

From the company's SEC Filing:
"Apple (ticker symbol: AAPL) is one of the world's leading consumer electronics and personal computer companies. The Cupertino, California-based company was established in 1977
as Apple Computer Inc. It dropped the "Computer" from its name in early 2007. Apple's current place in the global marketplace is a far cry from its humble beginnings, with Steve Jobs, Steve Wozniak and Ronald Wayne selling hand-made personal computer kits in the late '70s. The company continued to focus on personal computers for the following decades, but in recent years that focus has shifted more to consumer electronics such as the iPhone, iPad and iPod. However, Apple also sells a range of related software, services and applications, with some of the most prominent non-electronics products being the iCloud, iOS, Mac OS and Apple TV. In addition, the company sells and delivers digital applications and software through its iTunes Store, App Store, iBookstore and Mac App Store." (SEC, 2018)


Figure 4.1 AAPL value - $3 / 19$ to $6 / 19$

## Alphabet - GOOG:

Google is the world's number one search engine, and today Alphabet is one of the largest companies in the world. This is shown by the stock's price of above $\$ 1,000$ and the large volume
of trades. The number of products and services offered by Alphabet and their success are the main driving point of the price.

From the company's SEC Filing:
"Google (ticker symbol: GOOG) is an American multinational leader in technology that aims to "organize the world's information and make it universally accessible and useful." Founded by Larry Page and Sergey Brin, who were attending Stanford University at the time, Google was first incorporated as a privately held company on September 4, 1998. From the outset, Google's core product has been its internet search engine, which remains the most popular such service across the globe. The company boasts one of the largest research groups in the world tasked with solving search problems and improving the process of accessing information. Beyond its search engine, Google has introduced a significant number of successful products, including Gmail, Google Maps, an office suite and applications for web browsing, instant messaging and photo editing. The vast majority of Google's revenue is gained through advertising, however. Its AdWords program offers businesses an opportunity to promote their products to a targeted audience, while its AdSense program allows third parties within the Google Network to generate revenue through relevant advertisements." (SEC, 2018)


Figure 4.2 GOOG value - $3 / 19$ to $6 / 19$

Amazon - AMZN:

What started as an online bookstore is now the largest online store for varied goods and services. With a stock price nearing $\$ 2,000$ as each day passes this is one of the safest stocks to invest in, as such a high price will not fall much without warning. This also means that the price won't rise much without a specific reason. Amazon is only growing more and more as time passes, so the slow and steady growth expected from a similar stock will be faster for Amazon. There are a few factors that have been slowing it down recently. The largest of these being worker's rights. Amazon warehouse workers are going on strikes demanding better working conditions and higher wages.

From the company's SEC Filing:
"Amazon.com, Inc. was incorporated in 1994 in the state of Washington and reincorporated in 1996 in the state of Delaware. Our principal corporate offices are located in Seattle, Washington.

We completed our initial public offering in May 1997 and our common stock is listed on the Nasdaq Global Select Market under the symbol "AMZN." We seek to be Earth's most customercentric company. We are guided by four principles: customer obsession rather than competitor focus, passion for invention, commitment to operational excellence, and long-term thinking. In each of our segments, we serve our primary customer sets, consisting of consumers, sellers, developers, enterprises, and content creators. In addition, we provide services, such as advertising." (SEC, 2018)


Figure 4.3 AMZN value - $3 / 19$ to $6 / 19$

## Microsoft - MSFT:

Microsoft is one of the cheaper stocks in this portfolio, at "only" $\$ 130$ this stock has the higher variation probability. Microsoft's main product, Windows, is the default Operating System for any non-Apple computer, which should put the company at a much higher price than it is today.

Microsoft is also the most stable, scandal free company in this portfolio, which is made up of rowdy technology companies.

From the company's SEC Filing:
"Microsoft is a technology company whose mission is to empower every person and every organization on the planet to achieve more. We strive to create local opportunity, growth, and impact in every country around the world. Our platforms and tools help drive small business productivity, large business competitiveness, and public-sector efficiency. They also support new startups, improve educational and health outcomes, and empower human ingenuity.

We continue to transform our business to lead in the new era of the intelligent cloud and intelligent edge. We bring technology and products together into experiences and solutions that unlock value for our customers. In this next phase of innovation, computing is more powerful and ubiquitous from the cloud to the edge. Artificial intelligence ("AI") capabilities are rapidly advancing, fueled by data and knowledge of the world. Physical and virtual worlds are coming together to create richer experiences that understand the context surrounding people, the things they use, the places they go, and their activities and relationships. A person's experience with technology spans a multitude of devices and has become increasingly more natural and multi-sensory with voice, ink, and gaze interactions." (SEC, 2018)


Figure 4.4 MSFT value $-3 / 19$ to $6 / 19$

### 4.2 Trading

The initial purchase was made to approach $\$ 500,000$ as much as possible without going over, as there is a hard cap on the budget at that value. The remaining value could be applied as profit comes in, but since this is a B\&H strategy no profit will be made until the end of the last week. The purchase was made on Sunday (05/26) using Friday's closing values, although this is not realistic it is the best option to start this strategy in this project. The weekly check will be made in the same way, to keep a pattern and keep things simpler. The portfolio value at the last check will be considered as a sale of all stocks.

| $26-$ <br> May | Stock <br> Name | Quantity | Price | Total | Net <br> Total |
| ---: | :--- | ---: | :--- | ---: | :--- |
|  | GOOG | 150 | 1133.47 | 170020.5 | 499986 |
|  | AMZN | 150 | 1823.28 | 273492 |  |
|  | MSFT | 195 | 126.24 | 24616.8 |  |
|  | APPL | 178 | 178.97 | 31856.66 |  |

Table 4.1 B\&H Initial Purchase - 5/26/19

### 4.2.1 Week 1

All stocks dropped on week one due to a field-wide drop. Since all stocks are in the same field it was expected they would move together. This was a big drop and will be difficult to recover from in such a small amount of time with this type of strategy. The portfolio fell $2.6 \%$ from the initial value and is now very behind the goal for the margin account.


Figure 4.5 AAPL Week One Graph


Figure 4.6 AMZN Week One Graph


Figure 4.7 GOOG Week One Graph
MICROSOFTOPRP. Last $\$ 136.995 \cdot$-1.795 $(-1.29 \%) \cdot$ Volume 8,478,528

Figure 4.8 MSFT Week One Graph

|  | Stock |  |  |  |  |
| :--- | :--- | ---: | :--- | :--- | :--- |
| 2-Jun | Name | Quantity | Price | Total | Net Total |
|  | GOOG | 150 | 1103.63 | 165544.5 | 487085.1 |
|  | AMZN | 150 | 1775.07 | 266260.5 |  |
|  | MSFT | 195 | 123.68 | 24117.6 |  |
|  | APPL | 178 | 175.07 | 31162.46 |  |

Table 4.2 B\&H Week One Value - 6/2/19

### 4.2.2 Week 2

GOOG was the only Buy and Hold stock that dropped this week, we saw a pretty good increase in all the other stocks. Choosing technology as the field to invest on is not paying off as well as expected. The increase was of only $0.5 \%$ from last week, as is still below the initial value.


Figure 4.9 AAPL Week Two Graph


Figure 4.10 AMZN Week Two Graph
ALPHABET INC. Last $\$ 1187.1840 \cdot \mathbf{V}-4.0660(-0.34 \%) \cdot$ Volume 461,029

Figure 4.11 GOOG Week Two Graph


Figure 4.12 MSFT Week Two Graph

|  | Stock |  |  |  |  |
| :--- | :--- | ---: | :--- | ---: | ---: |
| 9-Jun | Name | Quantity | Price | Total | Net Total |
|  | GOOG | 150 | 1066.04 | 159906 | 489980.2 |
|  | AMZN | 150 | 1804.03 | 270604.5 |  |
|  | MSFT | 195 | 131.4 | 25623 |  |
|  | APPL | 178 | 190.15 | 33846.7 |  |

Table 4.3 B\&H Week Two Value - 6/9/19

### 4.2.3 Week 3

All stocks are rising again from the tough past weeks, the portfolio is back on the green. Even though not all stocks returned to their original value, profit is being made. A rise on all stocks is necessary to keep the profit growing. The field is recovering from the drop and is showing the expected slow and steady grow. There was an increase of $2.7 \%$ from last week, and the portfolio is now above its starting value.


Figure 4.13 AAPL Week Three Graph


Figure 4.14 AMZN Week Three Graph


Figure 4.15 GOOG Week Three Graph


Figure 4.16 MSFT Week Three Graph

|  | Stock |  |  |  |  |
| :--- | :--- | ---: | :--- | :--- | :--- |
| 16-Jun | Name | Quantity | Price | Total | Net Total |
|  | GOOG | 150 | 1085.35 | 162802.5 | 503388.5 |
|  | AMZN | 150 | 1869.67 | 280450.5 |  |
|  | MSFT | 195 | 132.45 | 25827.75 |  |
|  | APPL | 178 | 192.74 | 34307.72 |  |

Table 4.4 B\&H Week Three Value - 6/16/19

### 4.2.4 Week 4

The stocks kept rising from last week, the market overall seems to be doing better than the past weeks. Profit from this portfolio rose $2.7 \%$ from last week. This strategy is on pace to beat the margin account interest by a considerable amount.


Figure 4.17 AAPL Week Four Graph


Figure 4.18 AMZN Week Four Graph


Figure 4.19 GOOG Week Four Graph


Figure 4.20 MSFT Week Four Graph

| 23-Jun | Stock <br> Name | Quantity | Price | Total | Net <br> Total |
| :--- | :--- | ---: | ---: | ---: | :--- |
|  | GOOG | 150 | 1121.88 | 168282 | 517069 |
|  | AMZN | 150 | 1911.3 | 286695 |  |
|  | MSFT | 195 | 136.97 | 26709.15 |  |
|  | APPL | 178 | 198.78 | 35382.84 |  |

Table 4.4 B\&H Week Four Value - 6/23/19

### 4.2.5 Week 5

This week began with a field wide drop, of which none of the companies in the portfolio recovered from. This unusual drop caused the portfolio's profit to go down, although still on the green. There was a fall of $1.9 \%$, the portfolio is still above the interest rate at $1.5 \%$ profit. If the fall continues the strategy might fail.


Figure 4.21 AAPL Week Five Graph
AMAZON COM INC. Last $\$ 1808.8000 \cdot \mathbf{v - 1 4 . 7 4 0 0 ( - 0 . 8 1 \% ) \cdot \text { Volume } 1 , 3 5 4 , 1 5 1}$

Figure 4.22 AMZN Week Five Graph


Figure 4.23 GOOG Week Five Graph


Figure 4.24 MSFT Week five Graph

|  | Stock |  |  |  |  |
| :--- | :--- | ---: | :--- | :--- | :--- |
| 30-Jun | Name | Quantity | Price | Total | Net Total |
|  | GOOG | 150 | 1080.91 | 162136.5 | 507501.8 |
|  | AMZN | 150 | 1893.63 | 284044.5 |  |
|  | MSFT | 195 | 133.8 | 26091 |  |
|  | APPL | 178 | 197.92 | 35229.76 |  |

Table 4.5 B\&H Week Five Value - 6/30/19

### 4.2.6 Week 6

All stocks rose together this week, for a $3.3 \%$ gain from last week. The portfolio is at a 4.8\% total gain, unless there is an unusually large fall next week this strategy will have been effective. The slow steady grow is back even stronger than the falls from last week.


Figure 4.25 AAPL Week Six Graph


Figure 4.26 AMZN Week Six Graph


Figure 4.27 GOOG Week Six Graph


Figure 4.28 MSFT Week Six Graph

| 7-Jul | Stock <br> Name | Quantity | Price | Total | Net Total |
| :--- | :--- | ---: | :--- | :--- | :--- |
|  | GOOG | 150 | 1131.59 | 169738.5 | 524254.6 |
|  | AMZN | 150 | 1942.91 | 291436.5 |  |
|  | MSFT | 195 | 137.06 | 26726.7 |  |
|  | APPL | 178 | 204.23 | 36352.94 |  |

Table 4.6 B\&H Week Six Value - 7/7/19

### 4.2.7 Week 7

All stocks rose for the last week of trading, except for APPL, which fell less than one percent. The portfolio rose $2.4 \%$ from last week, the rise was led by AMZN, which rose $3.5 \%$ with both other stocks rising around $1 \%$. The total rise was of $7.3 \%$ from the initial purpose.


Figure 4.29 AAPL Week Seven Graph


Figure 4.30 AMZN Week Seven Graph


Figure 4.31 GOOG Week Seven Graph


Figure 4.32 MSFT Week Seven Graph

| 14-Jul | Stock <br> Name | Quantity | Price | Total | Net Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | GOOG | 150 | 1144.9 | 171735 | 536657.9 |
|  | AMZN | 150 | 2011 | 301650 |  |
|  | MSFT | 195 | 138.9 | 27085.5 |  |
|  | APPL | 178 | 203.3 | 36187.4 |  |

Table 4.7 B\&H Week Seven Value - 7/14/19

### 4.3 Final Results

This strategy's final profit was of $7.3 \%$, or $\$ 36671.94$, which is above the margin account interest of $1.07 \%$. This strategy would be useful in the long run for a safe, slow investment. The main problem using a margin account is the need to pay interest over the whole investment, which might take years. It would be recommended to not use a margin account or once the portfolio is well established, pay off the margin account and invest the remainder. This will slow down the profit but will guarantee that the portfolio is not overwhelmed by interest.

This project's Buy and Hold portfolio was based on tech companies, which can give good gains on the long run but are relatively dangerous on the short-term. This was also not the best time to invest in tech companies, with many factors contributing to a few months of instability. From privacy complaints, to the US-China dispute on tariffs, and an increasing instability in the political dispute online.

There have always been stories of advertisements that seem to hear your conversations and other privacy issues with tech companies. Only recently did most of those claims gain ground, most notably with Facebook (FB) facing a lawsuit. This de-stabilized the whole field for a few weeks, since most tech companies run many different products and services, which were also claimed to sell user data.

The US and China have been fighting for the top place on world's largest economy since China entered the fight not too long ago. This administration has been the first to fight back directly, by increasing tariffs on products coming from China and even attacking Chinese companies on American soil, such as Huawei. Most tech companies have their main assembly line in China, to take advantage of the many benefits a developing country has, such as low-cost labor and land, and government aid. These companies were hurt by the tariffs as there was an increase on the price of bringing those products back to the US.

The last factor is the use of some of the products offered by these companies for political use. The 2016 elections raised a new problem, the use of technology for the spreading of misinformation about both main candidates running for president. The task to control this new trend was put on the companies themselves which resulted in even more conflict between the two sides as both claim the companies are not doing a good job. The spotlight was put on Facebook again, but most of the large tech companies have similar products, such as Alphabet's (GOOG)

YouTube and the now discontinued Google+. Even companies that were not involved released statements on the subject, weighing in the best solutions or even just adding wood to the fire. And those that did not release statements were equally attacked for not voicing their opinions. Politics are almost never a good topic for a business and for the stock market, and this time it was no different.

## 5. Full Market Analysis and Conclusion

The NASDAQ Composite Index rose $7.9 \%$ during the time of this project, which is slightly higher than the Buy and Hold results. This is a good increase, since there was a big drop in June, which I tought most stocks would not recover from before the end of the project. The Composite Index is a good indicator of the overall market, since it does not account for most uncommon stocks. Stocks such as BYND do not affect the Index, which only contains "blue-chip" stocks. This selection guarantees a good overall view of the market itself, and not individual performance of one-time wonders or busts. The Index is a good indicator to most Buy and Hold portfolios, so an average investor would be expected to make $7.9 \%$ profit in these 2 months. The fact that this project's Buy and Hold portfolio did not make that profit, even though it was close, shows that the stocks chosen were not ideal, as explained on section 4.9 it was a rough couple months for the field. A safer investment would be banking companies, which have a stronger base and fall in price less frequently.

The DT strategy was driven by BYND and its unusual IPO, this was an opportunity that does no appear often. The trading of UBER stock gave an average $10 \%$ per trade, while BYND's average gain per trade was around $30 \%$. This mean that even without BYND the strategy has a great potential for profit. This is evidence that DT will always beat B\&H in variation, either up or
down. The investor will choose which strategy to use based on his skills, goals, and investment duration, as well as a market study for each strategy considered.

## References

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