STOCK RECOMMENDATION SYSTEM

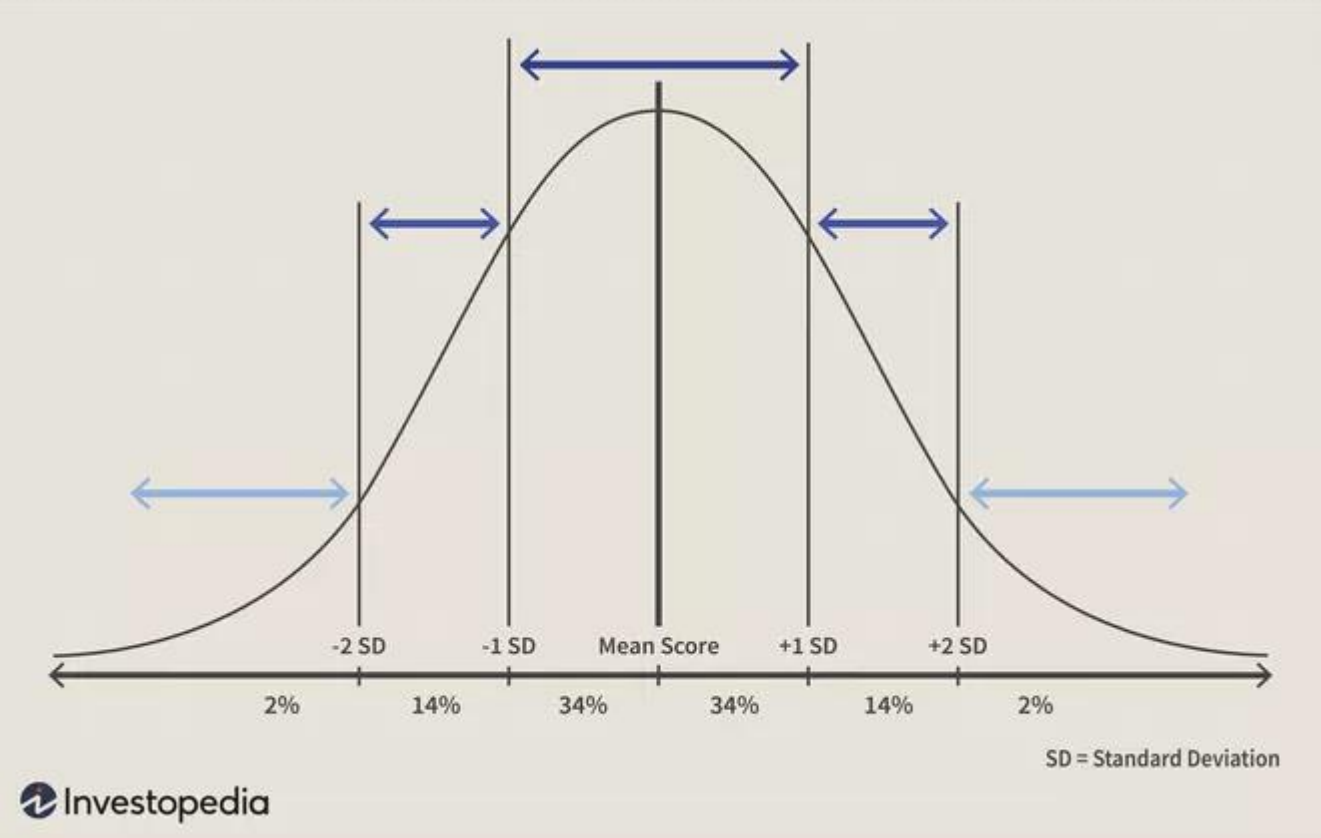
Stock trading involves buying and selling shares in a certain company. If you own certain stocks and shares of a company, it translates to you owning a piece of the firm. A professional or an individual who trades on behalf of a financial firm will be known as a stock trader.

An individual trader will buy and sell via a brokerage or an agent. On the other hand, institutional traders are mostly employed by investment companies. Stock traders provide liquidity to the markets, and employ several methods and styles for defining their strategies. Stock trading has two main types - individual stock trading and institutional stock trading.

Stock traders are different from stock investors. Stock traders trade equity securities, whereas stock investors utilize their own funds to purchase securities. The stock investor's primary goal is to produce interest income or to profit from the increase in value, also termed capital gains.

Why use Stock Recommendation System?

The objective of this recommender system is to support stock market traders, individual investors and fund managers in their decisions by suggesting investment in a group of equity stocks when strong evidence of possible profit from these transactions is available.



Imagine if we took the bell curve, flipped it on its side and applied it to a stock chart. This would allow us to see when a security is overbought or oversold and ready to revert to the mean. In Figure 2, the linear regression study is added to the chart, giving investors the blue outside channel and the linear regression line through the middle of our price points. This channel shows investors the current price trend and provides a mean value. Using a variable linear regression, we can set a narrow channel at one standard deviation, or 68%, to create green channels. While there isn't a bell curve, we

can see that price now reflects the bell curve's divisions, noted in Figure 1.

Figure 2: Illustration of trading the mean reversion using four points. Source: ProphetCharts

Trading the Mean Reversion

This setup is easily traded by using four points on the chart, as outlined in Figure 2. No. 1 is the entry point. This only becomes an entry point when the price has traded out to the outer blue channel and has moved back inside the one standard deviation line. We don't simply rely on having the price as an outlier because it may get another further out. Instead, we want the outlying event to have taken place and the price to revert to the mean. A move back within the first standard deviation confirms the regression.

No. 2 provides a stop-loss point in case the cause of the outliers continues to negatively affect the price. Setting the stop-loss order easily defines the trade's risk.

Two price targets at No. 3 and No. 4 will be set for profitable exits. Our first expectation with the trade was to revert to the mean line, and in Figure 2, the plan is to exit half of the position near $26.50, or the current mean value. The second target works under the assumption of a continuing trend, so another target will be set at the opposite end of the channel for the other standard deviation line, or $31.50. This method defines an investor's possible reward.

Figure 3: Filling the mean price. Source: ProphetCharts

Over time, the price will move up and down, and the linear regression channel will experience changes as old prices fall off and new prices appear. However, targets and stops should remain the same until the mean price target fills (see Figure 3). At this point, a profit has been locked in, and the stop-loss should be moved up to the original entry price. Assuming it is an efficient and liquid market, the remainder of the trade should be without risk.

Figure 4: Filling the mean price. Source: Prophet Charts

Remember, security doesn't have to close at a particular price for your order to fill; it only needs to reach the price intraday. You may have been filled on the second target during any of the three areas in Figure 4.

Why use Linear Regression?

Technicians and quant traders often work one system for a particular security or stock and find that the same parameters won't work on other securities or stocks. The beauty of linear regression is that the security's price and time period determine the system parameters. Use these tools and the rules defined above on various securities and time frames and you will be surprised by its universal nature.

Project Schedule:

Sr. No	Task	Finishing Date	Done
1	Literature Survey	23/9/2022	10/10
2	Proposed Model	30/9/2022	10/10
3	Tester	7/10/2022	3/10
4	First Strategy	14/10/2022	0/10
5	Advance Strategy	17/10/2022	0/10
6	Merging	21/10/2022	0/10
7	Modifying and Testing	28/11/2022	0/10
8	Debugging	31/11/2022	0/10
9	NSE Special	4/11/2022	0/10

THANK YOU