Data Analytics

Application in Real Life Scenario Case Study

Use of Data analytics in stock selection for long-term investment

Stocks are most important tool of investment to attain long-term financial goals but the world stock has become so volatile and due to which it is also quite difficult by investing in a particular share or company that will give sustained performance over time. Therefore, taking an informed decision with the investment becomes essential.

There is a good amount of data — historical stock data to financial reports that provide valuable insights, if data are analysed correctly. Investors are able to use data analysis to evaluate potential investments, look for trends or risks associated with them. Through the use of statistical tools and predictive models, investors will take rational judgments on where to put their money, investing in stocks that will give consistent returns over long run and allows to avoid large losses.

The Problem:

Selecting the Right Stocks for Long-Term Investment

Selecting the right stocks for long-term investment in this complex, rapidly changing uncertain markets is very challenging. All the stocks performing well in short term does not implies sustained growth over the long term too There are numerous factors to be considered by investors like company's financial health, market trends, competitions, and economic conditions.

The objective is to create a portfolio that balances risk with potential reward, as well as diversifying the portfolio for long term capital gain. Using data-driven approach, like assessing historical stock data, financial ratios, market trends and predictive modelling we can evaluate a range of companies to determine which stock aligns best with long term investment goals.

Six steps for data analysis-

1.Plan

- Objective: Selecting the stocks for the long-term investment that can outperform the market over a long period.
- Different criteria must be established for evaluating stocks such as financial health, growth potential and market position.
- Types of stocks to be considered, large-cap, mid-cap or small-cap and the time frame in which you invest – 10/20/30 years.

2.Prepare:

- Data collection: Compile historical data on stock prices, financial statements, industry reports and market trends which can provide the foundation for evaluating performance and potential of stock.
- Establish a set of metrics to measure the stock's performance and potential. These could be the price-to-earnings ratio (P/E), return on equity (ROE), earnings per share (EPS) and others that indicate a company's financial health and growth prospects.

3.Process:

- Data cleaning: The vast amount of data cleaned to remove any inaccuracies, like duplicate entries, missing values, or outliers that could skew the analysis.

- Standardize the data to ensure the consistency within it and normalise data formats.
- Create new variables such as growth rates, moving averages that might help in the analysis of data.

4.Analyze:

- Descriptive analysis: Analysis of historical data to understand the past performance of various stocks. This can be done by calculating key metrics like average returns, volatility, dividend yields and various financial ratios.
- Diagnostic analysis: Diagnostic analysis to understand reasons behind past performance. This involves analysing the impact of specific events like economic shifts or market crashes allowing to understand the underlying causes of observed trends.
- Predictive analysis: Predictive models to forecast future performances. Different tools like regression analysis, machine learning models to estimate future returns, risk and growth potential. It provides insights into which stocks are likely to perform well in the future, helping to take decisions.

5.Share:

- Data visualisation: Creating the visualisations using graphs, charts and tables to present the findings of analysis in easily understandable format. This includes performance of various stocks, risk assessments and returns.
- A detailed report which summarizes the analysis insights, including which stocks were selected and why, explaining the methodology, the results and recommendations.
- Presentation: A presentation to share the insights highlighting the key findings.

6.Act:

- Decision can be made based on the insights from analysis on which stocks to invest in. According to the investment strategy developed from the analysis, a portfolio that is diversified to balance potential rewards with risk can be selected.
- Implementation: The funds allocation to selected stocks and setting up the portfolio for long term investment.
- Monitoring the performance of portfolio regularly and make changes where required to stay aligned with long-term investment goals.
- Rebalancing the portfolio and reassessing stocks as new data becomes available.

This approach helps in making informed decisions that are based on comprehensive analysis.