

Applying Data Visualization Techniques for Stock Market Analysis

Abstract

Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context. Patterns, trends and correlations that might go undetected in text-based data can be exposed and recognized easier with data visualization software. Data visualization is the presentation of quantitative information in a graphical form. In other words, data visualizations turn large and small data-sets into visuals that are easier for the human brain to understand and process. Data visualizations are surprisingly common in our everyday life, but they often appear in the form of well-known charts and graphs. Data visualization uses computer graphics to show patterns, trends, and relationship among elements of the data. It can generate pie charts, bar charts, scatter plots, and other types of data graphs with simple pull-down menus and mouse clicks

Stock investment decisions require time, knowledge and awareness including historical data, the stock market contains a huge amount of data that varies over time. Stock prices are influenced by various factors ranging from the performance of the company itself to the conditions of the economy in general. Thus, to manage investment portfolios, stock market data has to be analyzed regularly to identify potential relationships between various stocks, hence to adjust investment based on related stocks trends. insight of vast amount of complex raw data, especially when people have limited

knowledge of the data Visual representation is one of the most efficient ways to assist investors to have a clear overview of movements of the stock market, as well as providing a deeper understanding of each individual stock.

Simulation Tool: MATLAB

MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation. Typical uses include Data analysis, exploration, and visualization. MATLAB enables you to analyse and visualize your data in a fraction of the time it would take using spreadsheets or traditional programming languages. It provides a variety of tools that make it simple to import, visualize, process, and analyse your data. And then it's easy to share your work with others so they can reproduce and iterate on your results.

Visualize Data with MATLAB

1. Click Apps > MATLAB Visualizations.
2. Click New to start your visualization.
3. Select a template or an example with sample code, which you can run and explore the results.
4. Click Create.