* Analyzed a comprehensive dataset of 10,001 financial instruments from NASDAQ, SNP, and DJ to identify trends and patterns.
* Developed Python classes (`Index`, `LargeCapIndex`, `NonLargeCapIndex`) to systematically represent and categorize financial data.
* Implemented additional subclasses (`SNP`, `DJ`, `NASDAQ`) for detailed data classification.
* Conducted data preprocessing and cleaning, including handling missing values and data type conversions.
* Performed exploratory data analysis (EDA) to understand data distribution and key metrics.
* Visualized data using various plots such as bar charts, box plots, histograms, pie charts, scatter plots, line graphs, and heatmaps to derive insights:
* Bar Chart: Illustrated the distribution of financial instruments across companies.
* Box Plot: Highlighted the price distribution for each company.
* Histogram: Showed the overall price distribution within the dataset.
* Pie Chart: Displayed the proportion of LargeCap and NonLargeCap financial instruments.
* Scatter Plot: Examined the relationship between price and fluctuation rate.
* Line Graph: Tracked price changes over time.
* Heatmap: Analyzed the correlation between different financial attributes.

Summarized key findings to provide actionable insights on price variability, company performance, and financial stability.

Utilized tools and libraries such as Pandas, Matplotlib, Seaborn, and Pickle for data manipulation, visualization, and storage.