GROUP NUMBER: 5

PROJECT GITHUB: https://github.com/Parth01202/Project-Bull-vs-Bear

PROJECT BULL VS. BEAR

PROBLEM

Big Idea: Identify the stock market sectors that perform the best during bullish upswings and bearish downturns.

Question: Are we able to predict the performance of industries under bull vs. bear conditions?

Why Others Should Care: Knowing the thriving sectors can help reduce risk and boost returns in the market.

How this Problem was Chosen: Historical stock data can help us create an actionable solution to guide sector performance.

Specific Hypotheses: *Stocks in* Sectors like healthcare and consumer services exceed others during bear markets, while technology, and healthcare technology control bull markets.

DATA

Data Description: Some of the columns in the datasets includes: date, open, close, high, low, volume, and data sectors. The types of data vary between strings, integers, and floats. A stock market dataset for Nasdaq contains 8,050 csv files.

Data Access: We have access to most of the data we would like to use, but we are still looking for more options.

Data Collection: Further data collection should take minimal effort and should be completed within a reasonable time.

SOLUTION

PROBLEM APPROACH

Understanding Market Trends

Our goal is to analyze historical stock market data to identify sector performance in bullish vs bearish markets.

NEXT STEPS

Data Processing- Cleaning and filtering our data, removing noise, structuring data.

Identifying critical indicators that give us valuable insights into the performance.

Model Training- Applying classification and regression models to predict market trends .

Evaluation- Extracting meaning out of our output and refining our predictions.

TECHNIQUES

Data Collection- Aggregating from our dataset (Stock Market Data)

Machine Learning Models- Random Forest and Logistic Regression.

Visualization- Using visuals like heatmaps and correlation matrices to obtain valuable insights and depict stock market behavior.

DELIVERABLES/FINDINGS

FEEDBACK

We hope to receive early insights about the direction of market behavior.

On the other hand, we hope to identify challenges early on like missing data and correct optimization of models.

END RESULT

We envision the end result to be a predictive model that displays trends involving sectors in bullish upswings and bearish downturns.

INTERACTIVE OR STATIC?

The project system is envisioned to be interactive with static factors.

PROGRESS REPORT

We hope to have prepared the data, done exploratory data analysis, created visualizations, and done ML analyses for the progress report.

Thank You!