FIN 4450: Foundations of FinTech
Sentiment Analyzer – Part 2

Please see the related Canvas Announcement and Assignment page for due date information

Description:

This is the second part of a two-part assignment. The S&P Dow Jones Industrial Average, the Dow, (https://www.spglobal.com/spdji/en/indices/equity/dow-jones-industrial-average/) is one of the barometers of the U.S. financial markets. Launched on May 26, 1896, the Dow is a price-weighted measure of 30 U.S. blue-chip companies. In this part of the Sentiment Analyzer project, you are going to build a sentiment analyzer and use it to choose 5 stocks from the 30 stocks that make the Dow and track its performance during the course of the semester. Note that you have a total USD 1 million for this investment. You are going to allocate the $1 million equally across these 5 stocks. Let us call this portfolio the "Sentiment portfolio".

Sentiment Analyzer Program:

You are going to build a naïve bag-of-words sentiment analyzer using the Loughran & McDonald financial sentiment dictionary. The required files have been uploaded to "Sentiment Analyzer" under the "Assignments & Projects" folder. We are going to focus on the positive words dictionary only (LoughranMcDonald_Positive.csv).

Objective: You are going to measure the positive sentiment of all 30 DIJA companies in news articles that were published in January 2021. You will choose the top 5 companies that lead in positive sentiment to form a portfolio and invest your $1 million.

Steps:

1. Login to Nexus Uni: https://guides.ucf.edu/nexis
2. Under "Guided Search" select "News"
3. Type the legal company name in "Search News for"
4. Input "01/01/2021" to "01/31/2021" as the dates in "Choose date range" and hit search
5. Apply the following filters in the search results:
    a. Publication Type: Newspapers

b. Language: English
c. Geography by Document: North America
d. Subject: Business News

6. Leave the sort order to "Relevance"
7. Download only the first 10 articles into your local computer.
8. Parse each article into words and see how many positive words from the dictionary are there for each company. This is your "Positive Sentiment" score.
9. Rank companies based on the above score and choose the top 5
10. Use your programming language of choice for the above step. You may even choose to automate the entire process.

Deliverables:

1. The program used to create the Sentiment Score
2. Each team has to submit a writeup (*two pages maximum*) identifying the 5 stocks chosen by the sentiment analyzer, the industry/sector. The report must contain the following information:
    a. Explain the performance of your portfolio and the Sentiment portfolio.
    b. Which stocks were the winners and losers?
    c. Did your portfolio and individual stocks achieve your expected returns? If not, why?
    d. Explain the advantages and disadvantages of algorithmic trading based on your experience in this exercise.
    e. How can you improve the algorithm (sentiment analyzer)?
    f. Month-by-month comparison of returns from your portfolio vs the Sentiment portfolio (as a table/plot after the 2-page writeup).
    g. Month-by-month comparison of returns for each stock in your portfolio and the Sentiment portfolio. (as a table/plot after the 2-page writeup).

Grading: This part accounts for 60% of the total Assignment 1 score (i.e., 6 points toward the course grade)