TIC3901 Industrial Practice Report 1

Tee Ming Soon (A0265570B)

Contents

1. Background

The finance sector is characterized by rapid changes and extensive information flow, particularly in financial markets. With an overwhelming amount of news and data available online, professionals in finance often struggle to stay updated with key market movements. This challenge is especially prominent across all major asset classes, where real-time commercial awareness is crucial for decision-making. Therefore, a dashboard solution that aggregates and simplifies data from multiple sources can improve the accessibility of relevant information.

2. Problem Statement

The problem faced by many professionals in the finance sector is the excessive volume of data available on the web, which makes it challenging to stay up to date with relevant financial market movements and news. The current methods of manually tracking daily movements across various sources are time-consuming, inefficient, and prone to errors.

3. Proposal

This project proposes the development of a dashboard that provides an organized overview of commercial awareness across financial markets. The dashboard will focus on summarizing and highlighting key daily movements and news across three major asset classes: fixed income, equities, and commodities. It will integrate data mining, cleaning, and visualization techniques to ensure that users are presented with clear, relevant, and up-to-date information.

4. Objective

The primary objective of the dashboard is to provide finance professionals with a concise overview of daily movements and news in fixed income, equities, and commodities markets. The dashboard aims to:

- Reduce time spent gathering and interpreting data from various sources.

- Increase the accuracy and relevance of the data presented.

- Provide easy-to-understand data visualization for better market insights.

5. Methodology

5.1 Data Mining

The dashboard will utilize Python scripts to scrape relevant data, including news and economic indicators, from various online financial sources. Data will be sourced from the following platforms:

- **Google News Search Engine**: Extracting relevant news articles based on user-defined keywords to capture market-related information.

- **Economic Calendar**: Providing economic event data to track important financial releases and indicators.

- **U.S. Treasury Par Yield Curve Rates**: Obtaining daily treasury yield curve data to monitor interest rate movements.

- **Yahoo Finance**: Pulling the latest prices of user-defined financial securities to calculate daily, weekly, monthly, year-to-date changes.

5.2 Data Cleaning

The raw data extracted from these sources will undergo a cleaning process using Python libraries such as Pandas and NumPy. This step will involve removing any duplicates, handling missing or incomplete data, and structuring the information in a format suitable for analysis.

5.3 Data Visualization

Once cleaned, the data will be visualized using tools like Matplotlib, Plotly, or Tableau. These tools will generate graphs, charts, and tables to present key financial insights clearly. The dashboard will feature interactive visualizations, allowing users to filter and analyze data by asset class, ensuring a user-friendly experience for easier monitoring.