Plans for Sprint 2

1. Collect Stock Market Data

- Use the yfinance library to fetch stock data:
  Collect data from different stock exchanges like NASDAQ, NYSE, Nikkei, and FTSE.

2. Preprocess the Data

- Clean and preprocess stock market data:
  - Handle missing values and normalize the data using MinMaxScaler or StandardScaler.
  - Convert your data into sequences for LSTM (e.g., sliding windows of past stock prices):

3. Build and Train the LSTM Model

- Start implementing the LSTM model in Keras/TensorFlow:
- Split the dataset into training and testing sets.
- Tune hyperparameters such as the number of neurons, epochs, batch size, etc.

4. Integrate Sentiment Analysis

- Use a news API (e.g., NewsAPI) to fetch news headlines.
- Perform sentiment analysis on headlines using the VADER sentiment analysis tool from NLTK:

5. Incorporate Google Trends Data

- Use pytrends library to fetch Google search trends for specific stock tickers or companies
- Use the trends data as an additional feature for stock price prediction.

6. Build the User Interface

- A basic command-line interface (CLI) where users can input the stock and date range
- Display predictions for the chosen time range and allow users to compare data from different sources (NASDAQ, NYSE, etc.).