Stock Market Sentiment Analysis

USING MACHINE LEARNING

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INTRODUCTION TO MACHINE LEARNING

- A Machine Learning system learns from historical data, builds the prediction models, and whenever it receives new data, predicts the output for it. The accuracy of predicted output depends upon the amount of data, as the huge amount of data helps to build a better model which predicts the output more accurately.

- In addition to this, the process of computationally identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer's attitude towards a particular stock is positive, negative, or neutral using natural language tool kit(NLTK)

Problem Definiton

- Predicting the stock market has been the bane and goal of investors since its inception. Every day billions of dollars are traded on the stock exchange, and behind every dollar is an investor hoping to make a profit in one way or another.

- Entire companies rise and fall daily depending on market behaviour. If an investor is able to accurately predict market movements, he offers a tantalizing promise of wealth and influence

Existing System

Human Intelligence

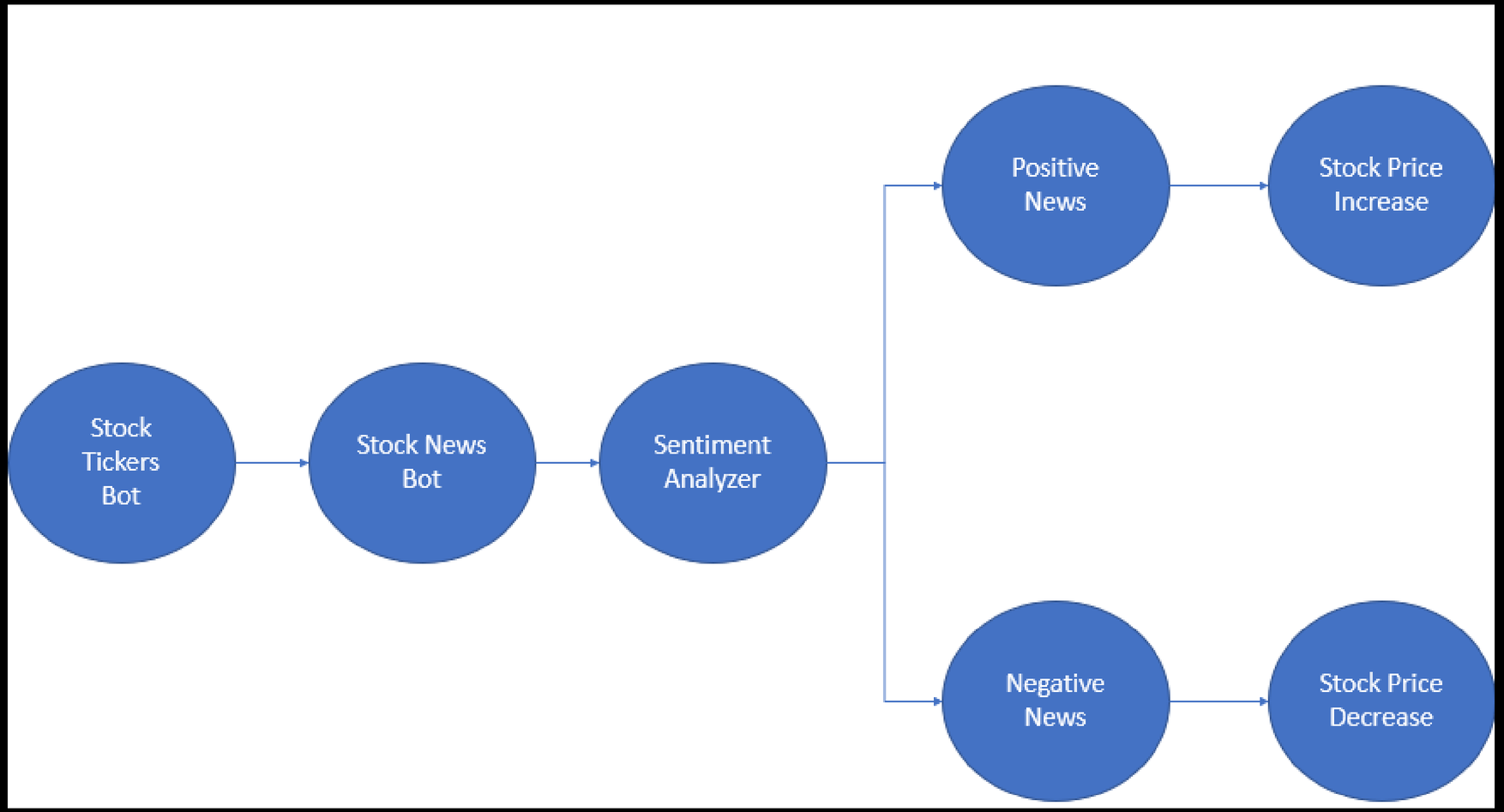
In an efficient market, stock prices would be determined primarily by fundamentals, which, at the basic level, refer to a combination of two things:

- An earnings base, such as earnings per share (EPS)
- A valuation multiple, such as a P/E ratio
- A third market consists of trading conducted by non-exchange member broker-dealers and institutional investors of exchange-listed stocks.

Proposed Methodologies

- Professional traders spend much of their time trying to anticipate the next news cycle, so that they can buy or sell stocks before the real numbers are released.
- The dataset in consideration is a combination of the world news headlines and stock price shifts.
- Instead of going through each headline for every stock that you're interested in, you can use Python to parse the website data and perform sentiment analysis (by assigning a polarity score) for every headline and then average it over a period of time.
- So here class 1 denotes the bullish market and class 0 denotes bearish or static market.

Wire-framework



Innovation in the project

Neglecting the traditional way of investing which leads to a precarious situation for investors can be avoided by using conventional machine learning algorithms in which we calculate the polarity score of simple news headlines using sentimental analysis, which in turn helps investors understand market fluctuations and patterns.

Social Relevance

- We utilise this model to forecast stock prices, which helps investors make better investing decisions.
- If some investors lack the time or skills to conduct their own investigation into a company's figures, this model will greatly assist them in making sound trading and investment selections.
- Our objective, on the other hand, is to assist those part-time investors by giving simple tools that make comprehending those data easier. Our mission is to assist individuals who are passionate about the stock market in obtaining a decent return from the stock market.