Modeling Stock Price by Binomial

Summary: We develop a Python program to forecast the probability of stock markets increasing the next time. To do so, we use a function called the binomial distribution to measure it.

BACKGROUND INFORMATION

Our motivation

- Stock refers to any of the shares that make up a corporation's holdings and people have long used the stock exchange to boost their financial statements. Therefore, stock price fluctuations have proven to be an important source of information for those looking to profit from stock trading. This is where our inspiration begins, we want to build a platform that traders will use as a reference to make better stock purchase decisions.

The Binomial Distribution Formula

- The binomial distribution is a probability distribution that summarizes the likelihood that a value will take one of two independent values under a given set of parameters.

$$P(k) = \frac{n!}{(n-k)!k!} \, p^k (1-p)^{n-k}$$

n: the number of trials (or the number being sampled)
k: The number of successes desired
p: the probability of getting success in one trial
1-p: the probability of getting a failure in one trial

METHODOLOGY

- **Step 1: Choose 100 is the number of trials**
- **Step 2: Get the stock price history data of the US stock market**
  - Limited to latest 2 days
  - Variables: open price, close price, the interval: 30mins
  - Then calculate the probability of getting success in one trial
- **Step 3: Draw the binomial distribution graph**
  - Shows the probability of the increases in the next 100 times
- **Step 4: Provide suggestions based on the result of the graph.**

OUR PRODUCT

PROJECT OWNERS: NGOC LONG & DIEM QUYNH