STOCK EXCHANGE USING PYTHON

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Abstract

A stock exchange, securities exchange or bourse is a facility where stockbrokers and traders can buy and sell securities, such as shares of stock and bonds and other financial instruments. Stock exchanges may also provide facilities for the issue and redemption of such securities and instruments and capital events including the payment of income and dividends. Securities traded on a stock exchange include stock issued by listed companies, unit trusts, derivatives, pooled investment products and bonds. Stock exchanges often function as "continuous auction" markets with buyers and sellers consummating transactions via open outcry at a central location such as the floor of the exchange or by using an electronic trading platform.

Keywords: Stock Exchange, Python, Prediction, Data Sheet variables or Modules, Turnover, Feasibility, Interpreter

1. INTRODUCTION

Stock market prediction is the act of trying to determine the future value of a company stock or other financial instrument traded on an exchange. The successful prediction of a stock's future price could yield significant profit. The efficient-market hypothesis suggests that this article includes a list of references, but its sources remain unclear because it has insufficient stock prices reflect all currently available information and any price changes that are not based on newly revealed information thus are inherently unpredictable. Others disagree and those with this viewpoint possess myriad methods and Technologies which purportedly allow them to gain future price information.

Figure: Sensex diagram

There are multiple variables in the dataset – date, open, high, low, last, close, total_ trade quantity, and turnover. The columns Open and close represent the starting and final price at which the stock is traded on a particular day. High, Low and last represent the maximum, minimum, and last price of the share for the day. Total Trade Quantity is the number of shares bought or sold in the day and Turnover (Laces) is

the turnover of the particular company on a given date. Another important thing to note is that the market is closed on weekends and public holidays.

The profit or loss calculation is usually determined by the closing price of a stock for the day, hence we will consider the closing price as the target variable.

2. Literature Survey

The efficient market hypothesis posits that stock prices are a function of information and rational expectations, and that newly revealed information about a company's prospects is almost immediately reflected in the current stock price. This would imply that all publicly known information about a company, which obviously includes its price history, would already be reflected in the current price of the stock. Accordingly, changes in the stock price reflect release of new information, changes in the market generally, or random movements around the value that reflects the existing information set. Burton Malkiel, in his influential 1973 work A Random Walk Down Wall Street, claimed that stock prices could therefore not be accurately predicted by looking at price history. As a result, Malkiel argued, stock prices are best described by a statistical process called a "random walk" meaning each day's deviations from the central value are random and unpredictable. This led Malkiel to conclude that paying financial services persons to predict the market actually hurt, rather than helped, net portfolio return. A number of empirical tests support the notion that the theory applies generally, as most portfolios managed by professional stock predictors do not outperform the market average return

After accounting for the manager's fees.

3. Related Work

Figure: Python programming

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. An interpreted language, Python has a design philosophy that emphasizes code readability (notably using whitespace indentation to delimit code blocks rather than curly brackets or keywords), and a syntax that allows programmers to express concepts in fewer lines of code than might be used in languages such as C++ or Java. It provides constructs that enable clear programming on both small and large scales. Python interpreters are available for many operating systems. C Python, the reference implementation of Python, is open source software and has a community-based development model, as do nearly all of its variant implementations.

4. Implementation

During system analysis the feasibility study of the proposed system is to be carried out.

This is to ensure that the proposed system is not a burden to the company.

Three key considerations involved in the feasibility analysis are,
ECONOMICAL FEASIBILITY
TECHNICAL FEASIBILITY
SOCIAL FEASIBILITY

An interpreted language, Python has a design philosophy that emphasizes code readability. Invoke the interpreter using any of the two methods:
1. By typing the command python3.8 in the UNIX shell's search path.
2. By python -c command [arg] ..., which executes statements in command.

Arguments are passed when the script name and additional arguments thereafter are turned into a list of strings and assigned to the argv variable in the sys module.
In the interactive mode:
1. It prompts for the next command with the primary prompt, usually three
Greater-than signs (>>>).
2. For continuation lines it prompts with the secondary prompt, by
Default three dots (...).

Interpreter and its environment

The syntax for the source code encoding is as follows

-*- coding: encoding -*-

Where encoding is one of the valid codecs supported by python.

To declare the same in Windows-1252 encoding is to be used with the source code

-*- coding: cp1252 -*-

When the source code starts with a UNIX "shebang" line, the source code becomes

#!/usr/bin/env python3
-*- coding: cp1252 -*-

System Testing

The following are the Testing Methodologies:

- Unit Testing
- Integration Testing

A. Top down Integration
B. Bottom-up Integration

- User Acceptance Testing
- Output Testing
- Validation Testing

A. Text Field
B. Numeric Field while the Foundation is an instructive cause to advance the educating of essential software engineering in schools and in creating nations.

Algorithm Linear Regression

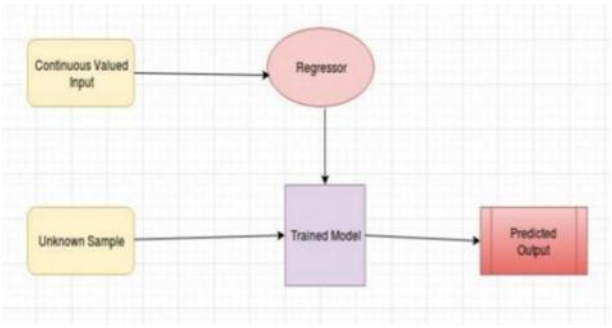

Figure: Flow diagram

Results

	Date	Open	High	Low	Last	Close	Total Trade Quantity	Turnover (Lacs)
0	2018-10-08	208.00	222.25	206.85	216.00	215.15	4642146.0	10062.83
1	2018-10-05	217.00	218.60	205.90	210.25	209.20	3519515.0	7407.06
2	2018-10-04	223.50	227.80	216.15	217.25	218.20	1728786.0	3815.79
3	2018-10-03	230.00	237.50	225.75	226.45	227.60	1708590.0	3960.27
4	2018-10-01	234.55	234.60	221.05	230.30	230.90	1534749.0	3486.05
5	2018-09-28	234.05	235.95	230.20	233.50	233.75	3069914.0	7162.35
6	2018-09-27	234.55	236.80	231.10	233.80	233.25	5082859.0	11859.95
7	2018-09-26	240.00	240.00	232.50	235.00	234.25	2240909.0	5248.60
8	2018-09-25	233.30	236.75	232.00	236.25	236.10	2349368.0	5503.90
9	2018-09-24	233.55	239.20	230.75	234.00	233.30	3423509.0	7999.55
10	2018-09-21	235.00	237.00	227.95	233.75	234.60	5395319.0	12589.59
11	2018-09-19	235.95	237.20	233.45	234.60	234.90	1362058.0	3202.78
12	2018-09-18	237.90	239.25	233.50	235.50	235.05	2614794.0	6163.70
13	2018-09-17	233.15	238.00	230.25	236.40	236.60	3170894.0	7445.41
14	2018-09-14	223.45	236.70	223.30	234.00	233.95	6377909.0	14784.50
15	2018-09-12	216.35	223.70	212.65	221.65	222.65	4570939.0	10002.01
16	2018-09-11	222.50	225.40	214.85	216.35	216.00	3508990.0	7735.81
17	2018-09-10	222.50	235.15	220.65	221.05	222.00	7514106.0	17130.29
18	2018-09-07	221.00	224.50	219.10	223.15	222.95	1232507.0	2742.84
19	2018-09-06	224.00	225.00	218.20	220.95	221.05	1738824.0	3856.72
20	2018-09-05	222.00	224.60	215.20	222.10	222.40	3023097.0	6674.93
21	2018-09-04	238.20	238.20	222.60	223.45	223.70	3554859.0	8163.82

Figure: Output data sheet

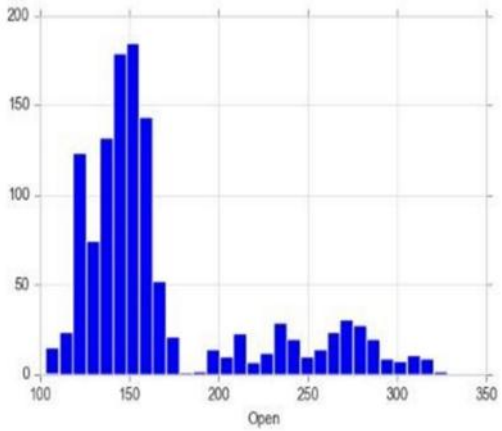

Figure: Plot of OPEN module

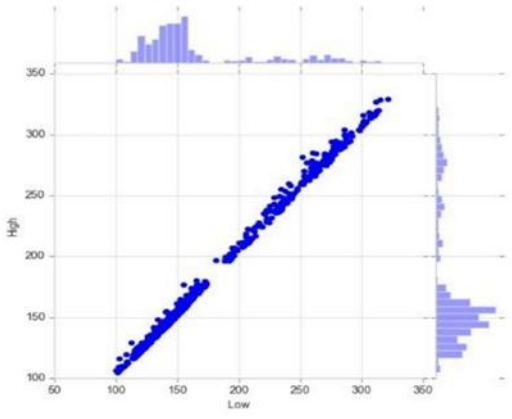

Figure: Joint plot of LOW and HIGH

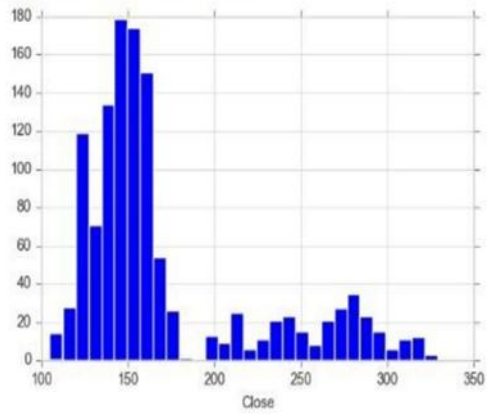

Figure: Plot of CLOSE module

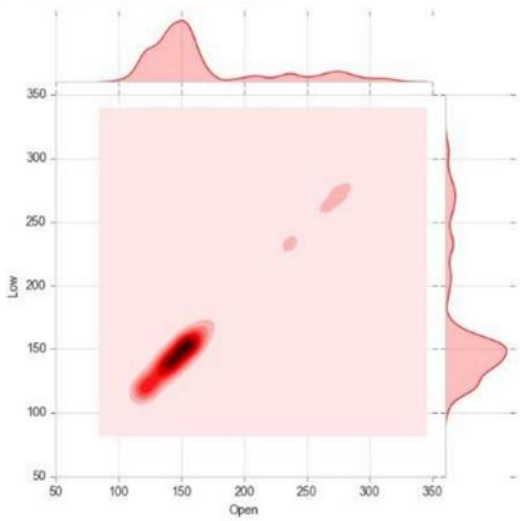

Figure: Joint plot of OPEN and LOW

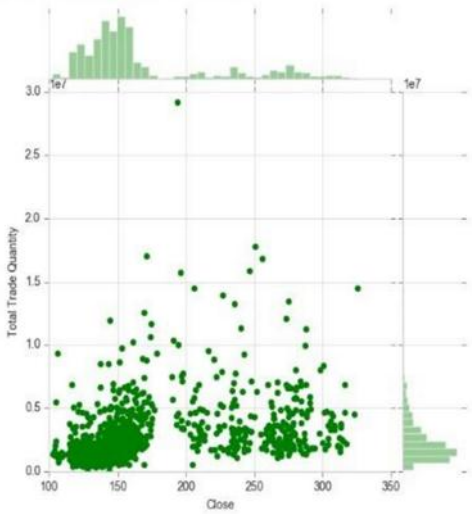

Figure: Joint plot of CLOSE and TOTAL TRADE QUANTITY

4. Conclusion

Stock is equity, bonds are debt. Bondholders are guaranteed a return on their investment and have a higher claim than shareholders. This is generally why stocks are considered riskier investments and require a higher rate of return. You can lose all of your investment with stocks. The flip-side of this is you can make a lot of money if you invest in the right company. The two main types of stock are common and preferred. It is also possible for a company to create different classes of stock. Stock markets are places where buyers and sellers of stock meet to trade.

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