KLE Society's
KLE Technological University

A Scripting Language Course Project Report

On

Stock Prediction for Google, Amazon and Facebook

Bachelor of Engineering in

Computer Science and Engineering

Submitted By

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CERTIFICATE

This is to certify that Scripting Lab Course Project -Stock Prediction is a bonafied work carried out by the student team Mr.Vinayak Madhurkar-01FE16BCS228,Mr.Vineet Kavishetty – 01FE16BCS230, Ms.Unnati Babruwad – 01FE16BCS219, Ms.Vaishnavi J – 01FE16BCS221, in partial fulfillment of completion of 5th semester B.E. in Computer science and Engineering during the year 2018 – 2019. The project report has been approved as it satisfies the academic requirement with respect to the project work prescribed for the above said programme.

Guide
Mrs. Preeti T.

External Viva:

Name of the Examiners	**Signature with date**
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ABSTRACT

High level of accuracy and precision is the key factor in predicting a stock market. The technical, fundamental or the time series analysis is used by most of the stockbrokers while making the predictions. Nevertheless, these methods cannot be trusted fully, so there is a necessity to provide the supportive method for stock market prediction. In this project, we propose a Machine Learning (ML) approach that will be trained from available stocks data, gain intelligence and then uses the acquired knowledge for accurate prediction. Linear Regression was found to be the most practical consideration. The main significant approach, used in this project for the predicting result is a concept of machine learning and result tested on the Amazon, Google and Facebook data set.

Most of the Machine Learning approach for solving business problems have their privilege over statistical methods that do not include AI, although there is an optimal methodology for certain problems. A comparative analysis of selective application is conducted which concluded that Linear Regression models are extensively implemented in forecasting stock prices, returns more control degree of a relative similarity in predicted result.

Introduction

The trend in stock market prediction is not a new thing yet this issue is kept being discussed by the various organization. Being able to predict accurately the future financial outcome is equivalent to earning big money. This project aims at analyzing this problem in an academic way which provides a different way of prediction on the market trend. In this project, we will develop a financial data predictor program. There are data-sets storing all historical stock prices of three different companies and the data will be treated as training sets for the program. To predict the stock prices of the three companies (Google,Amazon and Facebook), this project aims at developing a program which serve best solution for accurate predicted stock result.

Currently, Stockbrokers who execute trades and advise clients, rely on their experience, technical analysis (price trends) or fundamental analysis (buy and hold) in pick- ing their stocks. These current methods are subjective and are usually short sighted due to their limited capacity. With the value of trade money involved, improper investment could easily mean great losses to investors, especially if they keep making wrong decisions. Lack of guaranteed returns has also led to the reluctance by potential investors to participate in the market. It is therefore desirable to have a tool that can guide on the most likely next day prices (prediction) as a basis of making any investment decision.

The use of fundamental and technical analysis methods are basis of the predictions of future stock price movement. These tools show a trend on future movement and not the figure of the most likely trade price for any stock in future. It is there- fore desirable to have a tool that does not just point at a direction of price movement. Machine Learning methods that can actually analyze the stock prices over time and gain intelligence, then use this intelligence in prediction, can be used to model such a tool.

Problem definition

The project aims to predict the closing prices of the specified three companies, for a time span of 1 day,7 days or 30 days, based on the company selected. The project also aims at facilitating its users to view the graphs to visualize the past trends of the selected company, and also plots the comparison between the trends of all the three companies.

Data Description

Amazon dataset:

- The dataset contains daily stock details from 1997 till 2018.
- It has 13 attributes and 5248 tuples.

Facebook dataset:

- The dataset contains daily stock details from 2012 till 2018.
- It has 13 attributes and 1472 tuples.

Google dataset:

- The dataset contains daily stock details from 2004 till 2018.
- It has 13 attributes and 3424 tuples.

Model Used and its description

Dataset is split into train and test using cross-validation technique with test size of 0.2. Linear regression model is used which is imported from sklearn.linear_model. Fit() method is used to train with the training data obtained from the cross validation. Predict() method is used to calculate the predictions using the test data. The predictions are done for in three modes , for one day , for the next week and for the next month. Later score() function is used to calculate the confidence score. For the model used a confidence score of 98 % was obtained.

Tkinter is used for building the graphical user interface. The GUI contains buttons and checkboxes which allows the user to select the company of which the prediction is to be obtained and select the number of days for which the prediction has to be made i.e the three modes which are one day , one week and and one month predictions. Various candle stick graphs are also plotted and buttons are available for selecting the company for which the graph has to be displayed. A comapritive graph is also available which plots the adj.close of all the three companies.

GUI Snap shots

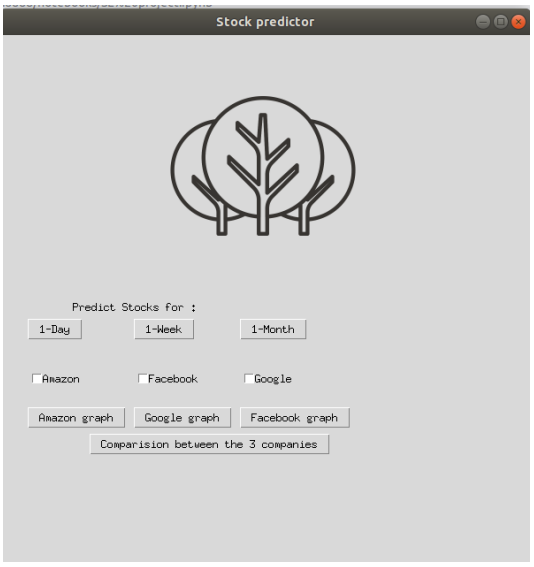

Illustration 1: Home Page

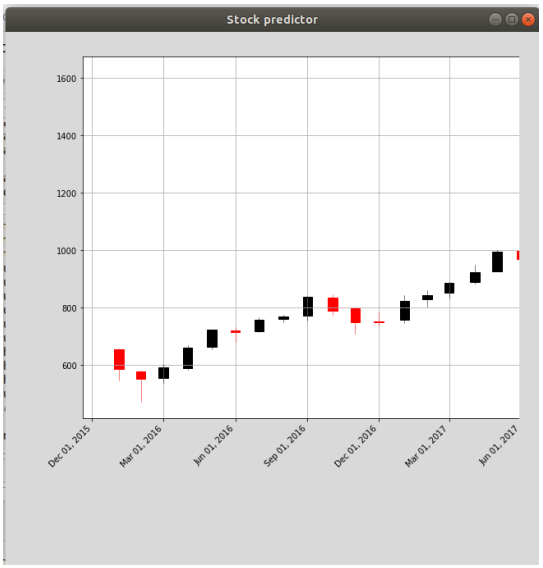

Illustration 2: Trends of Amazon Stocks

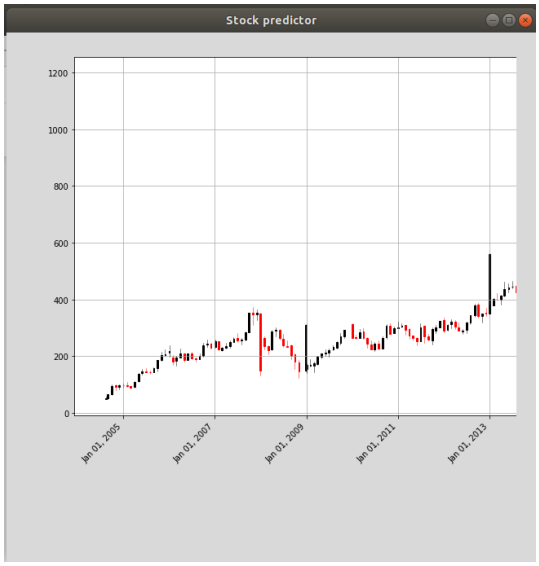

Illustration 3: Trends of Google Stocks

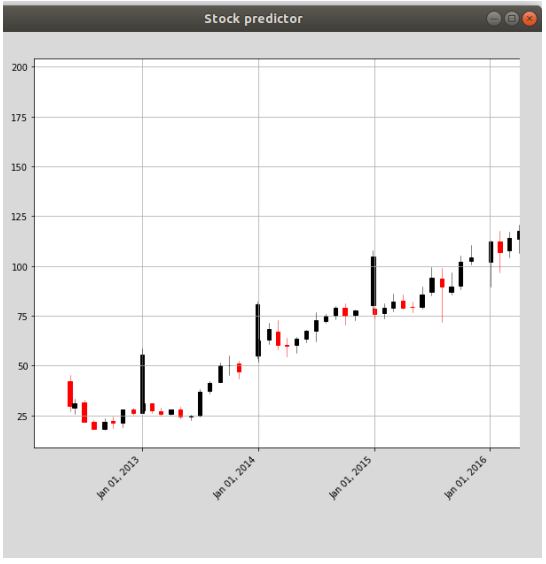

Illustration 4: Trends of Facebook Stocks

Illustration 5: Comparison of closing stocks of all 3 companies