

AUTOMATION OF DAILY STOCK MOVEMENTS WITH SELENIUM

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ABSTRACT

In this project, we attempt an automated approach for simplifying the process of stock value movements in order for the user to help cope with the ever-changing financial market and help keep track of multiple invested stocks with ease. The Automation of Daily Stock Movements works on the concepts of selenium and web drivers. Here the stock movements are sent to a pre-loaded list of E-MAILS in an excel sheet. The stock price is scored from a government or widely recognized website one such website being National Stock Exchange maintained and regulated by the Government of India and the values like Stock starting value, the previous value, and closing value is considered. The values are made into simpler and more understandable tabular form. The client or the organization will get a table with the stock values taken from the National Stock Exchange (NSE). Thus making a tedious and hectic process of crawling through the web for every invested stock into a much simpler and manageable process.

Keywords: Selenium, NSE (National Stock Exchange), Automation, Web-drivers.

1. INTRODUCTION

The financial market is a volatile, composite system and is influenced in an unknown number of ways and is always in a constant state of flux and this makes it highly unpredictable to know the value of stocks or to invest in a particular stock or to keep track of those already invested in. These changes depend on various social, geographical, and political factors which in turn affect the stocks value drastically, and having to keep tabs on these various changes might not be an easy process as it involves checking each stock individually. To make this time-consuming process into a simple, processed, and understandable source of information, we introduce the concept of selenium and web-drivers and this process would be even more steadfast when automated which the proposed program would do.

2. PROPOSED SYSTEM

Compared to the existing project we did a lot of changes in this current project. In our project, we will analyze the company stock website and scrap the values. Not only one company like that how many companies you want we can do that. After getting the data the information that is included in the report is to be emailed every morning or any particular time. In the existing project, it will analyze the ranking of the company .it will consider only volume price value for ranking. here we are getting closed price value, Buy Quantity, Sell Quantity, Previous Close, Open Price, Change value, and along with the calculation of volume price.

3. METHODOLOGY

As a source of information following steps are taken to collect the information about the stock market volatility and changes in the stock values that happens every second. To begin with, data collection started with us defining what this program is and what are the steps involved in preparing it. We chose the domain and the topic “Stock Market Value Fluctuation” for the base survey of the project. Polled by the collection of numerous articles from journals on the chosen topic. Then for further reference, electronic resources were consulted for collecting articles such as emerald, JCCC@UGC In fonet, Open-Jgate, Directory of Open Access Journals (DOAJ), etc. After the cross-referencing of the entries of the articles to the considered databases final report on the literature is produced.

The study of literature on “Automation of Daily Stock Movements with Selenium” in general and in the field of library and information science particularly revealed several efforts made by the scholars in different discipline. The literature survey proved to be vital to collect a plethora of journal’s article about stock movements and stock volatility on “Automation of Daily Stock Movements with Selenium”with base abstract. The main aim of this collection is to provide a guideline and brief information of for the preparation of the system to be precise and exact.

4. MODELING AND ANALYSIS

A general flow of execution for the proposed system is presented in this section.

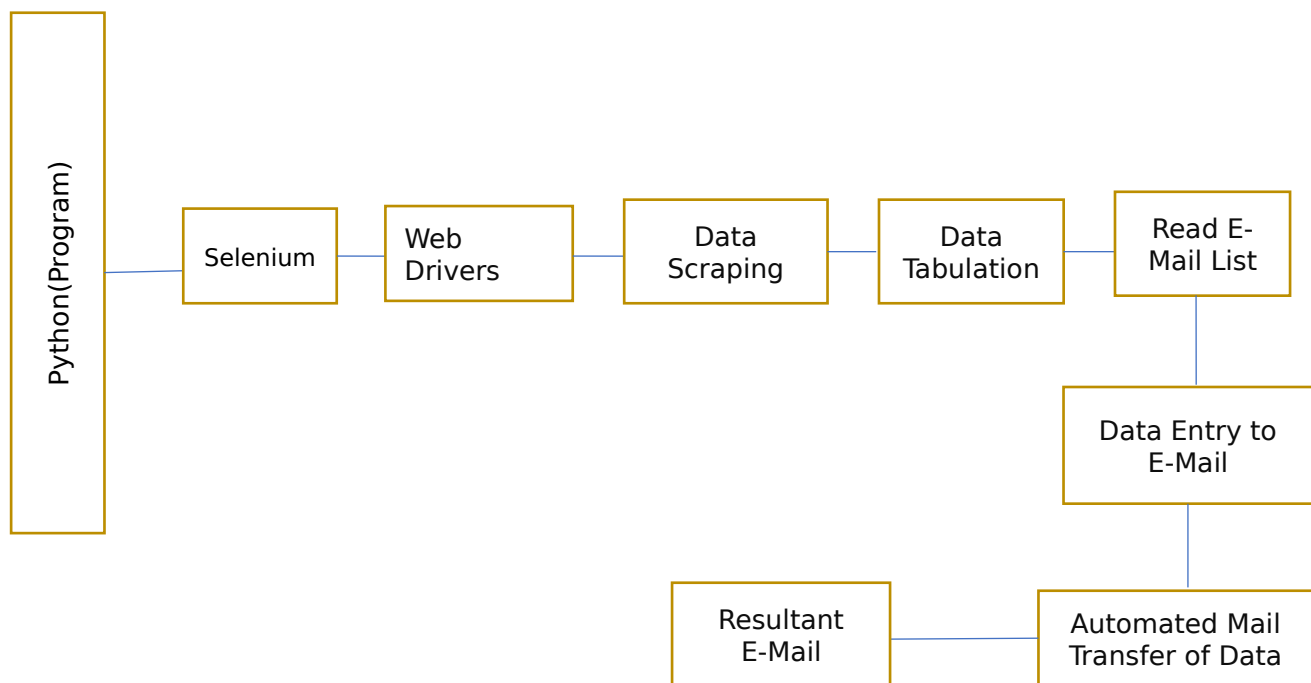


Figure 1: General Flow of Execution

Python - In this project the core of the program is done with Python programming language.

Selenium - It is used to control web browsers and perform browser automation.

Web drivers - This Selenium Web-Driver tool is used to automating web application testing to verify that it works as expected. It supports many browsers such as Firefox, Chrome, IE, and Safari.

Data scrapping- In this we will scrap the required data from the website that should be sent to mails. Ex: buy quantity, total, sell quantity, previous close, open price, change.

Data Format using HTML - In this step using HTML we will write a piece of code for data that was scrapped in the previous step. The data will be sent to mails in tabular form.

Reading E-Mail ID's - Here in this step using pandas we will get the required mail ids from database to which the above date should be sent.

Sending mails-The above data will be mailed to mentioned email ids present in the database.

Mail sent- The mails with the processed data have been sent successfully.

5. ANALYSIS

This project provides an example of how one can utilize it to save time in your analysis process. Since the “analysis process” is different for every investor, we won’t spend too much time focusing on our analysis here. The on-balance volume technical indicator that we are calculating in the analysis is used to relate the volume and price of a stock. It is a relatively simple calculation. First, decide the amount of time that one want's to observe the stock. We chose to look at the last ten days of data for each stock. If the day’s opening price for a company is higher than its closing price it will add the day's volume to the total. If it's less, the volume is subtracted from the total. By the end of the ten days, you have a picture of each stock's cumulative volume. In order to better compare each stock, we are also normalizing the volume before adding or subtracting it.

6. RESULTS AND DISCUSSION

In this proposed program, we are extracting the details of a given number of stocks with specified details and imprinting them on a table with the help of a per-defined format of HTML code with the required number of values and automate the process of sending this tabulated data to specified E-Mails with selenium.

- Python being one of the best and easily understandable language is used here so as to help both the team and the future users to easily manipulate and customize the code to ones own utility.
- Selenium as a framework helps integrate perfectly with python and work flawlessly in scraping and producing desired output.
- The entire project is processed keeping in mind current and future requirements and allowing it to be FOSS (Free and Open Source Software) from the ground.
- Figure 2 depicts the actual processed data in the said tabular format.



Dear,
pre_open_market on 11-05-2022.

NSE INDIA QUESS.		
Buy Quantity 5,458	Total	Sell Quantity 5,931
Previous Close 654.70	Open Price 647.85	Change -1.05%

I

Teamlease Services Ltd.		
Buy Quantity 798	Total	Sell Quantity 227
Previous Close 3,538.85	Open Price 3,556.55	Change 0.50%

Security & Intelligence Services (India) Ltd.		
Buy Quantity 7,702	Total	Sell Quantity 5,956
Previous Close 481.45	Open Price 483.90	Change 0.51%

Thanks & Regards,
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Figure 2: Resultant Data Table

7. CONCLUSION

Data from various sources is collected and processed through the program to be converted into a simple and understandable tabular format which is done with simple HTML code and then the data i.e the table turn is fed into the Pre-Declared E-Mails from the Excel sheet to be sent.

8. REFERENCES

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