



Improved Method of Stock Market Data Extraction Based on the Robotic Process Automation Technology

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Abstract: A Stock Market is one of the most important ways for stock exchange where stockbrokers and traders can buy and sell shares of stock, bonds and other securities. Robotic Process Automation (RPA) process of stock market will help to extract the data from the stock market website. RPA is a process in automation, in which the process emulates user actions within graphical user interface to achieve the desired result. In this paper the stock market exchange data will be extracted from the website by the process automation. This paper describes the improved method of stock market data extraction in a faster and more reliable way.

Keywords: Robotic Process Automation, Stock Market, Data Extraction

1. INTRODUCTION

The Robotic Process Automation is the process of automation technology which plays a major role in the business side. It is the automation process of using the developed and assigned bots. It will perform the repetitive tasks of data entry processing and then, perform the automation by repeating those tasks.

It will reduce the costs and increase the operational performance with some changes in the technology, particularly when open source solutions that do not require license costs are used. A Software robots are assigned with tasks which are repetitive process of workflow technology. The RPA technology with artificial intelligence are making it easier for businesses to take advantage of the benefits of RPA without dedicating a large budget for developing work. RPA is an automation process of doing the repetitive tasks.

It makes a great influence on the business. When increasing the loads, people tend to make more and more mistakes, while the robot will continue to work stably. The Robotic processes will imply the exclusion of a person from the decision-making process. RPA technology is widely used in various industrial areas due to its advantages. For example, it is used in the human resource management. The robot will search on the sites for a resume with required skills and, when the suitable candidate is found and then it will send them an appointment for meeting with a recruiter, and the recruiter receives a candidate's resume. The robot will also

add and manage information about the employees in the accounting systems of the company and it accurately changes a status.

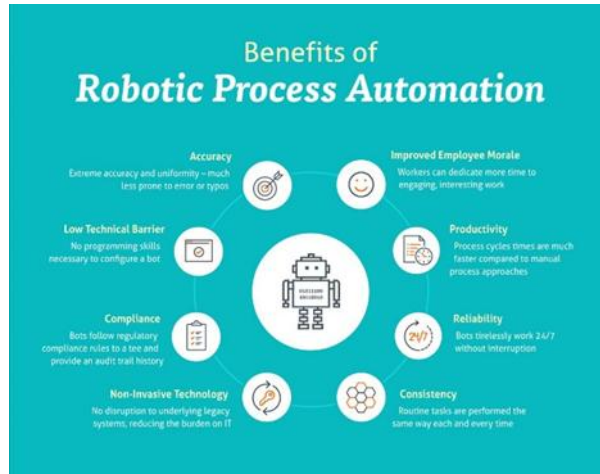


Fig. 1. Business processes in which RPA can be used

The robots can execute a wide range of tasks, for example the information of the financial and accounting systems, where the initial processing of orders and integration with legacy and low level systems can be done. The Robotic Process Automation has the benefits of extreme accuracy and uniformly much less prone to error. It improve employee morale of workers can dedicate more time to engaging in the interesting work. It is a low technical barrier with major no programming skills necessary to configure a bot. It also helps in productivity of the process cycles times which are much faster compared to manual process. The compliance of bots follows regulatory compliance rules to a tee and provide an audit trail history. The consistency has the routine tasks are performed the same way each and every time.

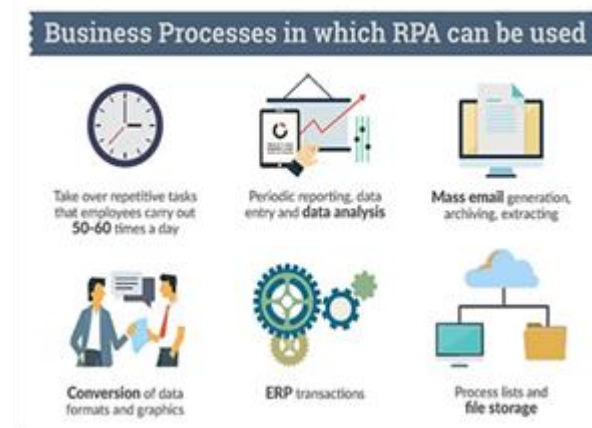


Fig. 2. Benefits of Robotic Process Automation

2. ROBOTIC PROCESS AUTOMATION IN STOCK MARKET

Robotic Process Automation will use the object cloning tool for extraction of a data. It will launch to the corresponding site of the stock market and will capture the data from the site. The path is set to launch the website. The open spreadsheet command will help to open the Excel file and the extract data and its values are stored in the Excel sheet.

Investing in a good stock but at a bad time can have disastrous result, while investing in a stock at right time can bear more profit. Financial investors of today are facing this problem of trading as they do not properly understand as to which stocks to buy or which stocks to sell in order to get optimum result. These are things happening in the share market exchange and so, the Robotic Process Automation technology will help to extract the data and its values from the share market exchange website.

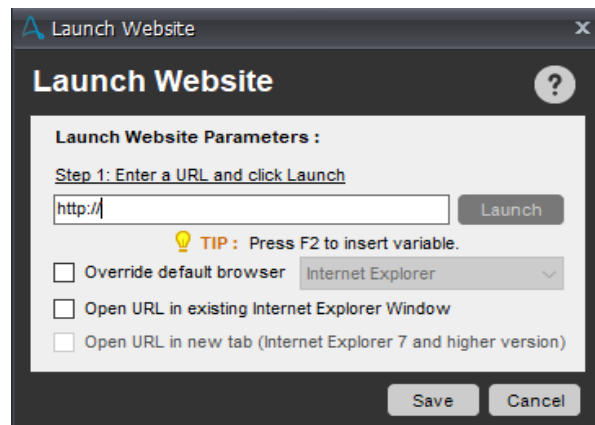


Fig. 3. The process of launch website

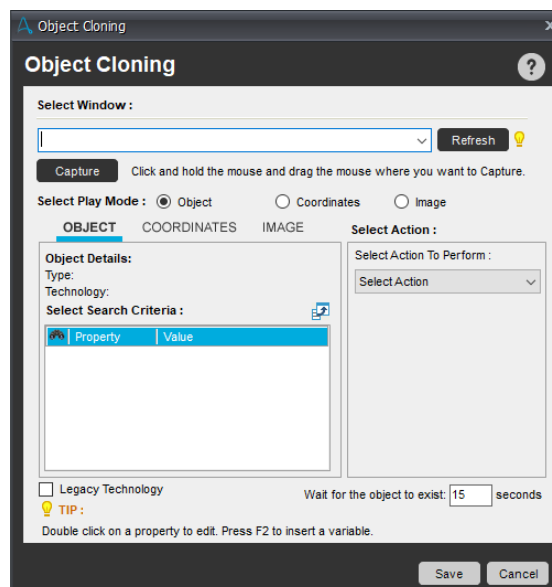


Fig. 4. The process of object cloning tool

The process automation is performed by the bots of doing the repetitive tasks of extracting the data and its values from the stock market exchange website which is instructed by the bot users. By using software robots the extraction of stock market data and its values where extracted in large volumes of data. It also eliminates the unwanted data.

It will continuously monitor the stock market exchange website for any changes in a key data sources in the share market. It implements bots in hours and with no much coding. The robots

will extract the data and its values from the share market exchange as much faster and more reliable.

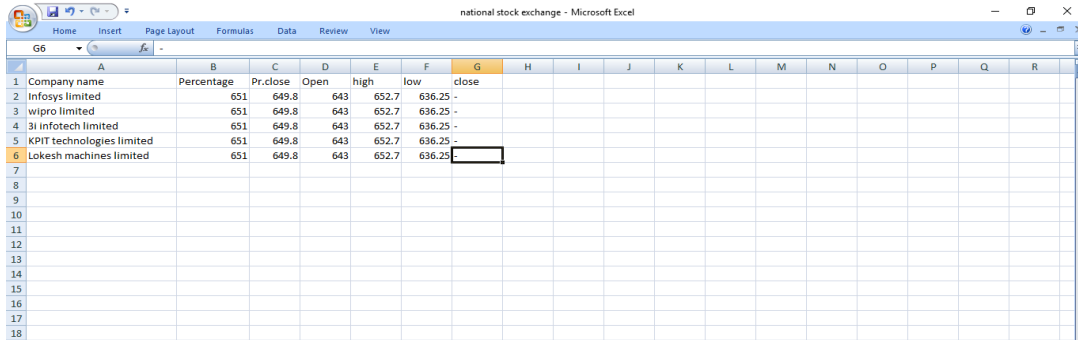


Fig. 5. The process of open the excel sheet

The Robotic Process Automation of Stock market exchange, the extraction of data and its values are automated by the task bot. It will perform the task by launching into the stock exchange (NSE India Website). Now, it will capture the data and its values in the website by using object cloning tool in the Robotic Process Automation Technology. Then, it will open the Excel sheet and the extracted data are stored in the Excel sheet where the path of the Excel is set by the user. Where, the operation is performed by the bot which do the repetitive task of extracting the data from the stock market exchange website and storing the data and its values in the Excel sheet.

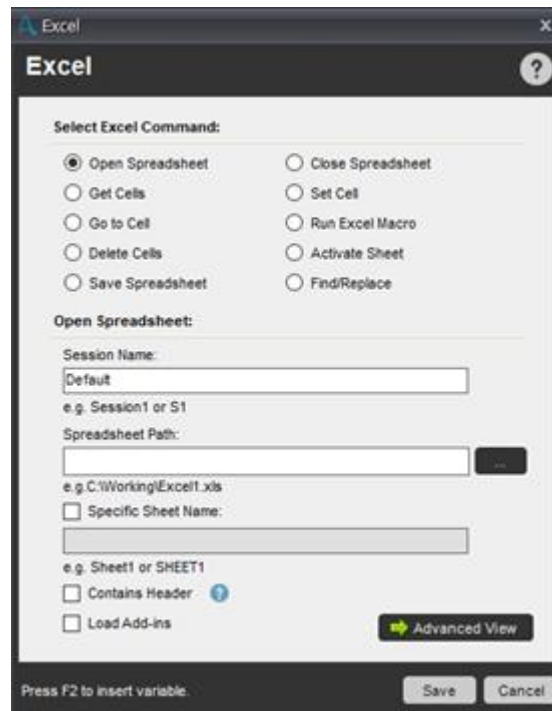


Fig. 6. The excel sheet of extracted data and values

3. ARCHITECTURE

The process of Stock market data exchange extraction is followed by:

1. Launch to the Stock market data exchange website.

2. The object cloning tool is used to capture the data and its values from the stock market data exchange website.
3. Now, the extracted data and its values are allowed to store in the Excel sheet.
4. This process is the repetitive workflow of extracting the data.



Fig. 7. Architecture model of extraction of data

FLOWCHART

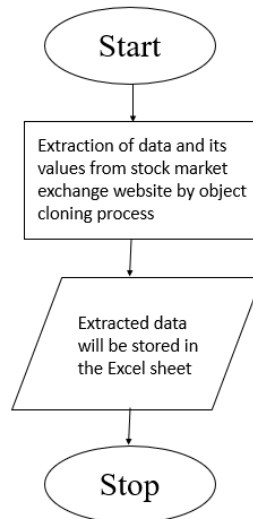


Fig. 8. Workflow of extraction of data

4. ROBOTIC PROCESS AUTOMATION TOOLS

There are RPA Tool which is based on following 4 parameters:

- 1) Data: It is easy of reading and writing business data into multiple systems.
- 2) Type of Tasks mainly performed: It is an ease of configuring rules-based or knowledge-based processes.
- 3) Interoperability: A Tools should work across multiple applications.
- 4) Artificial Intelligence: The Build-in AI support to mimic human users.

5. APPLICATIONS OF RPA

It is used in the Healthcare Industry and the Automation process plays a role in automating the patient registration and billing. It is also used in Human Resources Industry and the Automation process will automates the new employee joining formalities, payroll process, hiring shortlisted candidates. It plays a vital role in Insurance Industry and it automates the claims processing and clearance and the premium information. It is used in the Manufacturing and Retail Industry and it will automates the bills of material and the calculation of sales. It also used in the Travel and Logistic of doing the automation of ticket booking, passenger details and accounting. It is used in the Banking and Finance services of processing the automation of cards activation, frauds claims and the discovery. It plays a major role in the Government of processing the automation process of change of address and the license renewal.

6. CONCLUSION

In this article the main approach to the extraction of the data from the stock market exchange by Robotic Process Automation. The automation process will help to extract the data from the stock market exchange website and it will store the data and its values in the Excel sheet. It increases the workflow and the extraction operation is performed by the task bots in the Robotic Process Automation Technology. It is more reliable and the most effective of performing the tasks by bots. It will perform the tasks by using bots and no coding approach is needed. It is a repetitive task of extracting the data from the stock market exchange and it will continue the task of extraction of data and its values.

7. REFERENCES

- [1] D. Peng, "Analysis of Investor Sentiment and Stock Market Volatility Trend Based on Big Data Strategy," 2019 International Conference on Robots & Intelligent System (ICRIS), Haikou, China, 2019, pp. 269-272.
- [2] C. Lu and Zhifeng Zhang, "The stylized properties of artificial stock market comparison with Chinese empirical data," 2010 2nd International Asia Conference on Informatics in Control, Automation and Robotics (CAR 2010), Wuhan, 2010, pp. 481-484.
- [3] I. Seilonen, T. Pirttioja, P. Appelqvist, A. Halme and K. Koskinen, "Distributed planning agents for intelligent process automation," Proceedings 2003 IEEE International Symposium on Computational Intelligence in Robotics and Automation. Computational Intelligence in Robotics and Automation for the New Millennium (Cat. No.03EX694), Kobe, Japan, 2003, pp. 614-619 vol.2.
- [4] Robotic process automation "Wikipedia"
- [5] M. Merdan, W. Lopuschitz and E. Axinia, "Advanced process automation using automation agents," The 5th International Conference on Automation, Robotics and Applications, Wellington, 2011, pp. 34-39

