

Automation with RPA (Robotic Process Automation)

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Abstract— We're in the midst of a digital revolution in which technology is moving forward at exponential speed. Robotic Process Automation and Artificial intelligence is gaining in acquisition. Robotic process automation is a key component of the digital revolution, driving much of the long-tail process automation that were previously impossible to achieve. Robotics is a field of engineering that deal with design and application of robots and the use of computer for their manipulation and processing. Robots are used in industries for speeding up the manufacturing process. Automation and Robotics Engineering is the use of control systems and information technologies to reduce the need for human work in the production of goods and services. The Robotic process automation technology is based on perception of software robot. RPA can be used to automate workflow, infrastructure, back office process which are labor intensive. Basically involving RPA has eliminated lots of manual effort which helps business to keep pace with current technology trends. In this paper I will explain how Robotic automation process will help to save manual exertion and time.

Keywords—Robotic Process Automation, Business Process,Service Automation,Software Robot.

I. INTRODUCTION

The real worry of the business was to adjust the cost proficiency with other execution objectives such as scalability, flexibility, security, and compliance. So the industry has tried different options to balance the cost efficiency and service automation using RPA is one of them. RPA is a completely software-based solution. RPA's core value lies in its ability to automate the repetitive manual tasks of accessing, aggregating, updating, analyzing and processing data across systems, which is currently performed by millions of human workers.

Basically, RPA refers to configuring a software robot which will actually do the job mostly which is repetitive in nature. There are two key things to consider,

- 1) one minute of work for a robot is equal to approximately 15 minutes manual work.
- 2) This IT solution lends itself to quick implementation lasting only week.

Consider, for example, a service desk agent in charge of install requested software on a different machine as per request. So the responsibility of the service desk agent would be logging in the user machine remotely and install the requested software. Typically, service desk agent thousands of request in a month. Now imagine we can configure a software robot which will do the same process. If RPA software configured properly, the RPA software should do the work better, faster, and much cheaper than the HR

specialist. At the same time, the service desk agent can focus on some non-routine task.

RPA has different capabilities some major are recording (capturing the human movement on the computer and perform the same step when required), web scraping (Web data extraction). Software Bots are also capable of,

- Launching and working with Application like (Word, PDF, and Excel etc.).
- Working with Image Processing.
- Working with Data Processing.

Section I contain the Introduction of Robotic process automation

Section II contain some essential features of Robotic process automation.

Section III contain Methodology with flow with flowchart.

Section IV contain result and discussion.

Section V contain conclusion with some future scope.

II. RELATED WORK

RPA application has been used in the different business process like workforce management, billing system, keeping employee record over last 6 years. These processes are majorly back office process and support process. As per the Deloitte's third annual RPA Survey, 53% of respondents have already started their RPA journey and 78% of those who have already implemented RPA expect to significantly increase investment in RPA. According to ISG partner

Andreas Lueth, RPA is delivering improved outcomes for enterprises across Europe. The recent research shows many more businesses will be taking advantage of the RPA technology by 2020. In the research study, more than 500 business leaders from Europe were surveyed by ISG and Automation Anywhere, an RPA software provider firm, with an aim to study their adoption of RPA technology and services.

III. METHODOLOGY

We have developed one software robot using RPA which will manage IT assets request form new employee in an organization to describe the effectiveness of RPA. The robot will monitor a mailbox once it gets an IT assets request from a new employee it will first extract the required information and store that to the database. After that, it triggers a mail to concern department. We have used parse function to extract appropriate filed from email text. The Parse function used the concept of Regular expression to extract the desired text. For Example, to parse “Employee Name-” from the mail text we used regular expression ‘(? <=^ Employee Name-).*\$’. This regular expression matches the keyword “Employee Name” and then extract the information which is followed by the keyword.

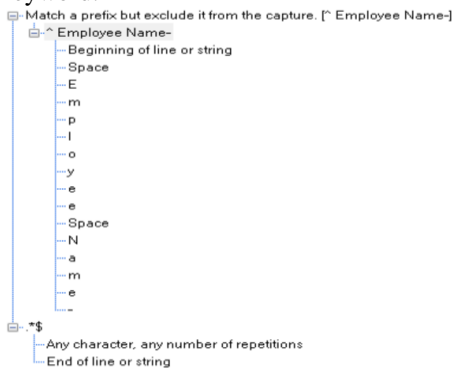


Figure1. Meaning of the given Regular expression text in structured view.

We have used Gmail for mails, Winautomation (RPA tool), Windows PowerShell.

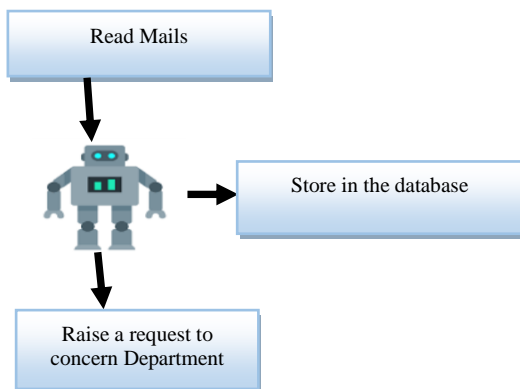


Figure2. High level view of designed robot .

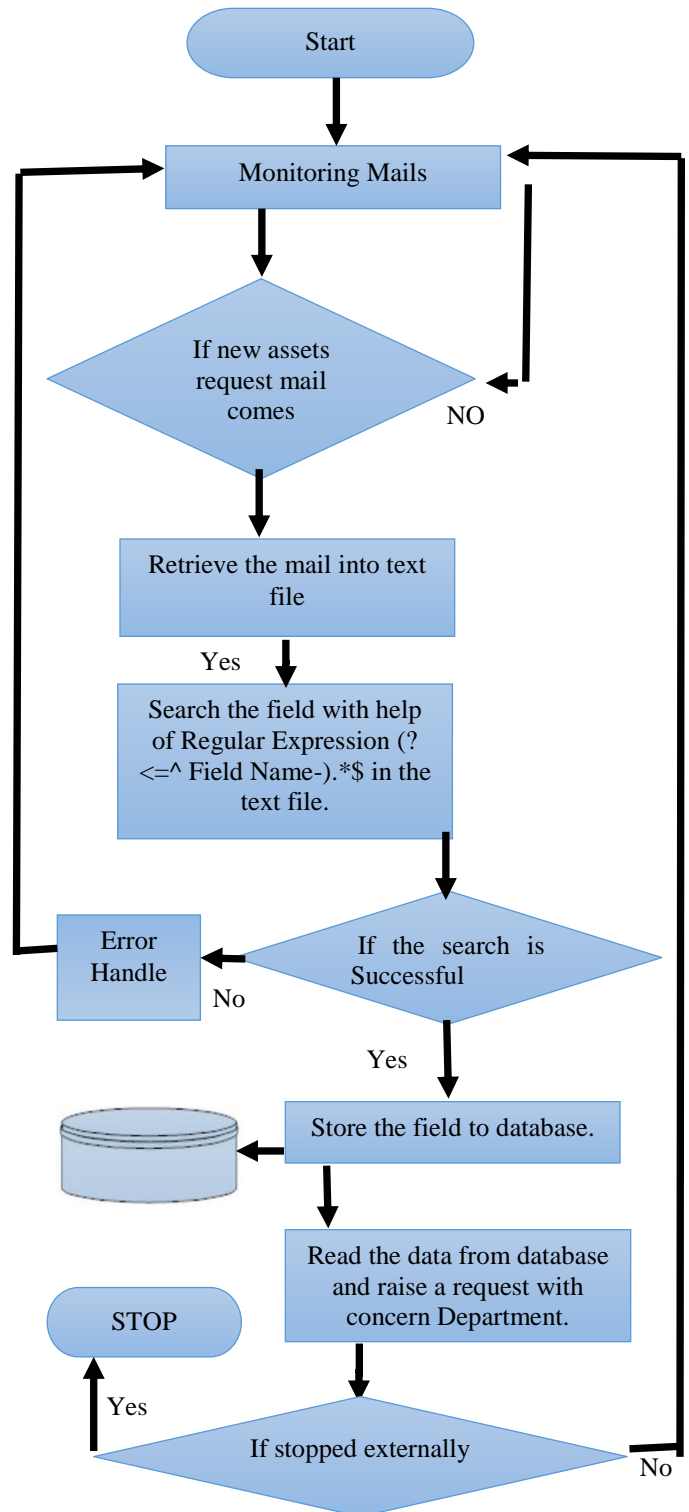


Figure3. Flowchart of the Designed robot .

IV. RESULTS AND DISCUSSION

On completion of deployment of the robot we have monitored the time taken by the robot to perform the particular task. As per our observation the total time taken by the robot was only 43 secs to read a mail and parse the appropriate text and store it in the database without any human intervention whereas if manual effort is utilized for the same then time can consume minimum 5 mins to complete the same job. Now if I multiply the mail volume by 100 times it would save a lot of time, effort and money. Here are some useful screenshots,

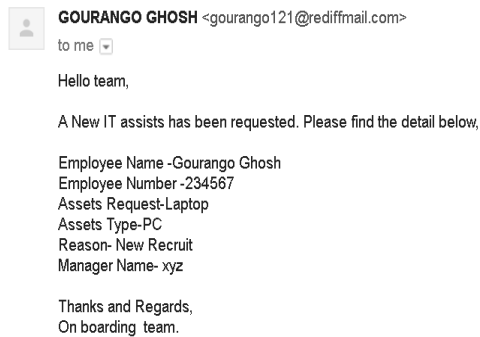


Figure4. The new assets mail structure.

Request...	Employe...	Employe...	AssetsRe...	AssetsTy...	Reason	Manager...
1	Gourang...	234567	Laptop	PC	New Recr...	xyz
2	Sourav G...	345678	Laptop	PC	New Recr...	xyz
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Figure5. Database view of stored data from mails.

V. CONCLUSION and Future Scope

So we can perceive how compelling RPA was with a specific end goal to take out Manual repetitive exertion and save time and money. Robots are good at extracting, processing and integrating information but they do not really understand the information. As a result, it cannot read or parse the text which is in an unstructured manner. Hence, there is a considerable measure of research work are occurring in cognitive document automation (CDA). CDA is a combination of artificial intelligence (AI) and software robots that automate the acquisition, understanding, and integration of documents and electronic data needed in business processes. In the future, we can do more research to integrate machine learning, natural language processing with robotic process automation and we can make a more robust robot.

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Mr. G. Ghosh ,pursued Masters of Computer Application from University of Burdwan in the year 2015 , He is currently working as Software Engineer in Mphasis. He has published 2 papers in IEEE conferences and it’s also available online. His main research work focuses on Robotics,Artificial Intelligence,Mechine learning Cryptography Algorithms. He has 3 years of indutry experience . He has worked on different technologes like Network Security ,Robotic Process Automation , Cryptography.

