IJARSCT
ISSN (Online)
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Vol. X, Issue xx, <Month> 2022
Impact Factor

Robotic Process Automation (RPA) in Education Industry

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Abstract: Robotic Process Automation (RPA) is a software technology that makes it easy to pick, feed, and manage software robots that mimic human movements while interacting with digital systems as well as software. RPA in education can help teachers and administrators perform tasks and procedures automatically which may be difficult for them. Whether it be administrative, academic duties, or fund hr services, anyone can easily change it with the changing robot system. It helps educational institutions easily manage and handle high-volume activities. This paper shows the implementation of RPA in automating the entire process required in online meeting from scheduling online google meeting to sharing the meeting link in WhatsApp group and tracking the attendance of students in meeting.

Keywords: RPA, Automation, Process, Uipath Studio

I. INTRODUCTION

Education is important to shape the global citizens of tomorrow. The education sector has evolved by adopting technology in the form of smart boards, online classrooms, school websites & mobile apps, online assessments, and much more. More than half of the education administrators' time is spent on average a full workday per week on manual and repetitive tasks.[13]

The education industry has a pressing need and scope for automation and there is also a responsibility to keep up with the pace of this digitally-driven and rapid-changing world. [13]

Technology is playing an important role in today's modern education system in automating rule-based, repetitive, time-consuming tasks. You can eliminate paperwork and manual processes using automated education systems the software can be used for admission, attendance, scheduling meetings, mailing, assignment, grades, finance, etc. [17] automation is the solution for everyday tasks that improve the educational institution's efficiency and productivity, saving time and allowing highly skilled staff to work on other critical tasks. [17]

Robotic process automation (rpa) is a software solution, that works as a virtual employee that is customized to perform repetitive, computer-based tasks, reliably performing high-volume tasks and processes without requiring any attention, resulting in increased productivity of efficiency and quality improvements over existing ways. [18] rpa platforms are crucial in the development of rpa-based applications.

I.I. Project Purpose

The purpose of this project is to implement activities involved in scheduling automatic online google meet for students with the use of robotic process automation. A virtual robot will have the ability to execute a process without any human intervention means there is no ambiguity to execute the process. The purpose behind this implementation was to eliminate the time and human intervention in the process of online google meet schedule.

II. LITERATURE SURVEY

Sutipong Sutipitakwong and Pornsuree Jamsri," The Effectiveness of rpa in fine-tuning tedious tasks", 2020 IEEE It was proposed that the process of automated work management and ai processes would result in a more efficient and effective workflow while lowering the error margin. [15]

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Tanya Nandwani, Manu Sharma,Ms. Teena Verma, "Robotic Process Automation – Automation of data entry for student information in university portal", SSRN. This paper demonstrates the mechanization cycle for investigating the result of the understudy's assessment. The computerization cycle accepts contributions in the form of college results in pdf format.[8]

Judith Wewerka, Manfred Reichert, "Towards quantifying the effects of robotic process automation", 2020 IEEE 24th international enterprise distributed object computing workshop (EDOCW). The goal of this paper is to provide empirical insights into improvements and degradation of business processes achieved in twelve rpa projects in the automotive industry.[16]

III. APPLICATIONS OF RPA

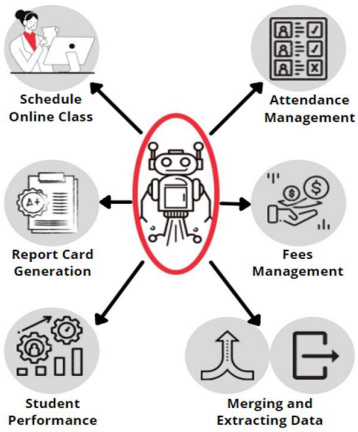

Fig 3.1 RPA Application web

A. Scheduling Online Meeting Classes
B. Attendance Management System
C. Monitoring Student Performance
D. Report Card Generation
E. Fees Management
F. Data Merging From Multiple Sources.
G. Extracting Structured Data From Sources.
H. Scraping Data From the web.

IV. REQUIREMENT SPECIFICATION

A. Uipath Studio: -

Fig 4.1 UiPath Studio Application

Uipath studio is a highly extensible robotic process automation tool that helps to automate desktop or web applications. It offers global enterprises the to design and deploy a robotic workforce for their organizations. [19]

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Uipath includes a community edition that comes with a drag and drops feature. So, users do not need programming knowledge to automate the tasks using uipath. The community edition is free for people who want to learn, practice, and implement rpa. [20]

Features:

- It provides multiple hosting choices, like cloud environments, virtual machines, terminal services. etc.
- Supports web and desktop applications.
- Supports auto-login feature to run bots.
- Also, it includes a scrapping solution that works with .Net, Java, Flash, PDF, Legacy, and SAP, with maximum accuracy.

B. Browser: -

Fig 4.2 RPA Application web

As Chrome is the most widely used web browser than others. Keeping this in mind the implementation is done on the Chrome browser. Uipath Web Automation extension is used which helps to create browser automation in Chrome.

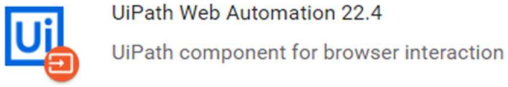

Fig 4.3 RPA Application web

This UiPath extension expands automation capabilities for Chrome. It facilitates native detection of UI elements when designing automation for web applications using UiPath Studio. This extension is part of a solution and only works together with UiPath Studio.
Also, one more Chrome extension was used to track attendance.
The entire process of Google Meet is done on Chrome.

C. WhatsApp Application: -

Fig 4.4 WhatsApp Application

WhatsApp Application to carry out message sending activities on specified groups.

V. METHODOLOGY

- Literature survey was done with the intention of verifying if a similar hypothesis had been raised previously, or if RPA applied to education.
- Found no evidence to prove that no model is available. The absence of an RPA model provided the opportunity to present the idea.
- Identify the desired situation and need to apply RPA in education.
- Requirement Analysis was done.
- model of the RPA is presented.
- Finally implemented and finished.

VI. RESULT

Scheduling Online classes and Informing students about meetings and events by sending automatic messages on WhatsApp and taking the attendance of joined attendees. This process increases efficiency and ensures a seamless experience with the help of RPA.

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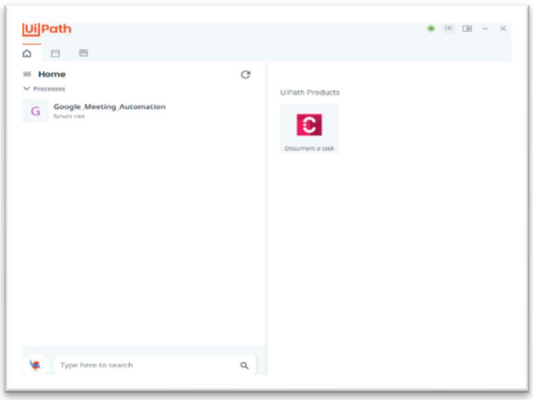
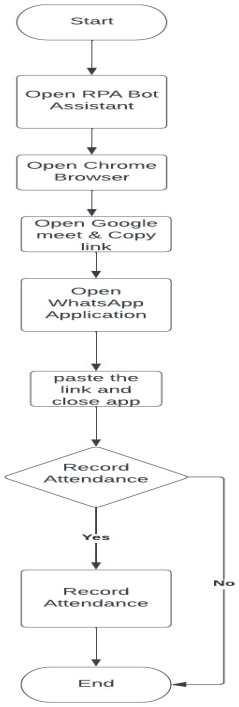


Fig 6.1 UiPath Assistant Bot

A. Process: -

- The task is Assigned to the UiPath Assistant Bot which carries out the structured process of scheduling an Online google meet.
- The user only just needs to click the run button on UiPath Assistant Bot to carry out the process.
- Firstly, it will open Google Meet link in Chrome browser and it will initially turn off both mic and the camera.
- It will then copy the meeting link.
- Then it opens the WhatsApp Application and searches for the specified group name on the WhatsApp search bar, selecting and pasting the link.
- It will provide the custom message like,' Subject Code,' Teacher Name', Join meeting quicky', etc.
- Closes the WhatsApp Application.
- Asks user if he/she wants to save the attendance or not.
- If yes it will Track attendance at a specified time.
- If no then no attendance will be tracked.

B. Flowchart: -



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VII. FUTURE SCOPE

Although RPA is currently used in a variety of domains, fully implementing it is a significant challenge. RPA's potential in educational institutions is still being invested globally.

RPA is commonly viewed as a way for businesses to relieve employees of repetition load, high volume functions such as entry, sending, production of scheduled reports, etc. RPA's automation capabilities enable businesses to provide higher quality services to their customers on time. Because of this, the customer experience has improved due to significant improvements in SLA and Better management capabilities.

Many RPA tools provide drag-and-drop technology for automated processes. It allows you to create automated workflows without inserting small codes.

RPA reduces cost and also provides more value addition to the overall organizational profit and improves efficiency and effectiveness. Research shows that implementing RPA drives about 25.0% to 60.0% cost savings, improving the output of applied functions.

RPA eliminates data inconsistency between disparate sources and logs all actions performed by software robots while automating. This enables employees to proactively identify and manage compliance issues, as well as to conduct regular internal audits. These RPA features assist companies in a variety of industries, whether it is a healthcare company required to meet safety and privacy regulations, an insurance provider required to meet certain regulations, or an educational institute required to maintain data protection.

While automating tasks using rpa it will benefit the teachers in the long run it will allow them to spend less time on routine tasks and more time with their students.

VIII. CONCLUSION

Using RPA one of the most used tasks in the education of scheduling online meetings is automated. This paper shows the potential scale and adoption of RPA technology in the education sector to improve its functionality and efficiency.

- This paper offers a perspective on the potential
- The scale of RPA technology within higher education institutions to make them more functional and efficient.
- RPA platforms had and will have an important role in the development of RPA-based applications.
- There are currently many RPA platforms available; selecting the most appropriate platform to use could be a real challenge, necessitating a comparative study based on relevant factors.

To address RPA in the context of education, we considered various potential beneficiaries of this technology and presented only a few use cases, but some with high value and certain benefits. Several obstacles must be overcome to take advantage of the opportunities that RPA can provide in higher education.

Finally, educational institutes are moving toward automation, which benefits all staff, administrators, and students in their various educational activities. RPA has the potential to significantly reduce human reliance on mundane tasks while increasing productivity in less time. Nonetheless, the impact of RPA in the education industry is insignificant.

REFERENCES

1. Sutipong Sutipitakwong and Pornsuree Jamsri," The Effectiveness of RPA in Fine-tuning Tedious Tasks", 2020 IEEE
2. Saurabh Gupta, Sangeeta Rani, Dr.Amit Dixit, "Recent Trends in Automation - A study of RPA Development Tools", 2019 3rd International Conference on Recent Developments in Control, Automation & Power Engineering (RD CAPE)

3. Judith Wewerka, Manfred Reichert, “Towards Quantifying the Effects of Robotic Process Automation”, 2020 IEEE 24th International Enterprise Distributed Object Computing Workshop (EDOCW)
4. Yi-Wei Ma, Dan-Ping Lin, Shiang-Jiun Chen, Hsiu-Yuan Chu, Jiann-Liang Chen, “System Design and Development for Robotic Process Automation“, 2019 IEEE International Conference on Smart Cloud.
5. Bernhard Axmann, Harmoko Harmoko, “Robotic Process Automation: An Overview and Comparison to Other Technology in Industry 4.0”, 2020 IEEE
6. Neethu V Joy, Sreelakshmi PG, “Robotic Process Automation role in Education Field “, 2020 IJERT
7. K. Palanivel, K. Suresh Joseph, “Robotic Process Automation to Smart Education”, 2020 IJCRT
8. Tanya Nandwani, Manu Sharma,Ms. Teena Verma, “ROBOTIC PROCESS AUTOMATION – Automation of Data Entry for student information in University portal”, SSRN
9. Cornel Turcu, Cristina Turcu, “On Robotic Process Automation and its Integration in Higher Education “, ICT 4777
10. Mr. Wasique Ali Ansari, Mr. Paritosh Diya, Mr. Sahishnu Patil, Dr. Sunita Patil, "A Review on Robotic Process Automation- The future of Business Organizations", 2nd International Conference on Advances in Science & Technology (ICAST-2019)
11. Marina Cernat, Adelina-Nicoleta Staicu, and Alin Stefanescu, "Improving UI Test Automation using Robotic Process Automation", ICSOFT 2020 - 15th International Conference on Software Technologies
12. Volodymyr Leno1, Supervisors: Marlon Dumas, Fabrizio Maria Maggi, and Marcello La Rosa, "Multi-Perspective Process Model Discovery for Robotic Process Automation" CEUR-WS, Vol-2114
13. https://www.connectis.ca/rpa-education/
14. Palanivel Kuppusamy and Suresh Joseph K. Robotic process automation to smart education. page 377
15. Sutipitakwong, Sutipong. (2020). The Effectiveness of RPA in Fine-tuning Tedious Tasks PPT.
16. Wróblewska, Anna & Stanisławek, Tomasz & Prus-Zajączkowski, Bartłomiej & Garncarek, Łukasz. (2018). Robotic Process Automation of Unstructured Data with Machine Learning. 9-16. 10.15439/2018F373.
17. Neethu V Joy, Sreelakshmi P G, 2020, Robotic Process Automation role in Education Field, INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) NSDARM – 2020 (Volume 8 – Issue 04)
18. https://www.ey.com/en_us/government-public-sector/how-universities-are-using-robotic-process-automation
19. https://www.radiatechs.com/technical/robotic-process-automation/
20. https://www.javatpoint.com/rpa-tools