

AUTOMATION OF A COMPLAINT MANAGEMENT SYSTEM USING RPA

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ABSTRACT: The aim of this research work is to design and implement an improved system which will contribute greatly in providing solutions to evaluate the impact of RPA on the complaint-handling process in a school complaint portal. The proposed Robotic Process Automation for a complaint management system and student registration system can help in saving time and automating repetitive tasks. The complaint management system can instantly allow the admin to create different categories instead of doing it manually which takes a lot of time, compared to the automated process which will get the total number of students and complete it within a few minutes. The student registration system saves the admin the stress of opening the browser and typing the login credentials every time a task needs to be done. The 200 students' details were generated and turned into an Excel file within 4 minutes compared to the manual method which takes hours to complete.

KEYWORDS: Robotic, Automation, Processing, Rule Based, RPA.



INTRODUCTION

Traditional manual complaint handling processes often suffer from delays, errors, and lack of transparency. The emergence of Robotic Process Automation (RPA) presents an opportunity to address these challenges and streamline the complaint resolution process. Robotic Process Automation (RPA) is a technology that employs software robots or "bots" to automate repetitive and rule-based tasks, mimicking human actions within a digital system. By implementing RPA in educational institutions' complaint resolution processes, administrators can leverage its capabilities to optimize efficiency, accuracy, and transparency, ultimately enhancing staff experiences.

In general, RPA is a system aimed at automating business processes through business logic and user inputs. RPA applications provide tools for users to define robots (or bots) that can mimic their interactions with applications processing a transaction, manipulating data, triggering responses and communicating with other digital systems. (Boulton, 2018). The first idea of how to automate processes using software came in 1935, when the computer scientist Alan Turing described how a systematic algorithm could work processes more effectively just like with all automation. RPA means replacing processes previously done by humans, but this time done by configuring a robotic software to perform the tasks, interacting between different systems such as spreadsheets, Customer Relationship Management (CRM) systems or Enterprise Resource Planning (ERP) software (Willcocks P. L., 2016).

This research study focuses specifically on the application of Robotic Process Automation (RPA) on the complaint handling process of a school complaint portal. The current complaint handling system in the educational institutions relies heavily on manual processes, resulting in delays, inefficiencies, and inconsistent resolution outcomes. Robotic Processing Automation System not only improves efficiency and eliminates unnecessary paperwork, implementing RPA in a school complaint portal has the potential to significantly improve the efficiency and effectiveness of the complaint resolution process. By automating repetitive and rule-based tasks, RPA can reduce the workload of the administrative staff and enable faster response times.

RELATED WORKS

Van der Aalst et al. (2018) worked on robotic process automation and its role in improving business processes using Artificial Intelligence (AI) and Machine Learning (ML), and in the process encountering the Process Complexity and Suitability. Nunik Afriliana & Arief Ramadhan (2022) studied to provide an overview of the latest trends and advancements in the field of RPA with Cognitive Automation. Brown, M. (2021) published research on the application of robotic process automation and control in various domains in order to provide a platform for the exchange of ideas and experiences related to the use of robotic process automation and control in various applications. Gami, Manishkumar et al. (2019) reviewed the current state of Robotic Process Automation (RPA) and its potential impact on business. Aguirre et al. (2017) developed a RPA software solution to automate rules based business processes that involve routine tasks.



METHODOLOGY

UiPath, an Artificial Intelligence application, was utilized to automate the process in two developed websites: Student registration system and Complaint management system. UiPath was used in automating the extracting of student details and turning it into an excel file in the student registration system; it was also used to automate and create categories, automating the admin login and registering large data of students in the complaint management system.

In essence, UiPath's capabilities were utilized to seamlessly connect to the website, automate login procedures, interact with the website's components, register a large number of students, extract targeted data using data scraping, and efficiently populate an Excel file with the extracted information.

Bootstrap was used to streamline the development process and enhance the overall user experience of the web application. JavaScript plays a central role in the projects; it is used to create interactive, feature-rich, and dynamic web applications that provide a seamless and enjoyable user experience. PHP (Hypertext Preprocessor) as a server-side scripting language to handle various server-side tasks and facilitate dynamic web development.

RESULT

The following are the snapshots of interfaces from the developed RPA system:



Student Login Interface

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kabir Uthman Opeyemi	Complaint Type	Complaint	۷	Faculty	Select Faculty	v
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🖉 Lodge Complaint						
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	Complaint Related Doc(if any)	Choose File No file chosen				
		Submit				

Complaint Interface

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	Complaint No	complainant Name	Reg Date	Status	Action	The termine	4	Abass akando	abc@ubc.com	2016070510500	2017-06-11 03:58:5
	20	kabir Uthman Opeyemi	2023-07-11 01:36:17	Not process yet	View Details		5	Xuou katherine	ayiz@ayiz.com	2017070510604	2017-06-11-04:13:0
	21	Oremuyiwa Oladimeji	2023-07-14 01:37:28	Not process yet	View Details	In Logout	1.1	kabir Ultiman Opeyetti	eycopeyem8@gmail.com	2017070510625	2023-07-11 00-48:
	22	Lola Okunomo	2023-07-19 00:49:18	Not represent unit	View Details		7	OJO ABIODUN ISAAC	sjo@gmail.com	2017070510741	2023-07-14 00:00 5
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Admin Dashboard

Students' List Interface

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Add Category Interface

UIPATH Files for the Student Details Automation

Sign In	
Username	
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Login	

Reg. Date	Matric no	Email	Name	#
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2017-03-28 09:59:14	2017070510601	teslim@gmail.com	Teslim Teslim	2
2017-06-11 03:48:35	2017070510602	demola@gmail.com	demola olaitan	ε
2017-06-11 03:56:05	2016070510500	abc@abc.com	Abass akande	4
2017-06-11 04:13:05	2017070510604	xyz@xyz.com	Xuxu katherine	Б
2023-07-11 00:48:56	2017070510625	ayoopeyemi6@gmail.com	kabir Uthman Opeyemi	6
2023-07-14 00:00:50	2017070510741	ojo@gmail.com	OJO ABIODUN ISAAC	7
2023-07-14 00:02:35	2017070510636	tenten@gmail.com	Oremuyiwa Oladimeji	8
2023-07-14 00:13:28	2017070510800	awo@gmail.com	Awotunde Timileyin	6
2023-07-16 01:08:54	2017070510800	opeyemi@gmail.com	Ayooade Opeyemi	10
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Website to Automate

Process of Extracting Student Details Interface

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Automating Creating of Categories

Uipath File

RECOMMENDATIONS

Based on the achieved objective of this project and the experiences gained during its design and implementation, we wish to make the following recommendations for future improvement. Organizations should consider implementing Robotic Process Automation (RPA) within their complaint management systems to enhance efficiency, accuracy, and dependability. This proactive step will significantly alleviate the challenges faced by both students and staff when navigating through the complaint resolution process.

By automating various aspects of complaint management, RPA can streamline workflows and ensure consistent data validation. This not only reduces the burden on both students and staff but also enhances overall satisfaction. Integrating RPA into complaint management aligns with the pursuit of operational excellence, offering a tailored and robust solution that optimizes time and resources. This approach empowers the organization to address complaints efficiently. As



a result, the utilization of RPA in complaint management can lead to enhanced outcomes, reduced complexities, and elevated stakeholder satisfaction.

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