Form filling Bot

A PROJECT REPORT

Submitted by

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in partial fulfillment for the course

OAI1903 - INTRODUCTION TO ROBOTIC PROCESS AUTOMATION

for the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

RAJALAKSHMI ENGINEERING COLLEGE

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NOVEMBER 2024

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BONAFIDE CERTIFICATE

Certified that this project report **"Form filling Bot"** is the Bonafide work of **"Aadhithya .Rk (220701002)."** who carried out the project work for the subject OAI1903-Introduction to Robotic Process Automation under my supervision.

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Submitted to Project and Viva Voce Examination for the subject OAI1903-Introduction to Robotic Process Automation held on _____.

INTERNAL EXAMINER **EXTERNAL EXAMINER**

ACKNOWLEDGEMENT

Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavour to put forth this report. Our sincere thanks to our Chairman **Thiru. S. Meganathan, B.E., F.I.E.,** our Vice Chairman **Mr. M. Abhay Shankar, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) Thangam Meganathan, M.A., M.Phil., Ph.D.,** for providing us with the requisite infrastructure and sincere endeavouring in educating us in their premier institution.

Our sincere thanks to **Dr. S. N. Murugesan, M.E., Ph.D.,** our beloved Principal for his kind support and facilities provided to complete our work in time. We express our sincere thanks to **Dr. P. Kumar, M.E., Ph.D.,** Professor and Head of the Department of Computer Science and Engineering for his guidance and encouragement throughout the project work. We convey our sincere and deepest gratitude to our internal guides, **Mrs. J. Jinu Sophia, M.E., (Ph.D)** Assistant Professor (SG) Department of Computer Science and Engineering for their valuable guidance throughout the course of the project. We are very glad to thank our Project Coordinator Professor, **Dr. N. Durai Murugan, M.E., Ph.D.,** Associate Professor and Mr. **B. Bhuvaneswaran, M.E.,** Assistant Professor (SG), Department of Computer Science and Engineering for their useful tips during our review to build our project.

Aadhithya .Rk (220701002).

ABSTRACT

The **Form-Filling Bot** is an automated solution created using UiPath to streamline the process of completing and submitting forms. It addresses common challenges such as repetitive manual entry, errors, and delays. By extracting data from structured sources like spreadsheets or databases, the bot efficiently populates fields in online or desktop forms with high accuracy.The automation incorporates error-handling mechanisms to manage issues such as missing or invalid data, ensuring consistent performance. After completing its tasks, the bot generates detailed reports summarizing the status of each submission and highlighting any errors encountered. With scheduling capabilities provided by UiPath Orchestrator, the bot can operate autonomously, minimizing human intervention. This project highlights the potential of RPA to enhance productivity, reduce errors, and save time, making it a practical solution for organizations seeking to automate routine administrative tasks and improve efficiency in workflows. This bot addresses the limitations of manual data entry, such as time consumption, human errors, and the challenges of managing large volumes of repetitive tasks. The bot extracts data from structured sources like Excel sheets or databases and populates fields in web-based or desktop applications, ensuring precise and consistent data entry.Key features of the bot include robust error-handling mechanisms to manage scenarios like incomplete fields, invalid data formats, or connectivity issues during the form submission process. In the event errors, the bot logs the details, enabling users to address them effectively. After completing form-filling tasks, the bot generates detailed reports summarizing the status of submissions, including any errors or issues encountered.By leveraging UiPath Orchestrator, the bot can be scheduled to operate autonomously, reducing the need for manual intervention. This ensures timely execution of tasks, increases operational efficiency, and minimizes downtime.

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LIST OF ABBREVIATIONS:

Abbreviation	Full Form
ERD	Entity Relationship Diagram
DFD	Data Flow Diagram
HR	Human Resources
API	Application Programming Interface
RPA	Robotics Process Automation

CHAPTER-1

INTRODUCTION

The **Form-Filling Bot** is an automation solution developed using UiPath for data entry processes. It eliminates repetitive manual tasks by extracting data from sources like Excel or databases and populating forms accurately. This project enhances efficiency, reduces errors, and demonstrates the potential of RPA in optimizing routine administrative workflows. It eliminates repetitive manual tasks by extracting data from sources like Excel or databases and populating forms accurately.

1. 1 GENERAL

The **Form-Filling Bot** is a Robotic Process Automation (RPA) solution designed to automate data entry processes across web-based and desktop applications. By extracting information from structured sources like Excel or databases, it accurately populates forms, handles errors, and generates reports, improving efficiency, accuracy, and reliability in repetitive administrative tasks.

1.2 OBJECTIVE

The objective of the **Form-Filling Bot** project is to automate repetitive data entry tasks, reducing manual effort and minimizing errors in form submissions. By leveraging UiPath, the bot extracts data from structured sources such as Excel or databases,accurately fills forms, and ensures timely processing. It includes error-handling mechanisms, detailed reporting, and scheduling capabilities to enhance efficiency and reliability.

1.3 EXISTINGSYSTEM

In traditional systems, form-filling tasks are performed manually, requiring individuals to enter data into forms repeatedly. This process is time-consuming, prone to human error such as data mismatches or omissions, and inefficient, especially when handling large volumes of forms. Additionally, the manual approach lacks real-time error detection and consistent data validation, leading to inaccuracies. Generating reports or tracking submission statuses also requires additional effort, making the overall process labor-intensive and less reliable for high-frequency or large-scale operations.

1.4 PROPOSEDSYSTEM

The proposed system introduces an automated solution using UiPath to streamline the form-filling process. The Form-Filling Bot extracts data from structured sources like databases and accurately populates fields in web-based or desktop forms. The bot handles scenarios, such as missing or incorrect data, and generates real-time status reports for form submission. By automating this workflow, the system reduces manual effort reduce errors, and ensures faster, more accurate form submissions. Additionally, with UiPath Orchestrator, the bot can be scheduled to run autonomously, improving efficiency and consistency across large-scale or recurring tasks. The proposed system also includes a logging mechanism to track the success or failure of each task, providing transparency accountability. By automating the entire process, the system enhances productivity, operational costs, and ensures timely completion of tasks, making it a reliable solution for businesses with high-volume form-filling needs.

CHAPTER-2

LITERATURE_REVIEW

Robotic Process Automation (RPA) has revolutionized repetitive administrative tasks, with form-filling automation being a key area of application. RPA tools like UiPath have gained significant popularity for their ability to streamline data entry and improve operational efficiency. Research has shown that automation reduces human errors, increases accuracy, and saves time in tasks such as form submission and data processing (Avasarala, 2019). Studies highlight that RPA in data entry helps reduce operational costs and speeds up processes by eliminating manual intervention (Lacity & Willcocks, 2016).

2.1 GENERAL

Form-filling automation, in particular, has been explored in several industries, from finance to healthcare, where accurate and timely data entry is crucial. For example, forms for patient data entry has been found to enhance productivity and minimize errors, ensuring compliance with regulations (Goudar & Soni, 2017). Similarly, businesses that handle large volumes of forms, such as customer onboarding or order processing, have experienced improved turnaround times and customer satisfaction by implementing RPA solutions.This project builds upon these findings by developing a form-filling bot that not only automates data entry but also incorporates error handling and reporting, addressing in existing systems that lack real-time validation and feedback.incorporating automation into IT operations, such as improved accuracy, reduced downtime, and enhanced

real-time insights.

This project builds on these studies by developing an automated solution for monitoring system performance. Using UiPath's capabilities, it replaces manual processes for data collection and reporting, providing a scalable solution for continuous monitoring. As organizations grow, the need for automation becomes more critical, enabling efficient handling of large datasets and ensuring consistent system health tracking. Research also shows that automation enhances operational efficiency and supports better decision-making by delivering accurate, real-time performance data. This system offers a reliable, automated solution to modern system monitoring challenges.

CHAPTER-3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

The System Flow Diagram illustrates the steps in the automated system for the working of form filling.

Description:

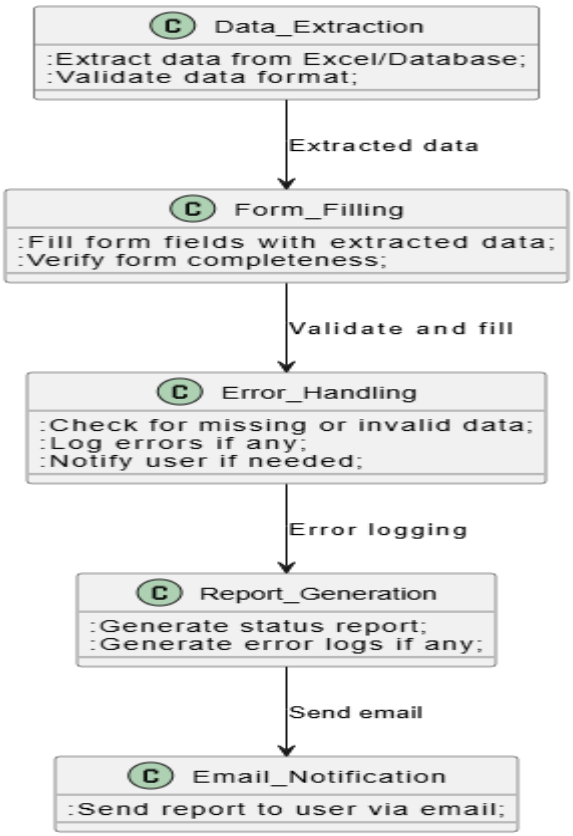
Input: Excel sheet has the input of all the specified fields which are to be filled in the form .

Process:

- Retrieve and store the data in an Excel sheet.
- Fill the form with the help of details in the excel sheet in the specified fields.
- Email the reports to the user.

Output:

- Confirmation of email sent.

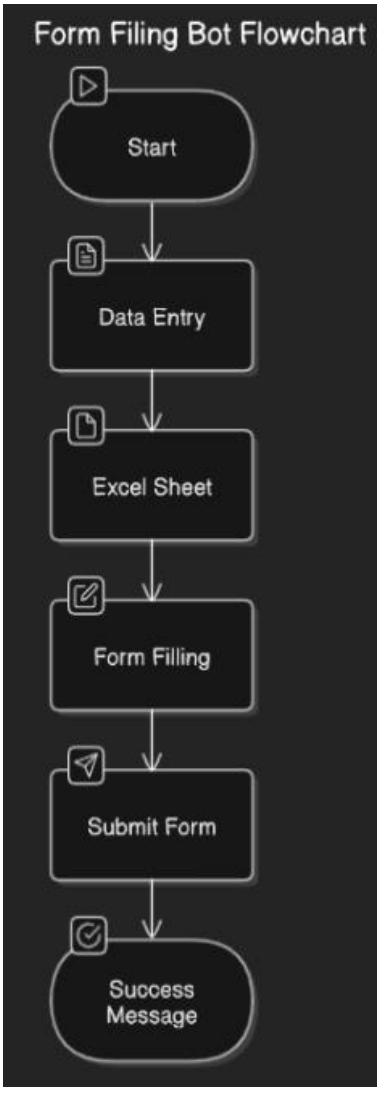


3.2 ARCHITECTURE DIAGRAM

The **Architecture Diagram** provides a high-level view of the system's structure and its components.

Components:

1. **Frontend**: A basic interface to view the form.
2. **Backend**:
    - Form submission: Collects data from excel and fills the form.
    - Excel Processing: Stores data for reference.
    - Email Module: Sends reports and graphs to the user.
3. **Database/Storage**: Logs data and email statuses in Excel.

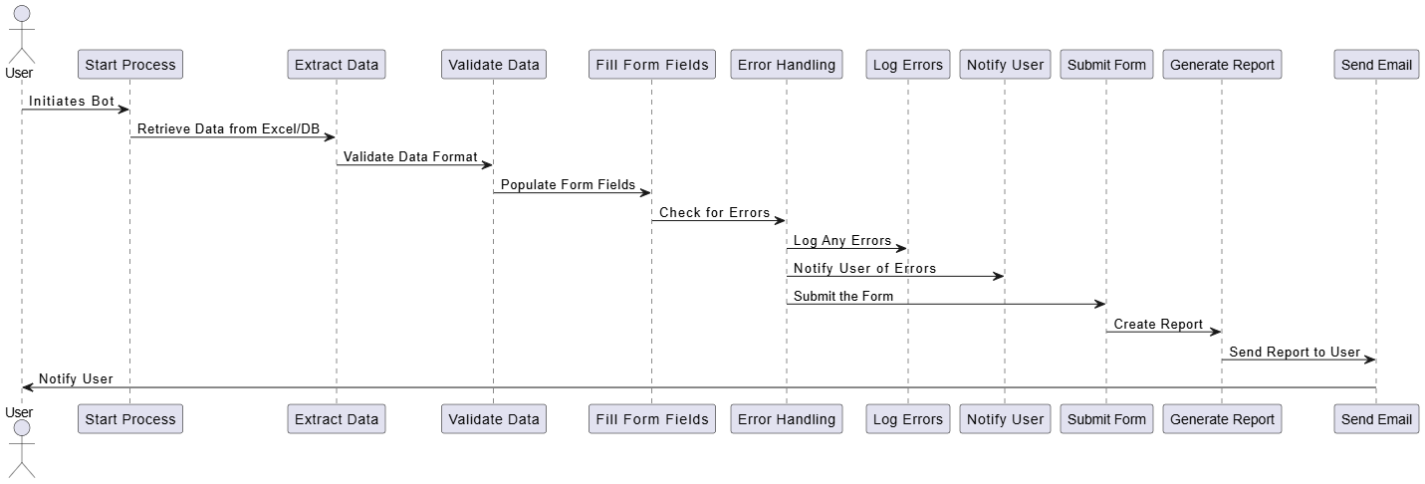


3.3 SEQUENCE DIAGRAM

The **Sequence Diagram** shows the interaction between actors (System user) and the system components in a sequential manner.

Steps:

1. System user trigger the process.
2. User fills the form with the help of excel.
3. By clicking the submit button the user receives the mail.
4. The mail contains the message that the form has been submitted successfully.



CHAPTER-4

PROJECT DESCRIPTION

The **Form-Filling Bot** is an intelligent automation system developed using **Robotic Process Automation (RPA)** technology with **UiPath**. The bot is designed to automate the repetitive process of extracting data, populating forms, and submitting them accurately, thus eliminating the need for manual data entry. This project addresses key challenges in data handling, such as time consumption, human error, and inefficiency, by automating form-filling workflows in business and administrative environments.

4.1 METHODOLOGY

The development of the **Form filling Bot** followed an agile methodology, allowing for iterative development and flexibility to accommodate changes in project requirements. The system was built using UiPath's Robotic Process Automation (RPA) platform, leveraging its capabilities for automation and error handling. The key steps in the methodology are as follows:

4.1.1 MODULES:

Data Extraction: The bot extracts data from structured sources such as **Excel files** or **databases**, retrieving necessary information for form population. It ensures the extracted data is in the correct format, ready for use.

Form Population: Once the data is validated, the bot automatically fills the fields of web-based or desktop forms. It eliminates manual typing, ensuring that data is entered without errors.

Error Handling: The system incorporates an **Error Handling Module** that checks for missing, incorrect, or incomplete data. If errors are found, the bot logs them and notifies t user, preventing faulty form submissions.

Report Generation: After form submission, the bot generates detailed **status reports**, summarizing the results of the form-filling process and any errors encountered. These are saved for further reference and analysis.

Email Notification: Upon completing the form-filling process, the bot automatically the generated reports via **email** to the designated user, keeping them informed in real time.

Database Integration: The bot is integrated with a **database** to store extracted data, completed forms, logs, and reports. This ensures data is safely stored and accessible for future reference

CHAPTER-5

OUTPUT SCREENSHOT

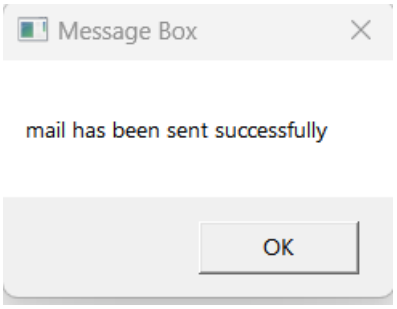


Fig 5.1-Get message

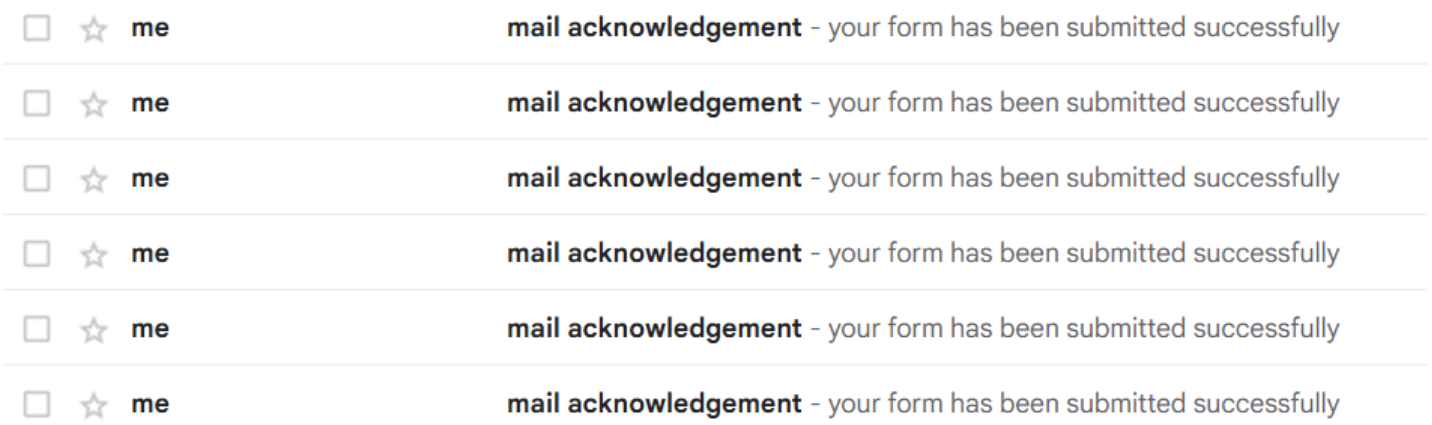
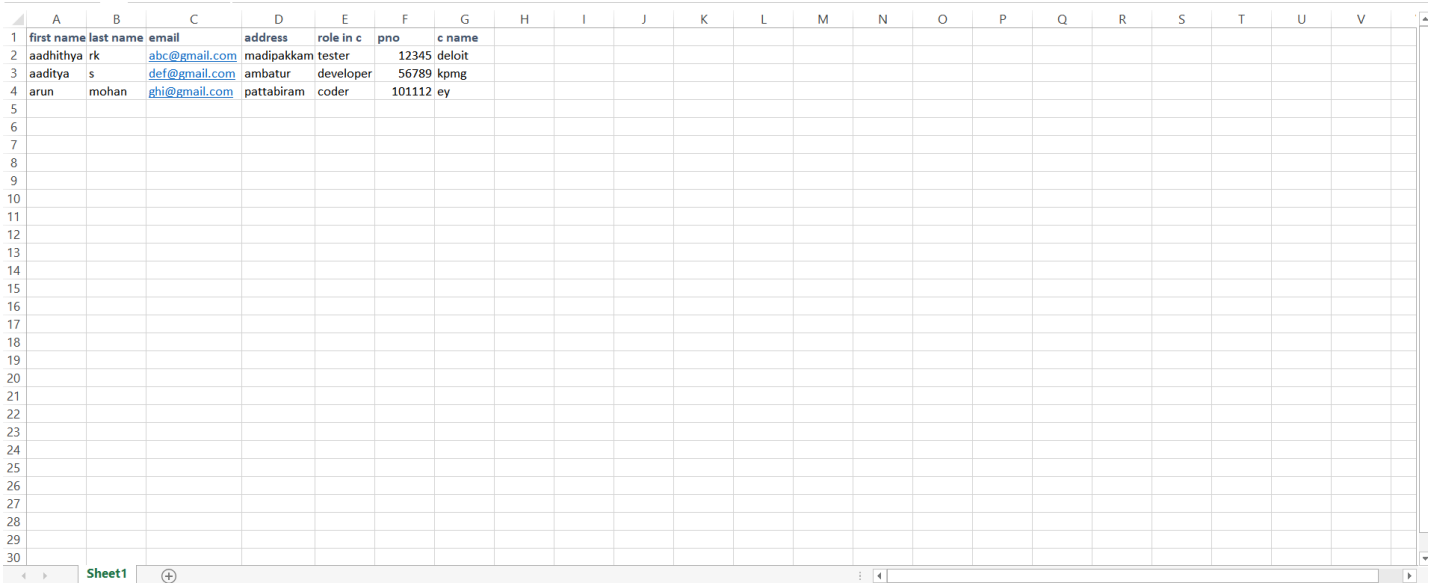


Fig 5.2-Get mail acknowledgement



first name	last name	email	address	role in c	pno	c name
aadhithya	rk	abc@gmail.com	madipakkam	tester	12345	deloit
aaditya	s	def@gmail.com	ambatur	developer	56789	kpmg
arun	mohan	ghi@gmail.com	pattabiram	coder	101112	ey

Sheet1

Fig 5.3-Update excel

The bot uses the excel to fill the details.

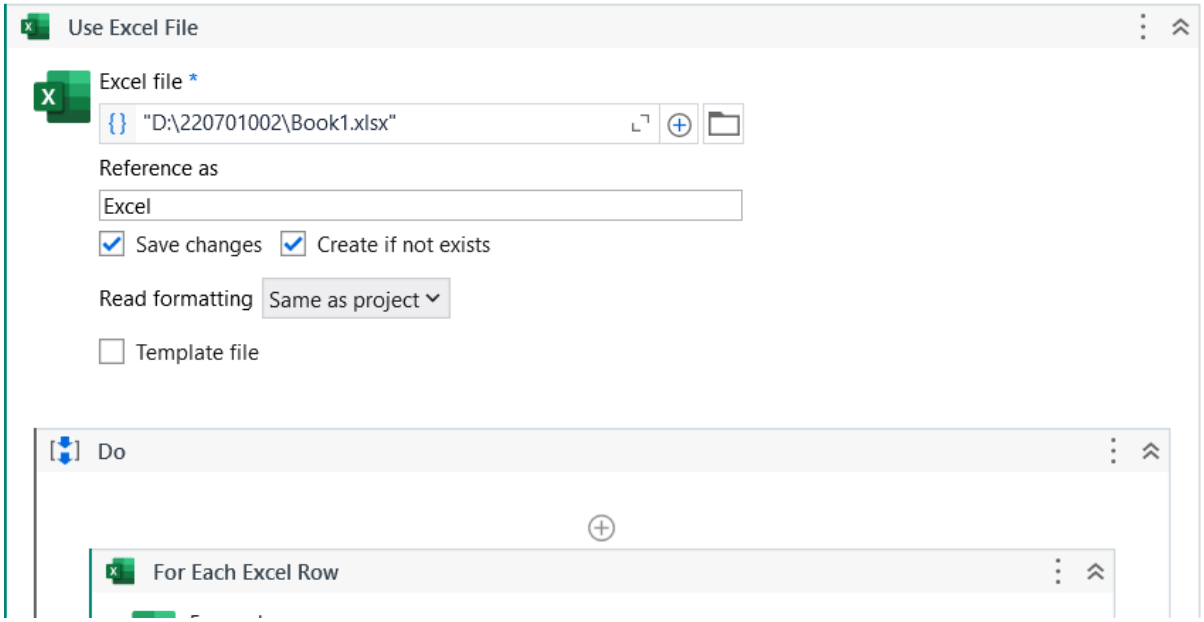
CHAPTER-6

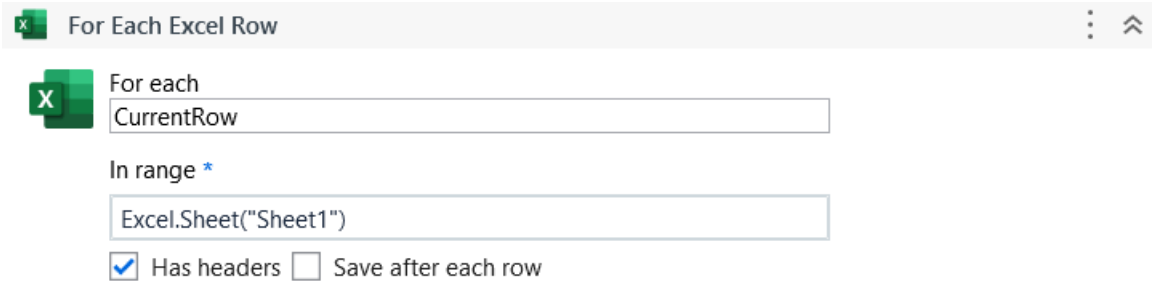
CONCLUSIONS

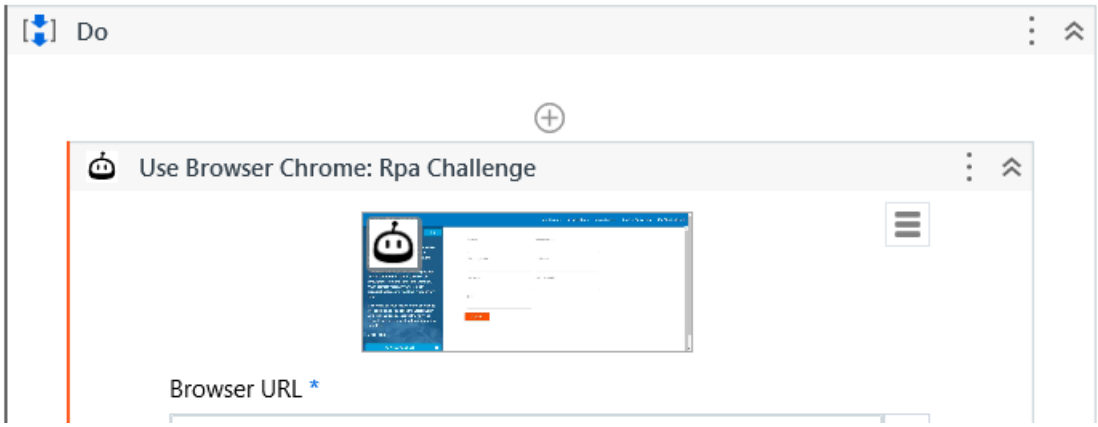
The **Form-Filling Bot** project successfully automates the data entry and form submission process, significantly improving efficiency and accuracy in handling repetitive tasks. By leveraging **UiPath's Robotic Process Automation (RPA)** technology, the bot extracts data, fills forms, handles errors, and generates reports, eliminating manual intervention. This automation not only reduces human errors but also saves time, cuts costs, and enhances operational productivity. The system's integration with email notifications and database storage further streamlines communication and record-keeping. Ultimately, the Form-Filling Bot provides a reliable, scalable, and cost-effective solution for businesses seeking to optimize their workflow. By leveraging **UiPath's Robotic Process Automation (RPA)** technology, the bot extracts data, fills forms, handles errors, and generates reports, eliminating manual intervention. This automation not only reduces human errors but also saves time, cuts costs, and enhances operational productivity. The system's integration with email notifications and database storage further streamlines communication and record-keeping. Ultimately, the Form-Filling Bot provides a reliable, scalable, and cost-effective solution for businesses seeking to optimize their workflow, ensuring quicker turnaround and improved data consistency.

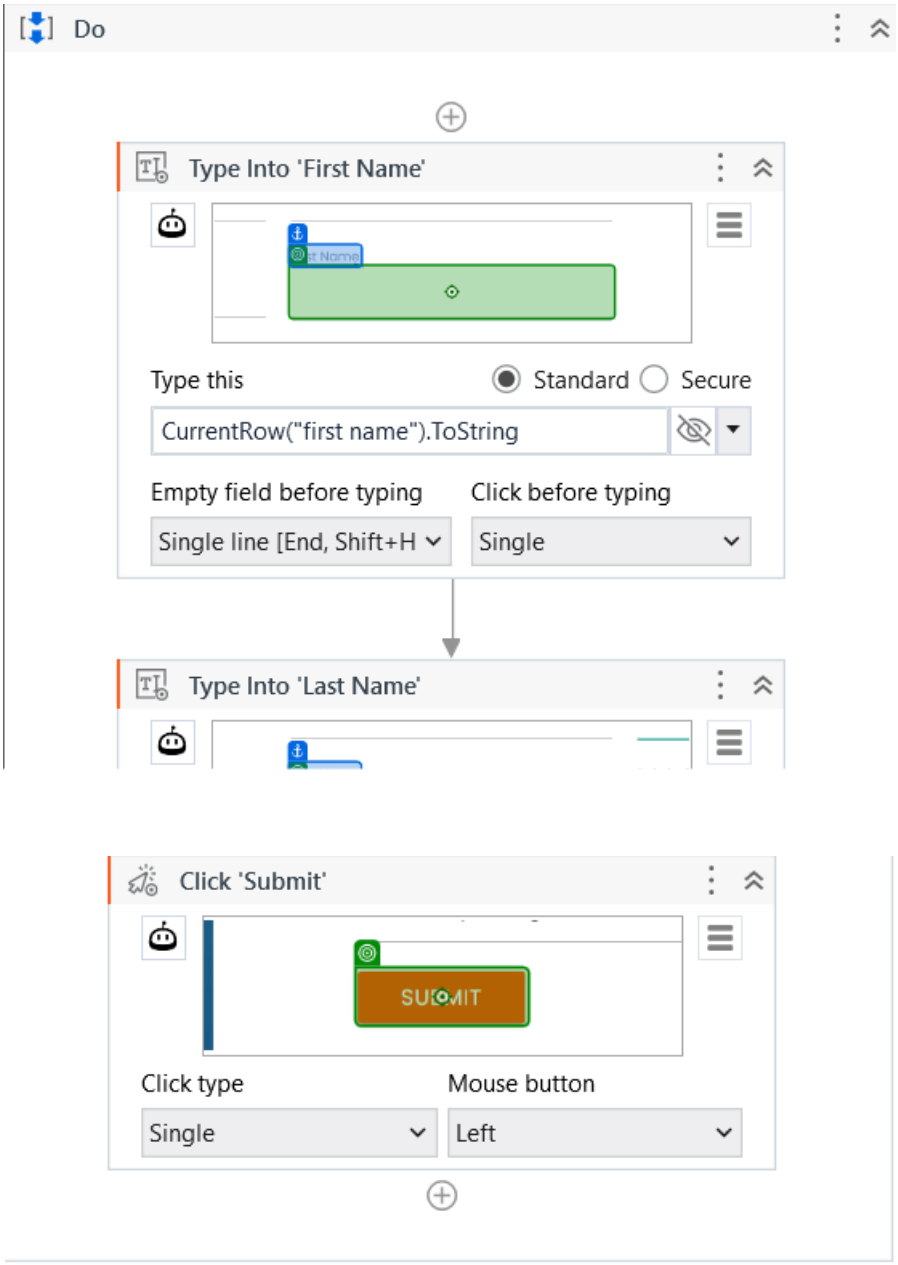
APPENDIX

PROCESS WORK FLOW








Do
Type Into 'First Name'
Type this
Standard
Secure
CurrentRow("first name").ToString
Empty field before typing
Click before typing
Single line [End, Shift+H
Single
Type Into 'Last Name'

Click 'Submit'
SUBMIT
Click type
Mouse button
Single
Left

REFERENCES

1. Avasarala, V. (2019). *Robotic Process Automation: The Next Transformation in Digital Transformation*. International Journal of Advanced Research in Computer Science, 10(3), 5-12.
2. Lacity, M. C., & Willcocks, L. P. (2016). *A Survey on Robotic Process Automation in Business*. Journal of Information Technology, 31(2), 174-183.
3. Goudar, R. H., & Soni, M. P. (2017). *Automation and Monitoring in Cloud Computing Systems*. Journal of Cloud Computing: Advances, Systems, and Applications, 6(1), 23-36.