DAYANANDA SAGAR COLLEGE OF ENGINEERING

(An Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE & ISO 9001:2008 Certified)
Accredited by National Assessment & Accreditation Council (NAAC) with 'A' grade, Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078.

RPA MINI PROJECT REPORT (SEE)

On

"DATA ENTRY AUTOMATION"

Submitted By:

AMIT A (1DS21AI002)
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Guide: Prof. Kavya D N

2022-2023

Department of Artificial Intelligence and Machine Learning, Dayananda Sagar College of Engineering
Bangalore-78

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CERTIFICATE

This is to certify that the Internship work done at "**DATA ENTRY AUTOMATION"** is being submitted by **AMIT A (1DS21AI002), DARSHAN R (1DS21AI014), ROHAN D (1DS21AI043), SUHAS KASHYAP MS (1DS21AI051)** is the record of the internship carried out by him/her under our supervision. This report is submitted towards the partial fulfilment of 3rd semester of Bachelor of Engineering in Artificial Intelligence and Machine Learning during the academic year 2022-2023. It is certified that all the suggestions or corrections indicated for internal assessment have been incorporated in the report. This Internship Report has been approved as it satisfies the academic requirements under the rules prescribed for the Bachelor of Engineering degree.

Signature of HOD
Dr. Vindhya P Malagi
(HOD, Dept. of AIML)
DSCE, Bengaluru

Signature of
Principal
Dr. BG Prasad
(Principal)
DSCE, Bengaluru

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DECLARATION

We, **Amit A, Darshan R, Rohan D, Suhas Kashyap M S** students of third semester **B.E in Artificial Intelligence and Machine Learning from Dayananda Sagar College of Engineering** declare that the internship entitled **"Data Entry Automation"** is a bonafide work in a partial fulfilment of academic requirement of Bachelor of Engineering in Artificial Intelligence and Machine Learning during the academic year 2022-2023.

Amit A (1DS21AI002)
Darshan R (1DS21AI014)
Rohan D (1DS21AI043)
Suhas Kashyap MS (1DS21AI051)

B.E. (AIML)
3rd Semester

Acknowledgement

We are pleased to have successfully completed the project **DATA ENTRY AUTOMATION**. We thoroughly enjoyed the process of working on this project and gained a lot of knowledge doing so.

We would like to take this opportunity to express our gratitude to **Dr. B G Prasad** Principal of DSCE, for permitting us to utilize all the necessary facilities of the institution.

We also thank our respected **Dr. Vindhya P Malagi,** HOD of Artificial Intelligence & Machine Learning, DSCE, Bangalore, for her support and encouragement throughout the process.

We are immensely grateful to our respected and learned guide, **Prof. Kavya D N**, Assistant Professor, DSCE for their valuable help and guidance. We are indebted to them for their invaluable guidance throughout the process and their useful inputs at all stages of the process.

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Lastly, we would like to express our deep appreciation towards our classmates and our family for providing us with constant moral support and encouragement. They have stood by us in the most difficult of times.

Team Members

Amit A (1DS21AI002)
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Abstract

Data entry automation bot in automation anywhere is an innovative solution to automate the data entry process and streamline business operations. The project aims to design and develop a bot that can automate data entry tasks with high accuracy and efficiency, resulting in cost savings and improved productivity. This report outlines the problem statement, objectives, methodology, implementation, results, analysis, and conclusion of the Data entry automation bot project, along with future scope and references. The report demonstrates the effectiveness of the Data entry automation bot in improving the data entry process, reducing errors, and increasing efficiency, and provides recommendations for future development and expansion of the solution. Overall, the Data entry automation bot in automation anywhere offers significant benefits for businesses looking to streamline their operations and improve their bottom line.

In today's digital age, data entry is a critical component of many business operations, yet it can be time-consuming, repetitive, and prone to errors. By implementing the Data entry automation bot in automation anywhere, businesses can free up valuable resources and enable employees to focus on more strategic tasks, such as analysis and decision-making. Moreover, the Data entry automation bot can improve data quality, reduce turnaround time, and increase customer satisfaction, resulting in better business outcomes. As automation and artificial intelligence continue to advance, the Data entry automation bot in automation anywhere represents an excellent example of how technology can help businesses overcome challenges and achieve success in a competitive market.

Table of Contents

CHAPTER 1: INTRODUCTION

1.1 Introduction To RPA

Robotic Process Automation (RPA) is a powerful technology that is revolutionizing the way organizations approach business process automation. RPA uses software robots or bots to automate repetitive and time-consuming tasks that were previously performed by humans. These bots are designed to interact with various applications and systems just like humans, enabling them to perform a wide range of tasks, from simple data entry to more complex decision-making processes.

RPA has many benefits for organizations, including increased productivity, reduced costs, and improved accuracy. By automating repetitive tasks, RPA frees up human workers to focus on higher-value activities that require critical thinking and creativity. This can lead to significant time and cost savings for organizations, while also improving overall efficiency.

RPA can be implemented in a wide range of industries, including finance, healthcare, manufacturing, and more. It is particularly useful in industries where there are many manual and repetitive processes that can benefit from automation. RPA technology is constantly evolving, with new features and capabilities being added all the time. As such, it is a valuable tool for organizations looking to streamline their operations and stay ahead of the curve.

Automation Anywhere is a leading provider of Robotic Process Automation (RPA) technology that enables organizations to automate repetitive and manual tasks, reduce costs, and improve efficiency. The company offers a comprehensive platform for creating and deploying software robots or bots that can automate various tasks across different applications and systems.

Some of the services provided by Automation Anywhere include:

1. RPA platform
2. Cognitive automation
3. Analytics
4. Cloud deployment
5. Bot store
6. Community support

In summary, Automation Anywhere provides a comprehensive platform for creating and deploying software robots to automate various tasks, with advanced features such as cognitive automation, analytics, and cloud deployment. The company also provides a community for support and a bot store for pre-built bots.

RPA technology in Automation Anywhere enables organizations to streamline their operations, reduce costs, and improve efficiency by automating tasks such as data entry, data extraction, invoice processing, and customer service. Automation Anywhere's RPA bots can work around the clock, performing tasks much faster and more accurately than humans, freeing up employees to focus on higher-value tasks that require human judgment and decision-making.

Automation Anywhere's RPA technology is user-friendly, allowing users to create bots without any coding knowledge using drag-and-drop interfaces and pre-built templates. The platform also provides advanced features such as machine learning and cognitive automation, which enable bots to learn from past interactions and make more intelligent decisions.

In summary, RPA technology in Automation Anywhere provides organizations with a powerful tool for automating repetitive and manual tasks, reducing errors, and improving productivity.

1.2 Introduction to DATA ENTRY AUTOMATION

A data entry automation bot is a software program that automates the manual process of data entry by performing tasks that are repetitive, time-consuming, and prone to errors. Data entry is a critical function in many industries, including finance, healthcare, and logistics, and involves the input of large amounts of data into computer systems or databases. The process can be tedious, and errors can lead to significant consequences, such as financial losses or regulatory non-compliance.

Automation Anywhere is a leading provider of Robotic Process Automation (RPA) solutions, and their software enables businesses to automate a range of tasks, including data entry. A data entry automation bot in Automation Anywhere can perform tasks such as opening and closing software applications, inputting data into fields, and extracting data from scanned documents or images.

Data entry automation bots use various technologies, including Optical Character Recognition (OCR), which enables them to extract text from images or scanned documents. Bots can also use machine learning algorithms to learn from past data entries and improve accuracy over time.

One of the primary benefits of using data entry automation bots is that they can significantly reduce the time and effort required for manual data entry. Bots can work 24/7, providing continuous output without any breaks or errors, which can lead to significant productivity gains. Additionally, data entry automation bots can help reduce the risk of errors and inconsistencies, improving the accuracy of the data entered into systems.

In summary, a data entry automation bot is a software program that automates the process of manual data entry, reducing the time and effort required while improving accuracy and consistency. Automation Anywhere's RPA technology enables businesses to create and deploy data entry automation bots quickly and efficiently

1.3 Problem Statement

Manual data entry is a time-consuming and tedious process, often prone to errors, which can lead to costly mistakes and regulatory non-compliance. For example, in industries such as finance or healthcare, where accuracy is crucial, even a small error in data entry can have severe consequences. Additionally, manual data entry can be a repetitive and monotonous task, leading to employee burnout and reduced productivity.

Organizations that rely heavily on manual data entry are looking for solutions that can help automate this process, reduce the risk of errors, and increase productivity. Traditional methods such as hiring additional staff or outsourcing the work can be expensive and may not guarantee improved accuracy.

The solution to this problem is to implement a data entry automation bot using RPA technology. This approach allows organizations to automate the data entry process, reducing the time and effort required for manual data entry. Data entry automation bots can work 24/7, providing continuous output without any breaks or errors, which can lead to significant productivity gains. Additionally, data entry automation bots can help reduce the risk of errors and inconsistencies, improving the accuracy of the data entered into systems.

The key benefits of data entry automation bots include:

1. **Increased productivity:** Data entry automation bots can perform the task faster than manual data entry, enabling employees to focus on more complex tasks that require human expertise.
2. **Improved accuracy:** Data entry automation bots can significantly reduce the risk of errors, improving the accuracy of the data entered into systems.
3. **Cost savings:** By automating the data entry process, organizations can reduce the cost of manual data entry, including hiring additional staff or outsourcing the work.

In summary, the problem statement for data entry automation bot is that manual data entry is time-consuming, error-prone, and can lead to costly mistakes. The solution to this problem is to implement a data entry automation bot using RPA technology, which can significantly reduce the time and effort required for manual data entry, improve accuracy, and increase productivity while saving costs.

1.4 Objectives

1 **Reduce manual data entry:** The primary objective of a data entry automation bot is to reduce the time and effort required for manual data entry. By automating the process, organizations can significantly reduce the workload on employees, allowing them to focus on more complex tasks.

2 **Improve accuracy:** Data entry automation bots are designed to reduce the risk of errors, improving the accuracy of the data entered into systems. This is achieved by using various technologies, including OCR and machine learning, to extract and validate data.

3 **Increase productivity:** Data entry automation bots can work 24/7, providing continuous output without any breaks or errors, which can lead to significant productivity gains. This objective is achieved by enabling employees to focus on more complex tasks, thereby increasing their productivity.

4 **Reduce costs:** Data entry automation bots can help reduce the cost of manual data entry, including hiring additional staff or outsourcing the work. This objective is achieved by reducing the need for manual data entry, resulting in cost savings.

5. **Enhance data security:** Data entry automation bots can help enhance data security by reducing the risk of errors and ensuring data is entered accurately and consistently. This objective is achieved by automating the data entry process, reducing the risk of human error, which can lead to data breaches.
6. **Improve customer satisfaction:** Data entry automation bots can help improve customer satisfaction by ensuring that data is entered accurately and consistently. This objective is achieved by reducing the risk of errors, which can lead to customer dissatisfaction and complaints.

In summary, the objectives of a data entry automation bot are to reduce manual data entry, improve accuracy, increase productivity, reduce costs, enhance data security, and improve customer satisfaction. By achieving these objectives, organizations can improve efficiency and competitiveness, while reducing the risk of errors and regulatory non-compliance

1.5 Organization of Report

The organization of a report refers to the structure and layout of the document. It involves arranging the content in a logical and easy-to-follow format that allows readers to understand the information presented and follow the argument or analysis presented in the report.

The organization of a report includes the following elements:

1. **Title page:** This includes the title of the report, the author's name, date of submission, and any other relevant information such as the organization or department for which the report was prepared.
2. **Table of contents**: This outlines the main sections and subsections of the report, along with page numbers, allowing readers to easily navigate the document.
3. **Executive summary**: This provides a concise overview of the report, including the main findings, conclusions, and recommendations.
4. **Introduction**: This sets the context for the report, providing background information on the problem or issue addressed, and outlining the purpose and objectives of the report.
5. **Methodology**: This describes the methods used to gather and analyse data or information presented in the report.
6. **Results**: This section presents the main findings of the report, including any relevant data, analysis, or other evidence that supports the report's conclusions.
7. **Discussion**: This section interprets and analyses the results presented in the previous section, drawing conclusions and making recommendations based on the findings.
8. **Conclusion**: This summarizes the main points of the report, including the key findings and recommendations, and highlights their significance.
9. **References**: This includes a list of sources cited in the report, using a specific referencing style.

Overall, the organization of a report is important to ensure that the information presented is easy to follow and understand, and that the report effectively communicates the main findings and conclusions to its intended audience.

CHAPTER 2: SYSTEM REQUIREMENTS

2.1 Hardware Requirements:

The hardware requirements of RPA can vary depending on the specific RPA software being used and the complexity of the automation tasks being performed. However, in general, here are some common hardware requirements for running RPA:

1. Processor: RPA software typically requires a multi-core processor with a clock speed of at least 2 GHz.
2. Memory: The amount of memory required for running RPA depends on the complexity of the automation tasks being performed. Typically, a minimum of 4 GB of RAM is required, although more may be needed for more complex tasks.
3. Hard disk space: RPA software requires a certain amount of hard disk space for installation, and the amount of space required can vary depending on the software being used. In general, a minimum of 10 GB of free hard disk space is recommended.
4. Graphics card: While not strictly necessary for running RPA software, some software may require a dedicated graphics card to perform certain tasks.
5. Operating system: RPA software can typically run on a variety of operating systems, including Windows, Mac OS, and Linux. However, the specific requirements may vary depending on the software being used.
6. Internet connection: Many RPA software solutions require an internet connection to access cloud-based services or to perform web-based automation tasks.

2.2 Software Requirements:

The software requirements for RPA using Automation Anywhere include an operating system, database, web browser, virtualization software, integration capabilities, and hardware that can support the platform's requirements. Organizations considering deploying Automation Anywhere should consult the specific system requirements for the version of the platform being used to ensure compatibility and optimal performance.

CHAPTER 3: SYSTEM MODELS

3.1 Class Diagram

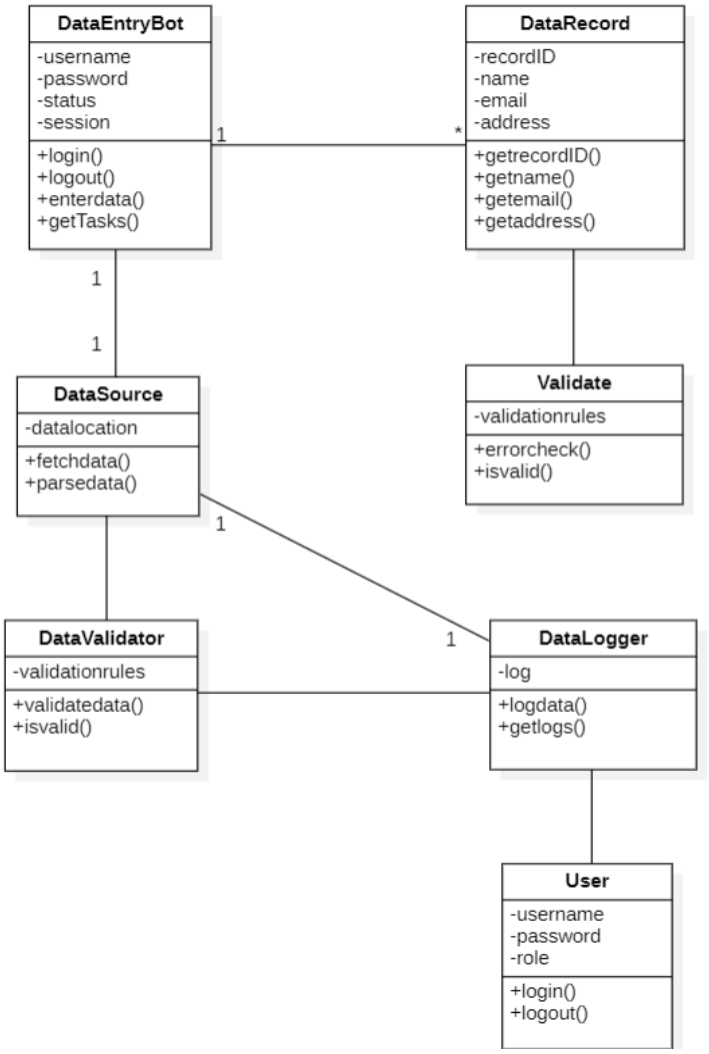

Diagram 3.1: Class Diagram for Data Entry Bot

3.2 Use Case Diagram

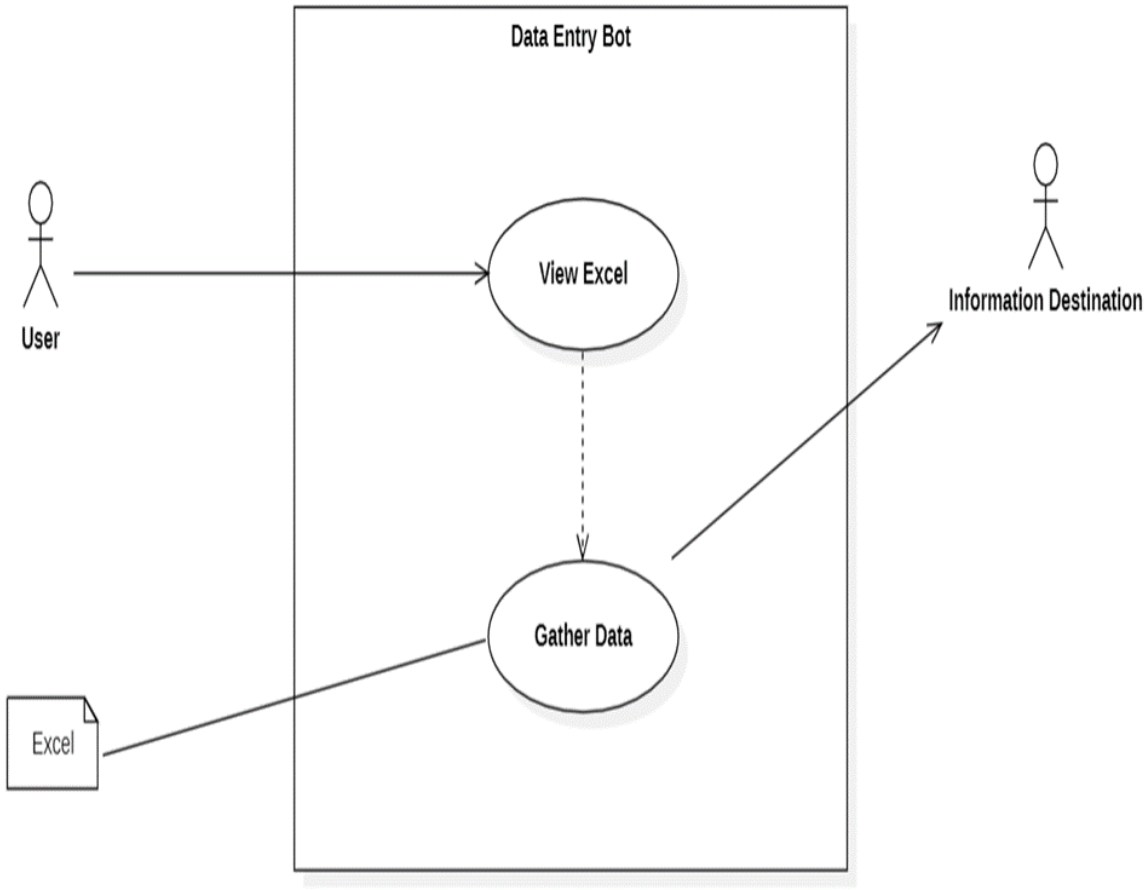

Diagram 3.2: Use Case Diagram for Data Entry Bot

CHAPTER 4: METHODOLOGY

4.1 Methodology

1. **Identify the data entry process:** The first step is to identify the data entry process that needs to be automated. This involves identifying the source of data and the destination system where the data needs to be entered.

2. **Analyze the process:** Once the data entry process has been identified, it is important to analyze it to understand its workflow and identify areas that can be automated. This analysis will help in identifying the tasks that are repetitive and time-consuming and can be automated using RPA technology.

3. **Design the automation workflow:** Based on the analysis, the automation workflow is designed, which includes the steps that the data entry automation bot will take to automate the process. This step involves defining the tasks that the bot will perform, such as extracting data from the source system, validating the data, and entering it into the destination system.

4. **Develop the bot:** Once the automation workflow has been designed, the bot is developed using Automation Anywhere. This step involves creating bots using drag-and-drop tools, defining the data extraction and validation rules, and integrating the bot with the source and destination systems.

5. **Test the bot:** After the bot has been developed, it is tested to ensure that it performs the required tasks accurately and efficiently. This step involves creating test cases and executing them to validate the bot's performance.

6. **Deploy the bot:** Once the bot has been tested and validated, it is deployed in the production environment. This step involves setting up the bot to run on a schedule and monitoring its performance to ensure that it meets the desired objectives.

7. **Maintain the bot:** Finally, the bot is maintained to ensure that it continues to perform efficiently and accurately. This step involves monitoring the bot's performance, identifying and resolving any issues, and making updates to the bot as required.

8. **Evaluate and improve:** After the bot has been deployed, it is important to continuously evaluate its performance and identify areas for improvement. This step involves monitoring the bot's performance metrics and identifying bottlenecks or areas where the bot can be optimized.

9. **Provide training and support:** Providing adequate training and support to employees who will be using the bot is crucial to ensure its successful adoption. This step involves conducting training, sessions, creating user manuals and guides, and providing ongoing support to users to ensure that they are able to use the bot effectively.

4.2 Applications

1. **Finance and accounting:** In the finance and accounting industry, data entry automation bots can be used to automate tasks such as invoice processing, journal entries, and account reconciliation. By automating these tasks, organizations can reduce errors, improve accuracy, and free up employees to focus on higher value tasks.

2. **Healthcare:** In the healthcare industry, data entry automation bots can be used to automate tasks such as patient data entry, insurance claim processing, and medical coding. By automating these tasks, healthcare organizations can reduce errors, improve accuracy, and free up employees to focus on patient care.

3. **Manufacturing:** In the manufacturing industry, data entry automation bots can be used to automate tasks such as order processing, inventory management, and shipping and receiving. By automating these tasks, organizations can improve accuracy, reduce processing time, and improve overall efficiency.

4. **Retail and e-commerce:** In the retail and e-commerce industry, data entry automation bots can be used to automate tasks such as order processing, customer data entry, and inventory management. By automating these tasks, organizations can improve accuracy, reduce processing time, and provide a better customer experience.

5. **Human resources:** In the human resources industry, data entry automation bots can be used to automate tasks such as employee data entry, onboarding, and benefits enrollment. By automating these tasks, organizations can reduce errors, improve accuracy, and free up HR personnel to focus on employee engagement and other strategic tasks.

6. **Banking and financial services:** In the banking and financial services industry, data entry automation bots can be used to automate tasks such as customer data entry, loan processing, and fraud detection. By automating these tasks, organizations can reduce errors, improve efficiency, and provide a better customer experience.

7. **Legal:** In the legal industry, data entry automation bots can be used to automate tasks such as document processing, case management, and legal research. By automating these tasks, organizations can reduce errors, improve accuracy, and free up lawyers to focus on higher value tasks such as legal analysis and client relationships.

8. **Supply chain:** In the supply chain industry, data entry automation bots can be used to automate tasks such as order processing, inventory management, and shipment tracking. By automating these tasks, organizations can improve accuracy, reduce processing time, and improve overall efficiency.

9. **Insurance:** In the insurance industry, data entry automation bots can be used to automate tasks such as claims processing, policy management, and customer data entry. By automating these tasks, organizations can reduce errors, improve accuracy, and free up employees to focus on customer service and sales.

10. **Government:** In the government sector, data entry automation bots can be used to automate tasks such as document processing, data entry, and citizen services. By automating these tasks, government agencies can improve efficiency, reduce costs, and provide better services to citizens.

CHAPTER 5: RESULTS & ANALYSIS

The Results section consists of the processes of the bot. Diagram 5.1 represents the Bot running successfully. Diagram 5.2 represents the actions performed by the bot. Diagram 5.3: The Bot storing the user data after successfully retrieving them.

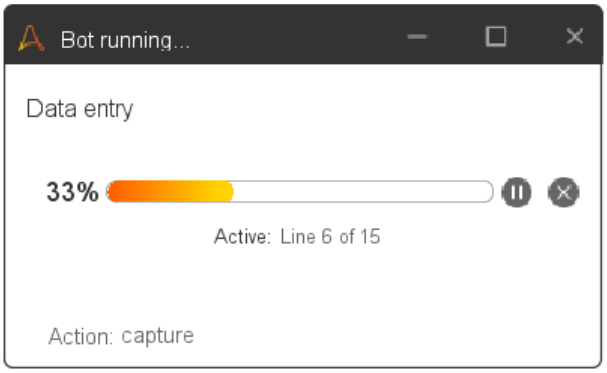

Diagram 5.1: The Bot running process.

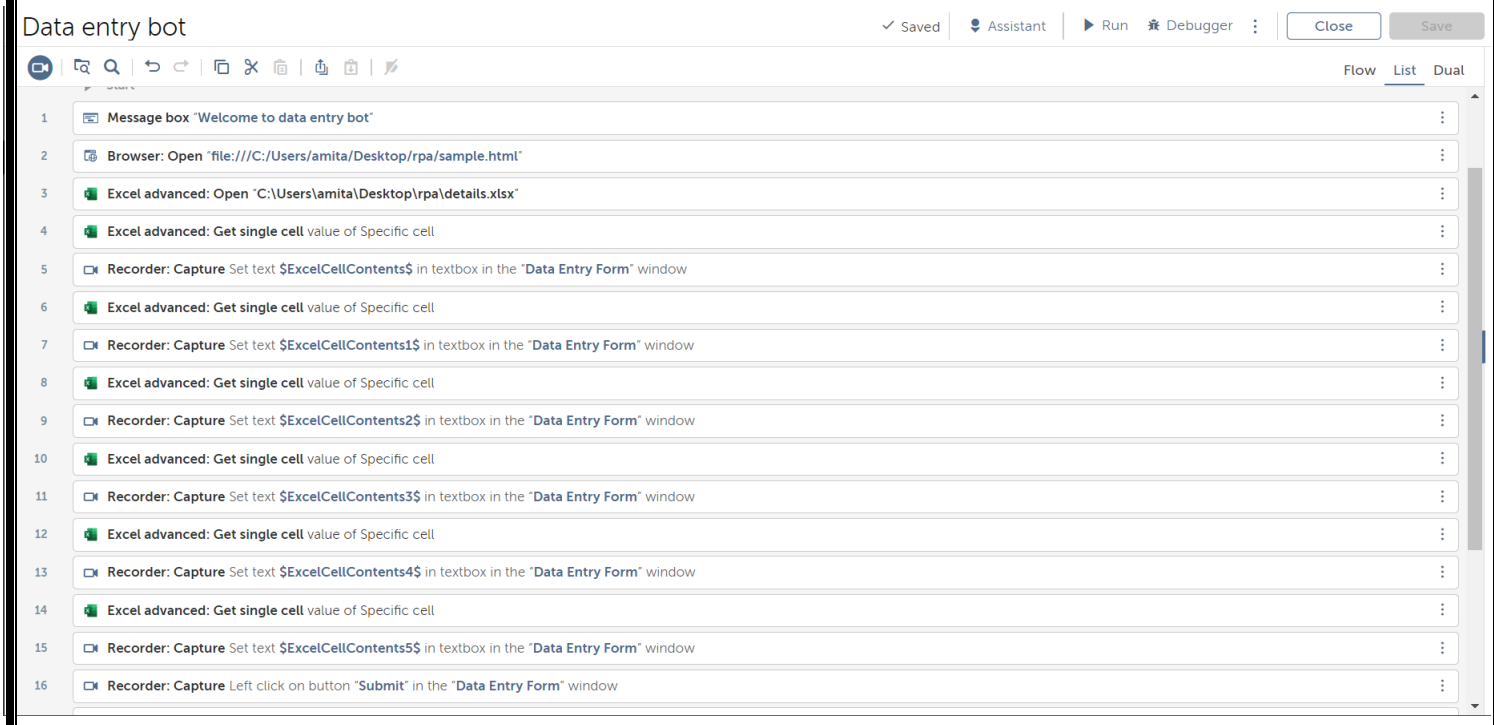

Diagram 5.2: The actions performed by the automated bot.

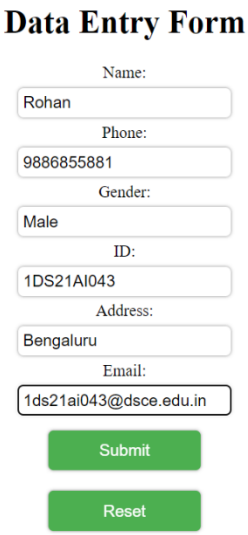

Diagram 5.3: The Bot storing the user data after successfully retrieving them.

CHAPTER 6: CONCLUSION & FUTURE SCOPE

6.1 CONCLUSION

In conclusion, Data entry automation bots in Automation Anywhere can be a highly effective solution for organizations looking to improve their data entry and processing capabilities. By automating data entry tasks, organizations can improve accuracy, increase productivity, reduce costs, and improve the overall quality of their data. Additionally, Data entry automation bots can free up employees to focus on higher value tasks, such as customer service and strategic planning, which can have a significant impact on organizational performance.

However, before implementing Data entry automation bots in Automation Anywhere, it is important to conduct a thorough analysis of the technical feasibility, financial ROI, operational efficiency, strategic impact, and potential risks and challenges. This analysis can help organizations make informed decisions about whether to implement Data entry automation bots and how to do so effectively.

Overall, implementing Data entry automation bots in Automation Anywhere can provide organizations with a competitive advantage by improving efficiency, accuracy, and productivity. By leveraging this technology, organizations can achieve their strategic objectives, reduce costs, and provide a better overall customer experience, control over their data and reducing the risk of fraud and data breaches

6.2 FUTURE SCOPE

Gartner, a leading research and advisory company, predicts that by 2024, 75% of large enterprises will be using at least four low-code development tools for both IT application development and citizen development initiatives. This indicates a growing trend toward the use of automation tools, such as Data entry automation bots, in enterprise settings.

According to a report by Research and Markets, the global market for Robotic Process Automation (RPA) software is expected to grow from $1.1 billion in 2019 to $7.2 billion by 2025, representing a compound annual growth rate (CAGR) of 35.2%. This growth is expected to be driven in part by the increasing adoption of automation technologies in a variety of industries, including finance, healthcare, and retail.

Automation Anywhere, the company that produces the software for Data entry automation bots, has been recognized as a Leader in the 2020 Gartner Magic Quadrant for Robotic Process Automation. This indicates that the company is well-positioned to continue to innovate and improve its automation tools, including Data entry automation bots, in response to growing demand.

The COVID-19 pandemic has accelerated the adoption of automation technologies in many industries, as companies seek to reduce the need for in-person work and improve efficiency in remote work environments. This trend is likely to continue in the coming years, driving increased demand for automation tools such as Data entry automation bots.

Finally, the increasing availability of cloud-based automation tools is expected to make it easier and more affordable for organizations of all sizes to implement automation solutions, including Data entry automation bots. As these tools become more accessible, we can expect to see even greater adoption and innovation in the field of automation

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