AN INTERNSHIP REPORT

On Project

CALCULATE CLIENT SECURITY HASH

At

SILVER TOUCH TECHNOLOGIES LTD.

A report submitted in partial fulfillment of the requirements for the Award of Degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND DESIGN

By

RIDDHIMA NIKAM (TE 45, 2023-24)

Under Supervision of

Mr. Rachit Patel, Project Manager, Silver Touch Technologies Ltd, Ahemdabad and

Prof. Jayashri Hase, Assistant Professor, KKWIEER

(Duration: 18 Dec 2023 – 28 Jan 2024)

K. K. WAGH INSTITUTE OF ENGINEERING EDUCATION AND RESEARCH, NASHIK.

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

STUDENT'S DECLARATION

I, **Riddhima Nikan** hereby declare that I have undertaken 04 weeks internship at **Silver Touch Technologies Ltd., Ahemdabad** during a period from 18th DEC 2023 to 18th JAN 2024 in partial fulfillment of the requirements for the Award of Degree (COMPUTER SCIENCE AND DESIGN) at **K. K. WAGH INSTITUTE OF ENGINEERING EDUCATION AND RESEARCH, NASHIK**. The work which is being presented in the training report submitted to the Department of Computer Science and design at above mentioned institute is an authentic record of training work.

I have taken care in all respect to honor the intellectual property right and have acknowledged the contribution of others for using them in academic purpose and further declare that in case of any violation of intellectual property right or copyright I, as a candidate, will be fully responsible for the same.

Signature of the Student
Date:
Place:

Mr. Rachit Patel, Project Manager, Silver Touch Technologies Ltd, Ahemdabad
Signature of the Supervisor-1

Prof. Jayashri Hase, Assistant Professor, KKWIEER
Signature of the Supervisor-2

ACKNOWLEDGEMENT

It is always a pleasure to remind the fine people in the Engineering program for their sincere guidance I received to uphold my practical as well as theoretical skills in engineering.

Successful completion of any type of training requires helps from number of people. Also, the help needed to prepare this report from different people cannot be overlooked. Now there is a little effort to show my gratitude to every person helped in these four weeks program.

Secondly, I want to thank **Mr. Rachit Patel** for giving me this opportunity to do an internship/industrial training in the esteemed company.

I would like to convey my heartiest thanks to **Mr. Rachit Patel** (Project Manager, Silver Touch Technologies Ltd, Ahemdabad) who in spite of being extraordinarily busy with their duties, took time to hear, guide and keep me on the correct path and allowed me to carry out my training in the company.

I would also like to express my gratitude to **Dr. Shirish S. Sane** (HOD Computer),**Prof. Jayashri Hase**, (Internal Guide) faculty from the college, for helping me and regularly maintaining the supervision from the college side. And, last but not the least, I express my deepest thanks to all the departments and staff at Silver Touch Technologies.

SUMMARY

An internship is a period of work experience offered by a company/an organization for a limited period of time. It is an opportunity that employers offer to a student interested in gaining work experience in their particular company. The report presents the work I have done, the knowledge has been acquired and the conclusions I have drawn in these 04 weeks internship/ industrial training at Silver Touch Technologies Ltd, Ahemdabad.

I had the privilege of contributing to the groundbreaking "Calculate Client Security Hash" project. This initiative exemplifies the transformative potential of Robotic Process Automation (RPA) in modern business environments. RPA technology offers businesses unparalleled benefits, including increased efficiency, reduced errors, and scalability, all of which are essential for driving productivity and maintaining competitiveness in today's digital landscape. Through hands-on involvement in the project, I witnessed firsthand how RPA revolutionizes conventional data processing methods.

The "Calculate Client Security Hash" project, leveraging RPA capabilities within Automation Anywhere, showcases the seamless automation of data processing tasks. As an intern, I played a role in implementing and refining automation workflows, witnessing the tangible impact of RPA on streamlining complex processes.

The utilization of Automation Anywhere allowed us to design and deploy automated workflows seamlessly, streamlining the intricate process of calculating client security hashes. Through active involvement in the project, I gained valuable insights into the mechanics of RPA and its impact on optimizing data processing tasks. The "Calculate Client Security Hash" bot, developed with precision and expertise, represents a paradigm shift in data management practices. By automating repetitive tasks, the bot ensures heightened accuracy and consistency, while also driving significant cost savings and accelerating project timelines.

My internship experience at Silver Touch Technologies has been enriching, as it provided a unique opportunity to witness firsthand the transformative potential of RPA in real-world scenarios. The project not only deepened my understanding of RPA principles but also equipped me with valuable skills and insights for future endeavors in the field of automation and digital innovation.

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Chapter 1

Introduction

1.1 Robotics Process Automation

Robotic Process Automation (RPA) is the new technology that aims to create software robots (bots) that mimic human behavior. Transitioning to RPA, enterprises aim to reduce labor costs, increase productivity, reduce error rates and improve customer satisfaction. Increasing average cost of worker around the globe (The Biggest Cost Of Doing Business: A Closer Look At Labor Costs, 2018) (United States Nonfarm Unit Labour Cost, 2018) enterprises adapt the RPA technology very fast in the past few years. RPA has become one of the most trending technologies in many industries. It's projected to have a significant economic impact, with estimates suggesting a potential of $6.7 trillion by 2025$.

Understanding RPA

Robotic Process Automation is a technology which aims to reduce human intervention in computer applications, especially in repetitive tasks that vary very little in each iteration. RPA works primarily by interacting with "high level" applications, which are the software layers at the graphic interface level, as oppose to machine language or programming code. Put more simply, it is a type of software that emulates the real interaction that a human would have with conventional computer applications. This technology is suitable to replace simple and repetitive manual tasks such as data entry in applications. This means that employees have more time to focus on other branches of value for the company such as decision-making or improving customer relations.It is a relatively fast technology to implement and can therefore bring immediate benefits to a company through time and cost savings, especially if it can be applied in the bottlenecks of certain processes.

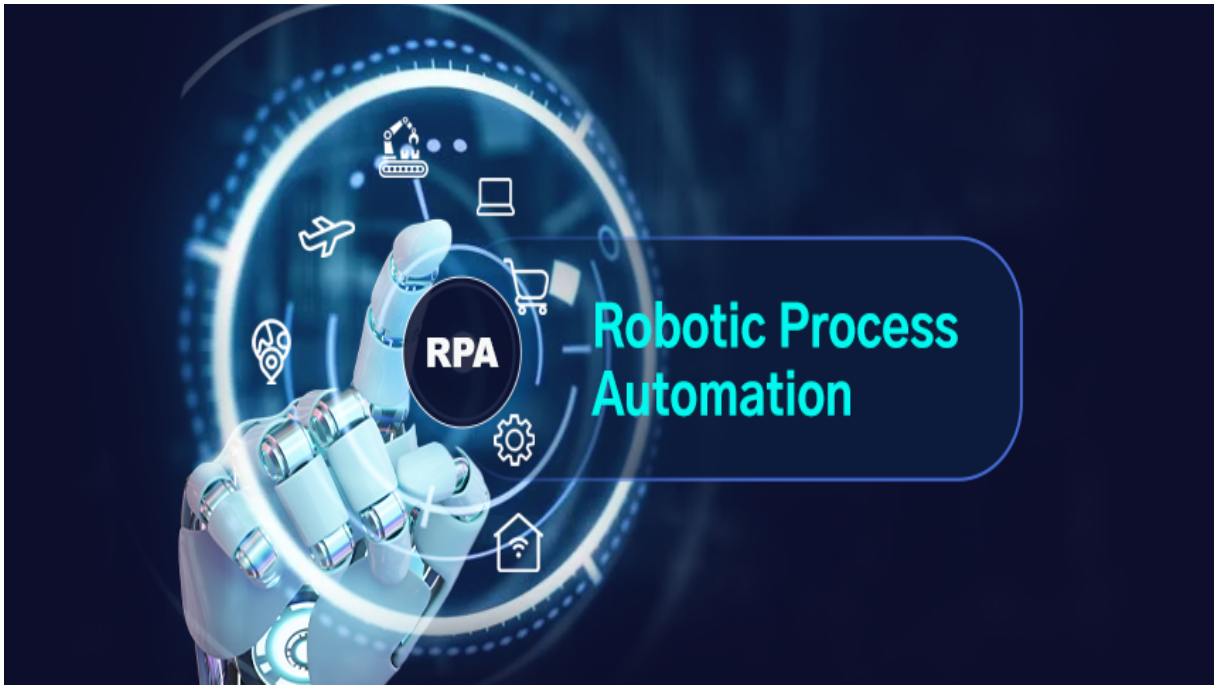


Figure 1.1: Robotics Process Automation

1.2 Evolution Of RPA

The Evolution of Robotic Process Automation (RPA) has been a remarkable journey, reshaping how businesses approach automation and operational efficiency. Initially introduced as a solution to alleviate the burden of manual, repetitive tasks, RPA has undergone significant transformations over the years.

1.2.1 Emergence of Rule-Based Automation:

RPA began its journey by focusing on rule-based tasks. Early adopters employed RPA to automate routine processes, such as data entry, form filling, and basic decision-making, freeing up human resources for more strategic endeavors.

1.2.2 Integration with Artificial Intelligence (AI) and Machine Learning (ML):

As technology advanced, RPA evolved to integrate seamlessly with AI and ML capabilities. This synergy allowed RPA systems to handle more complex tasks, learning from patterns, making decisions, and adapting to dynamic scenarios. Cognitive automation emerged, enabling RPA to mimic human cognitive functions.

1.2.3 Intelligent Automation and Process Discovery:

The evolution continued with the integration of intelligent automation, where RPA systems became smarter and more adaptive. Process discovery tools enabled organizations to identify automation opportunities by analyzing user interactions with digital systems. This facilitated a more strategic and targeted approach to RPA implementation.

1.2.4 Cloud-Based RPA:

The shift towards cloud computing had a profound impact on RPA. Cloud-based RPA solutions gained popularity, offering scalability, flexibility, and enhanced collaboration. This allowed organizations to deploy and manage RPA initiatives more efficiently.

1.2.5 Focus on Governance and Security:

As RPA became more integral to business operations, a heightened focus on governance and security emerged. Organizations recognized the need for robust control mechanisms to ensure compliance, data security, and ethical use of automation technologies.

1.2.6 Future Trends:

Looking ahead, the evolution of RPA is likely to continue with advancements in areas like natural language processing, sentiment analysis, and a deeper integration with advanced technologies. The future of RPA involves creating more resilient, self-learning systems that can adapt to evolving business needs. In essence, the evolution of RPA reflects a broader shift towards intelligent, interconnected automation solutions, empowering organizations to achieve unprecedented levels of efficiency and innovation in their operations.

1.3 Background Of RPA

Robotic Process Automation (RPA) emerges as a pivotal solution, diminishing human errors and augmenting work efficiency by simplifying the execution of functions . Utilizing computer software, RPA eliminates the necessity for manual involvement in repetitive business operations and information processing . Noteworthy RPA tools, including UiPath, Automation Anywhere, and Blue Prism, offer distinct advantages, functions, and price points . Telefonica O2 exemplifies RPA application, employing it for reserving and transferring user messages in its SIM exchange process .

Research on RPA has burgeoned, highlighting its advantages across diverse operations such as comprehensive purchase-to-pay and order-to-cash processes . The strategic transformation of global business services , establishment of organizational centers of excellence , and enhancement of audit quality further underscore its impact. Despite various studies exploring specific software packages and comparing platforms , limited attention has been directed towards RPA implementation under general conditions. By fusing leanness with individual waterfall models, the approach automates tasks and utilizes lean principles in performance evaluation. This method, drawing inspiration from lean manufacturing, offers a more efficient way to facilitate RPA implementation and adjust procedures based on synchronized evaluation results, paving the way for optimized and adaptive robotic process automation in diverse organizational settings.

1.4 Implementation Of RPA

The traditional RPA development process can be divided into RPA Plan, RPA Demand and Definition, RPA Design, RPA Implement, RPA Test, RPA Operation and RPA Maintenance.

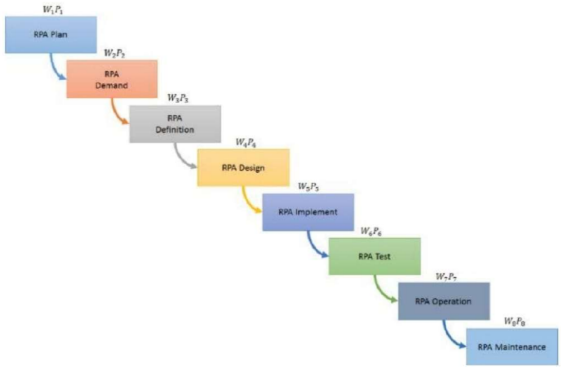


Figure 1.2: RPA Development Process

- RPA Plan initiates planning of the project, and the pre-assessing and selection of resources and manpower for execution.
- RPA Demand and Definition set the scope of the project and the problem to be solved to ensure that the implementation satisfies the needs of the end-user.
- RPA Design must meet the needs of end-users for subsequent engineering staff.
- RPA Implement is the service and application development phase.
- RPA Test tests the developed services and developed applications to ensure compliance with plans and risk control.
- RPA Operation supports the operation and service of the business.
- RPA maintenance is responsible for adjusting and revising the missing in the above process.

This work introduces a more efficient approach by designing and implementing Robotic Process Automation (RPA) based on agile development with a decentralized method. The idea is to break down the entire RPA workflow into N equal parts, each corresponding to an office transaction, for quicker development and application. This approach reduces the cost of abandoning parts that don't meet expectations. The scope of development can be adjusted, minimizing uncertainty and wasted resources. Each development cycle involves RPA planning, demand and definition, design, implementation, testing, operation, and maintenance. Each cycle takes a certain amount of time, and the total time required (TC) is the sum of all these cycle times. This agile method allows for more flexibility and adaptability in the development process, reducing the risks associated with traditional, monolithic approaches.

1.5 Applications Of RPA

RPA is a non-traditional automation, it does not require application integration into a database or infrastructure level. It can work across applications (agnostic), non-intrusive and utilize existing infrastructure With these characteristics, the RPA can be applied to vary business process in many departments. However, the form of RPA application in each company is diverse, it depends on the organizational structure, business process flow and decision-making process in the company.

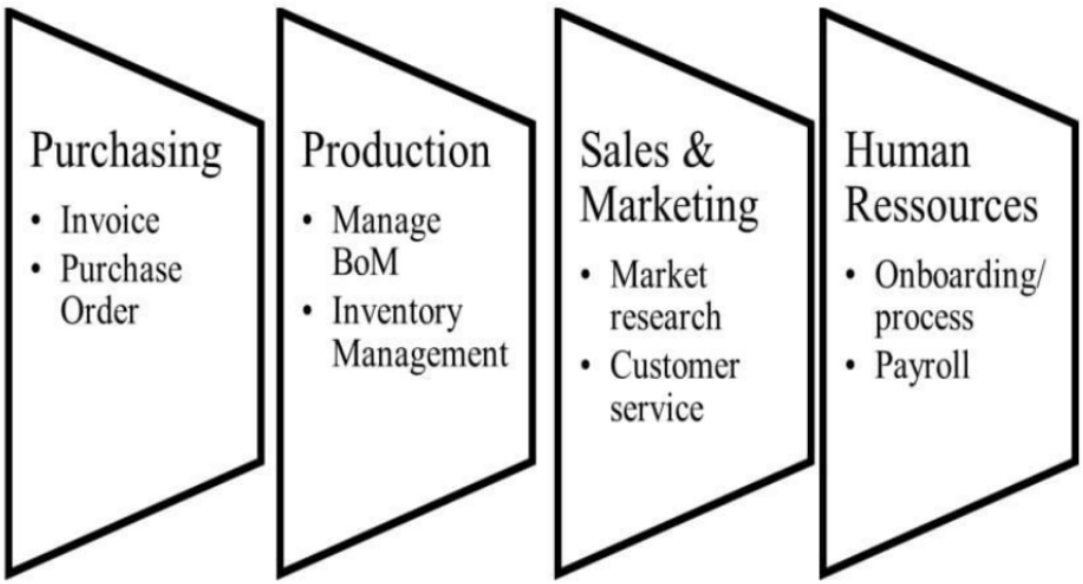


Figure 1.3: RPA Application areas

1.5.1 Purchasing :

Purchasing is activity that cannot be separated from administration tasks. Those tasks always consume a lot of resources such as energy and working hours. With RPA in purchasing department, invoice process and request material or part, can be accelerated with less resource consumption. For requesting material, the RPA is applied to create purchase order which refer to supply planning. In addition, the RPA can also be used for processing invoices from supplier. When the invoice email arrives to purchasing department, the RPA will read it and extract the relevant data that required by Enterprise Resources Planning (ERP) system. If there is a missing data or mismatch data with purchase order or delivery document, the RPA will send an email to supplier and ask them to complete or match the data. After all data are complete, RPA will open ERP system and enter the data. The RPA will send a confirmation email to supplier and notification email to finance and accounting department, as soon as all data are entered and matched.

1.5.2 Production:

In the production department, the RPA could be used for managing Bill of Materials (BoM). As an important document which contains information about list of material, quantities of material, part numbers, part description, measuring unit and how to procure (purchased or manufactured), the BoM must be managed carefully. Any error in entering or updating BoM, can generate problems such as lower material planning, inaccurate product costs, late delivery and others. Therefore, for avoiding those errors, the use of RPA as data entry operator is highly recommended. In inventory management, RPA is used to monitor the stock of material, whenever the RPA find stock is nearly empty in warehouse, it will send notification to purchasing department to start request material process.

1.5.3 Sales and Marketing:

There are several processes in sales and marketing department that can be supported by RPA such as; market research, customer relationship management, customer service, and others. In market research, the RPA can be used to gather information in internet about market trend, competitor's price, customer preference and behaviour. Besides that, the RPA can be used as supporting tool for forecasting, by collect historical data and clean data before used for forecasting. In customer relation management, the RPA can be act as operator who work 24-hours for updating customer information, monitoring shipment, processing order and handling claim . The 24-hours service is important for company that have customer where located in different time zone.

1.5.4 Human Resources :

The main mission of Human Resources Department (HRD) is to provide the best service for their customers, namely existing employees and prospective employees who want to apply to the company . Therefore, excellent service, must be performed since onboarding process. The RPA can support onboarding process by verifying candidate's background, filling and processing application forms, transferring candidate's data into company's database and sending email notification to candidate. In addition to onboarding process, RPA can also support payroll process. this process is need to be automated, considering high accuracy requirement for entering and updating data into ERP system. The manually data entry is time-consuming and sometimes make mistake that can trigger conflicts between company (HRD) and employees. With RPA, the activities such as: receiving payroll request (via email), reading request and entering relevant data on payment request to ERP system, can be executed quickly and high accuracy.

1.6 Benefits Of RPA

1.6.1 For Company:

The RPA can work non-stop 24 hours with speed up to 15 times faster than humans, with that performance, robot can execute many tasks and increasing productivity. The Deloitte survey in 2017, showed that company productivity had improved by 86%, after applying RPA. It was also accompanied by increasing in quality 90%, and compliance 92%. This indicator clearly provides a sign that the RPA can increase efficiency by reducing operational costs in office. In manual process, a task is handled by 3 Full Time Employment (FTE), who work for 8 hours in three shifts. By automation process (RPA), it only one robot is needed to work for 24 hours. Thus, costs for employees will be saved.

1.6.2 For Customer:

The application of RPA brings benefits for customers in the form of excellent service. Since ordering items until after sales service, the customer will experience fast process, and exclusive service. This is possible, considering that sales forces are no longer burdened by routine tasks. They will interact more to the customers, serve and answer questions relating product.Besides that, the RPA avoid human-error in processing order. Customers will get unpleasant experience, if the arrived-items, do not match what was ordered. They have to send items back, and wait for the right items come.

1.6.3 For Employee:

The benefit of RPA for employees can be seen into two form: tangible and intangible. The tangible benefit is shown by RPA support as worker assistant (attended mode)

in executing tasks. While, intangible benefits are increasing knowledge, skills, creativity, self-confidence, satisfaction. When employees are free from repetitive tasks, they will have opportunity to learn, increase knowledge, skills and creativity. The increase will give them confidence to execute high-value added tasks and increasing their role in the company.

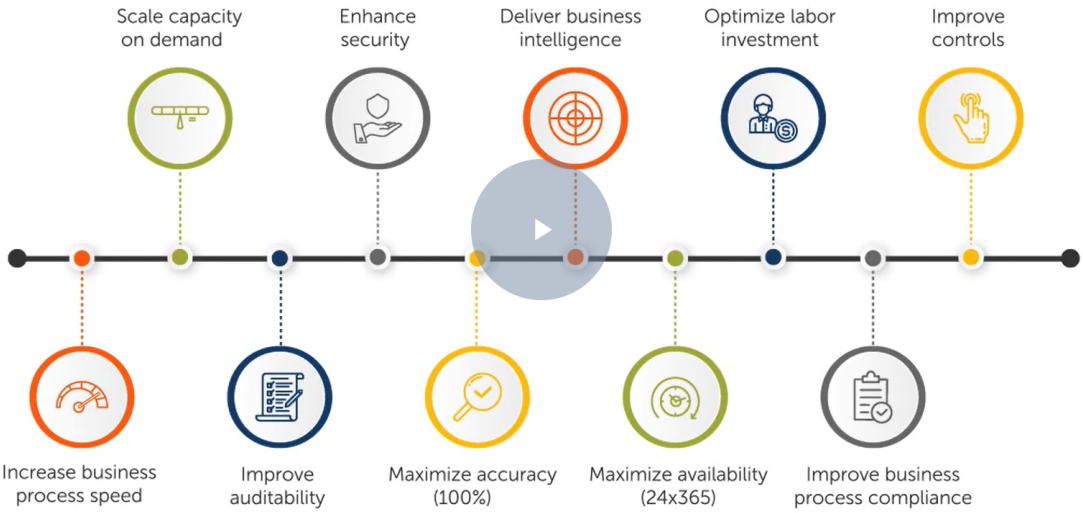


Figure 1.4: benefits

Chapter 2

Automation Anywhere

2.1 What is Automation?

Automation refers to the use of technology and software to perform tasks or processes without direct human intervention. The main goal of automation is to streamline and optimize workflows, reduce manual effort, increase efficiency, and improve accuracy. It involves the use of machines, computers, or robotic systems to perform repetitive, mundane, or complex tasks that would otherwise require human labor. Automation Anywhere Online Training can be applied to various industries and sectors, including manufacturing, logistics, and finance, healthcare, and information technology. It ranges from simple automated processes like email filtering to more sophisticated applications like industrial robotics in manufacturing, automated financial transactions, and self-driving vehicles.

The advantages of automation include increased productivity, faster execution of tasks, cost reduction, minimized errors, and the ability to operate continuously without human intervention. However, automation also raises concerns about potential job displacement and the need for up skilling the workforce to adapt to a more automated future

2.2 What is Automation Anywhere?

Automation Anywhere online training certification is a leading Robotic Process Automation (RPA) software platform that empowers businesses to automate repetitive and mundane tasks. It enables organizations to deploy software bots that can interact with various applications and systems, performing rule-based processes just like human users. Automation Anywhere certification course offers a user-friendly interface, supports intelligent automation through AI capabilities, and allows seamless integration with diverse software environments. With its scalability and robust features, Automation Anywhere online certification helps businesses improve operational efficiency, reduce errors, and drive digital transformation across industries.

Figure 2.1: logo

2.3 Bots In Automation Anywhere

In Automation Anywhere online training, bots are software robots that automate tasks, processes, and workflows within the platform. There are three main types of bots in Automation Anywhere:

1. **Task Bots:** Task Bots are the most common type of bots in Automation Anywhere. They are designed to perform specific repetitive tasks, such as data entry, file operations, web scraping, and more.
2. **Meta Bots:** Meta Bots are reusable automation components that allow organizations to create standardized and modular automation solutions. They capture common functionalities and logic to be used across multiple Task Bots.
3. **IQ Bots:** IQ Bots are advanced bots that leverage artificial intelligence and machine learning capabilities. They are designed to handle unstructured data, such as scanned documents, PDFs, and images.

Together, these bots form the backbone of Automation Anywhere's automation capabilities, enabling organizations to automate a wide range of processes and achieve greater productivity and efficiency.

2.4 Automation Anywhere Architecture

The Automation Anywhere architecture is designed to facilitate the efficient execution of automation processes, providing scalability, reliability, and security. It consists of several key components that work together to enable the deployment and execution of bots. Here's an overview of the Automation Anywhere architecture:

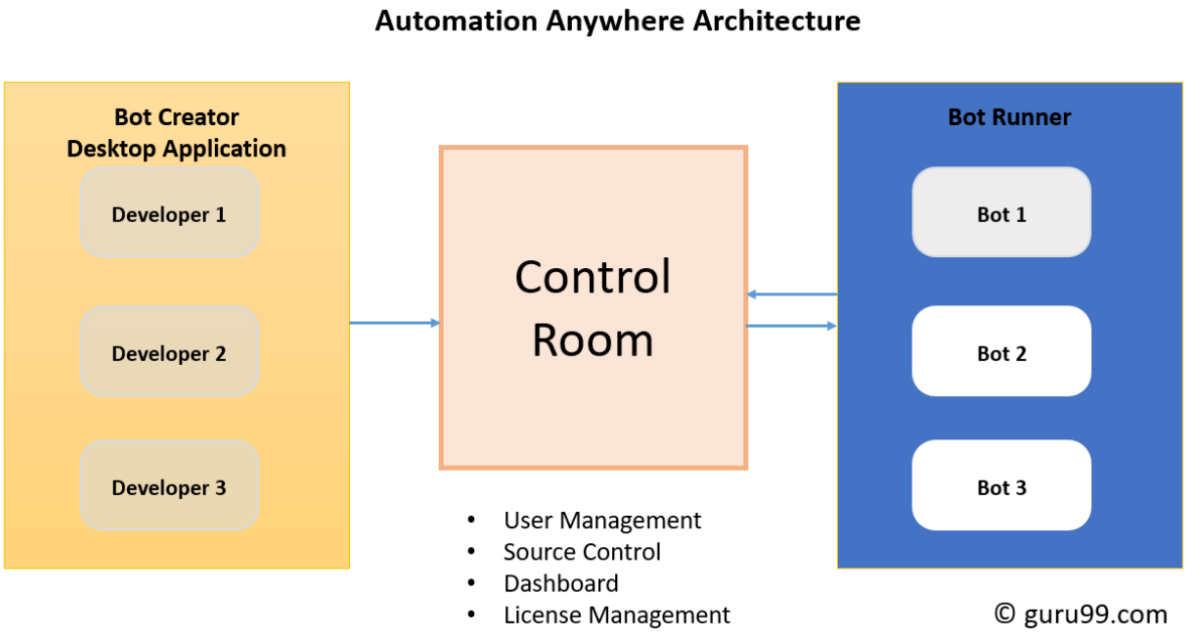


Figure 2.2: Architecture

1. Control Room: The Control Room is the central hub of the Automation Anywhere platform. It serves as the web-based control center where administrators manage and monitor all automation activities. From the Control Room, users can schedule, deploy, and manage bots, view execution logs, and access analytics and reporting.

2. Bot Creator: The Bot Creator is the development environment provided by Automation Anywhere. It is a desktop-based application where developers and business users can design, build, and test bots.

3. Bot Runner: The Bot Runner is the runtime engine that executes bots created in the Bot Creator. It is installed on the machines where the automation processes will take place. The Bot Runner executes the tasks and interacts with applications and systems according to the instructions provided in the bot's workflow.

2.5 Automation Anywhere Enterprise RPA

Automation Anywhere Enterprise RPA is the core product of Automation Anywhere. It is a comprehensive RPA platform that enables organizations to design, deploy, and manage software bots to automate repetitive tasks and business processes.

2.5.1 Features of Automation Anywhere

1. Most Intuitive RPA: Automation Anywhere offers a user-friendly and intuitive interface, making it easy for users with varying technical expertise to design and deploy automation workflows efficiently.
2. Secure by Design: Security is a priority in Automation Anywhere. The platform ensures data protection, access control, and encryption, ensuring the safety of sensitive information during the automation process.
3. Fastest to Scale: Automation Anywhere provides a scalable architecture, allowing organizations to deploy and manage thousands of bots simultaneously. This scalability ensures efficient handling of large-scale automation initiatives.
4. Transparent: The platform provides transparency in bot performance and execution. Users can track, monitor, and audit bot activities, ensuring complete visibility into the automation process.
5. AI-Augmented RPA: Automation Anywhere incorporates artificial intelligence (AI) capabilities to augment RPA. AI-powered bots can handle unstructured data, improve decision-making, and perform more complex tasks.
6. Flexible: Automation Anywhere offers flexibility in integrating with various applications, systems, and data sources. This flexibility allows for seamless automation across diverse software environments.
7. Support: Automation Anywhere provides robust support and resources to users, including documentation, training, and a global customer support team to assist with any queries or issues that may arise during automation projects.

2.5.1.1 Benefits of using Automation Anywhere

1. Reduces Total Cost of Ownership (TCO): Automation Anywhere helps organizations achieve cost savings by streamlining processes, reducing the need for manual labor, and optimizing resource utilization.

2. Provides Easy Access: Automation Anywhere's user-friendly interface and intuitive design make it accessible to a wide range of users, including business users and non-technical professionals.

3. Business Agility: By automating repetitive tasks and processes, Automation Anywhere enhances business agility. It enables companies to respond quickly to changing market demands, allocate resources efficiently, and focus on strategic initiatives, thereby staying ahead of the competition.

4. High Scalability: Automation Anywhere offers a scalable architecture that allows organizations to deploy and manage thousands of bots across various departments and functions.

5. Quick Deployment: Automation Anywhere enables rapid automation deployment with its user-friendly design and pre-built templates. This quick deployment results in faster ROI and allows organizations to achieve automation benefits in a shorter timeframe.

Chapter 3

Details of the Project

3.1 Problem Statement

In today's digital landscape, ensuring the security and integrity of client data is paramount for organizations across various industries. The manual process of generating security hashes for client data can be time-consuming and prone to errors. Therefore, the implementation of automated solutions using Robotic Process Automation (RPA) tools like Automation Anywhere becomes essential to streamline these tasks and improve efficiency. The primary objective of the "Calculate Client Security Hash" project is to automate the generation and insertion of security hashes for client data, reducing manual effort and minimizing the risk of errors. By leveraging RPA bots, the project aims to access the client security hash file from the designated website, extract the required data, and utilize online hash function generators to compute hash values. Additionally, the project seeks to update the client security hash file by inserting the generated hash values into the comment section and marking the task as "completed." Upon successful implementation, the project is expected to yield several benefits, including increased efficiency, reduced manual effort, and improved data security. Automation of the hash generation process will lead to faster turnaround times and enhanced accuracy, ensuring that client data remains protected. Furthermore, by leveraging RPA bots in Automation Anywhere 360 Community Version, the project demonstrates the potential of automation technologies to streamline complex data processing tasks and optimize workflows in a cost-effective manner.

3.2 Objective / Motivation Scope

The primary objective of the "Calculate Client Security Hash" project is to automate and optimize the process of generating security hashes for client data, thereby enhancing data security and operational efficiency. The project aims to achieve the following key goals:

- Streamlining Hash Generation Process: Develop an automated system to access the client security hash file from the designated website (acme-test.uipath.com), extract the required data, and compute hash values using online generators for various hash functions, including SHA1.
- Updating Client Security Hash File: Implement mechanisms to insert the generated hash values into the comment section of the client security hash file, ensuring transparency and traceability of the generated hashes. Additionally, update the status of the file to "completed" to indicate the successful completion of the hash generation process.
- Leveraging RPA for Efficiency: Utilize RPA bots in Automation Anywhere 360 Community Version to execute the automated tasks seamlessly, reducing manual effort and minimizing the risk of errors. By integrating RPA technology, the project aims to optimize workflows and improve overall operational efficiency.

By accomplishing these objectives, the "Calculate Client Security Hash" project intends to modernize and standardize the process of generating security hashes for client data, ultimately enhancing data security measures and streamlining operational workflows within the organization.

Chapter 4

Methodological Details

4.1 Requirement Analysis

- Engage Stakeholders: Initiate workshops and interviews with stakeholders to gather insights and requirements for the client security hash project.
- User-Centric Approach: Employ methodologies like path mapping and user stories to understand user needs and pain points effectively.
- Prioritize Requirements: Analyze requirements based on business objectives, technical feasibility, and user impact to establish a development roadmap.

4.2 Design and Planning

- Collaborate on Bot Creation: Work closely with Automation Anywhere developers to design and develop the client security hash bot, utilizing appropriate packages and actions within Automation Anywhere Community Edition.
- Validate Usability: Test the bot's functionality to ensure it meets user expectations, gathering input from stakeholders throughout the process.
- Define Technical Architecture: Specify the necessary bot packages, actions, and integration points required for the technical architecture of the client security hash bot. This includes outlining database structures, API interactions, and the utilization of front-end and back-end technologies within Automation Anywhere Community Edition.

4.3 Packages and Actions

4.3.1 Packages

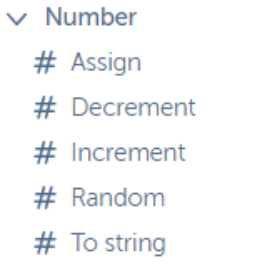
A package in Automation 360 is a collection of actions that you use and configure to build automations. A package provides the following building blocks for automation:

- Actions (also called commands in v11 and v10)
- Conditional statements (used to set If conditions)
- Iterators (used to set the number of times something has to be run)
- Triggers (conditions that cause an automation to run)
- Variables (system or custom)

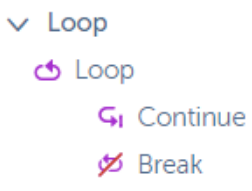
Go to Automation ¿ Create new ¿ Task Bot. In the Actions pane on the left, view packages and actions, variables, and triggers that you use to build your automations.

4.3.2 Actions

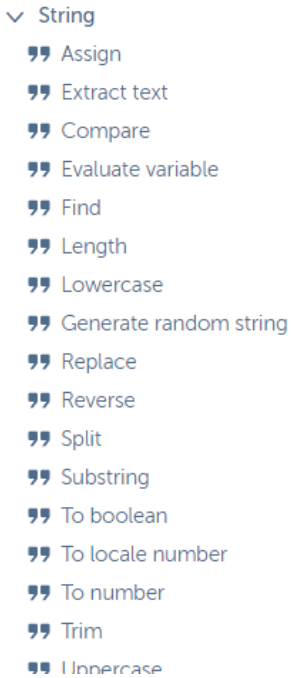
Actions are grouped into packages based on the technology they automate.



(a) actions



(b) actions



(c) actions

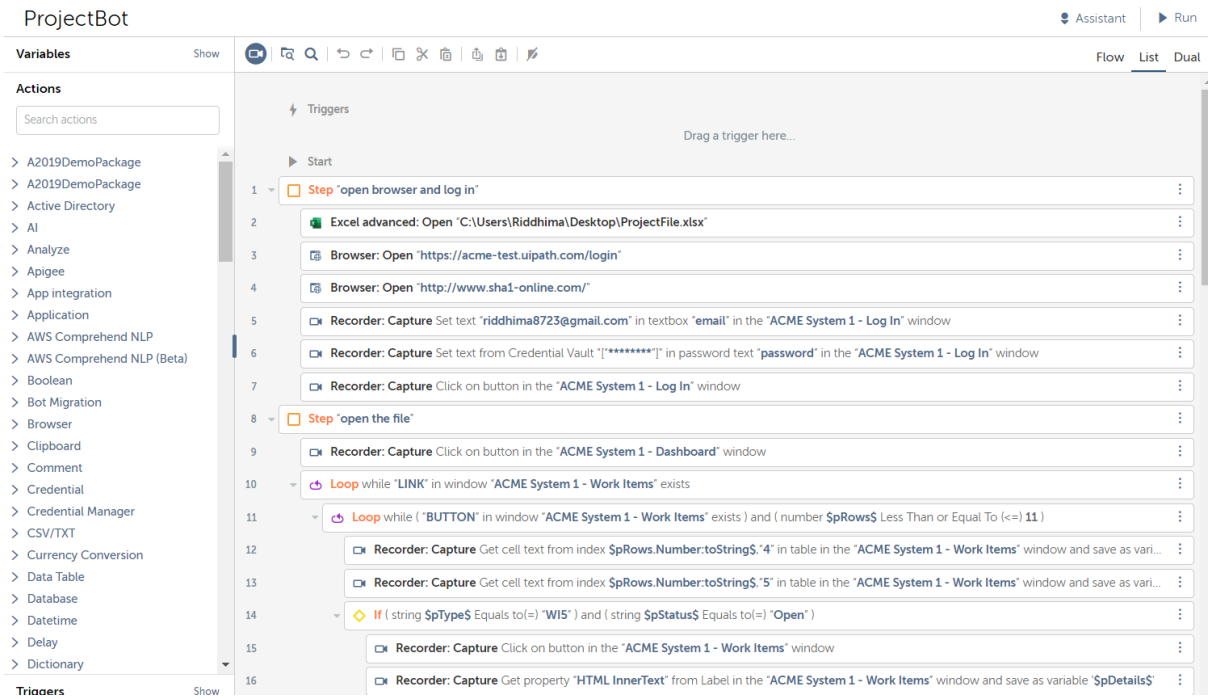


Figure 4.2: bot1

4.4 Bot Creation

4.4.1 Procedure:

1. Log in to your instance of the Automation Anywhere Control Room.
2. Create a new bot:
   - On the left panel, click Automation.
   - Click Create new ¿ Bot.
   - In the Create Task Bot window, enter the bot name.
   - Accept the default folder location: 'Bots' To change the default bot storage location, click Choose and follow the prompts.
   - Click Create and edit.
3. Open the browser and log in.
4. Open the ACME Test website using the Browser package.
5. Open the SHA1 online website using the Browser package.
6. Set the email and password in the respective text fields on the ACME System 1 - Log In window using the Recorder package.
7. Click the Log In button using the Recorder package.
8. Use an If action to check if the file name matches "Calculate client security hash". If true, click the Open button.

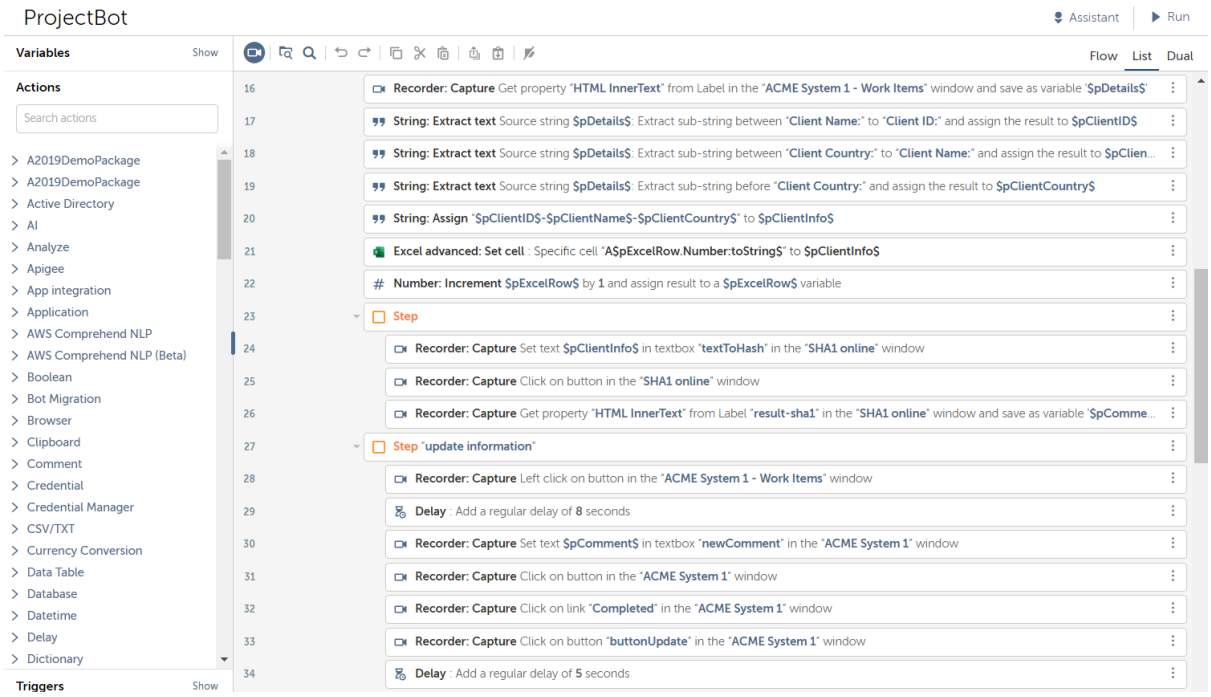


Figure 4.3: bot2

9. Click on the Dashboard link in the ACME System 1 - Dashboard window.
10. Capture the client details from the Work Items table using Recorder package within a loop for dynamic inner loop through lists of tables.
11. Extract the required information from the captured data.
12. Use Recorder Capture action to extract the string and use String Assign operator to assign it to the variable.
13. Set the extracted text to hash in the SHA1 online window.
14. Get the result-sha1 text from the SHA1 online window and save it as a variable.
15. Update the information in the ACME System 1 - Work Items window, change the status as updated/completed.
16. Save the workbook.
17. Click on the Log Out link in the ACME System 1 - Work Items window.
18. Close the browser tabs for ACME System 1 and SHA1 online.

In conclusion, these series of actions form a robust bot workflow designed to automate the process of calculating client security hash in the ACME Test environment. By seamlessly integrating browser interactions, data extraction, conditional logic, and task execution within a loop structure, this automation ensures efficiency and accuracy in handling client data while maintaining security protocols. With these steps in place, the bot streamlines the workflow, enhances productivity, and contributes to the overall optimization of business processes.

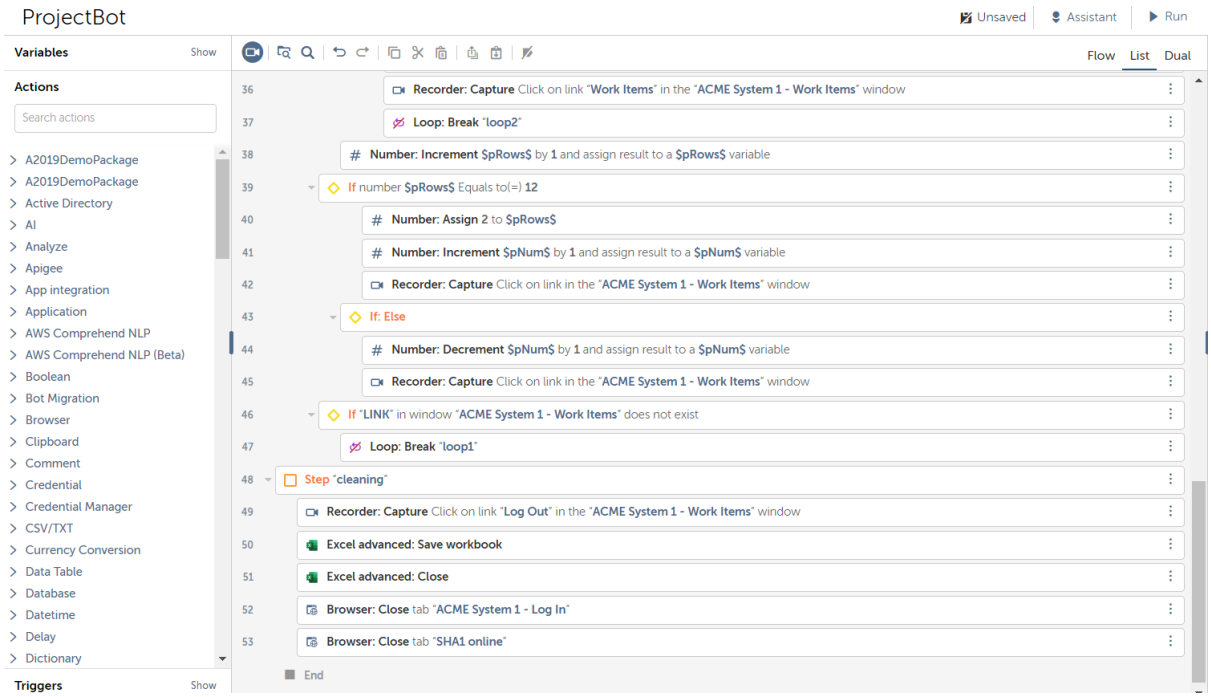


Figure 4.4: bot3

4.5 Testing and Quality Assurance

4.5.1 Functional Testing:

Conduct comprehensive functional testing to ensure that the bot performs all specified actions accurately and efficiently. Verify that the bot successfully opens the required websites, logs in with the provided credentials, navigates through the user interface to access relevant data, extracts client details from the work items table, calculates the client security hash using appropriate online tools, updates the information in the ACME System 1 - Work Items window, and logs out properly. Validate the bot's ability to handle different scenarios, such as variations in data format or unexpected pop-up messages.

4.5.2 Integration Testing:

Perform integration testing to confirm that the bot seamlessly integrates with the external systems and tools it interacts with during the execution of the automation process. Verify the compatibility and functionality of the bot with the browser package, recorder package for capturing actions, Excel advanced package for handling Excel files, and any other dependencies. Ensure that data is accurately transferred between different components of the automation, and that the bot responds appropriately to changes in the external environment, such as updates to the ACME Test website or modifications in the SHA1 online tool.

4.5.3 Quality Assurance and Error Handling:

Implement robust quality assurance measures to identify and address potential issues and errors within the bot's workflow. Set up error handling mechanisms to gracefully manage exceptions and unexpected situations, such as network failures, invalid credentials, or inconsistencies in data extraction. Implement logging and monitoring functionalities to track the bot's execution, capture relevant metrics, and generate reports for analysis. Conduct thorough reviews and validations of the bot's logic, configurations, and inputs to ensure compliance with business requirements and security standards.

Chapter 5

Results

The successful implementation of the "Calculate Client Security Hash" project has yielded significant benefits, showcasing the transformative power of automation in enhancing operational efficiency and user satisfaction. Here's an in-depth look at the results and outcomes achieved through the implementation of this project:

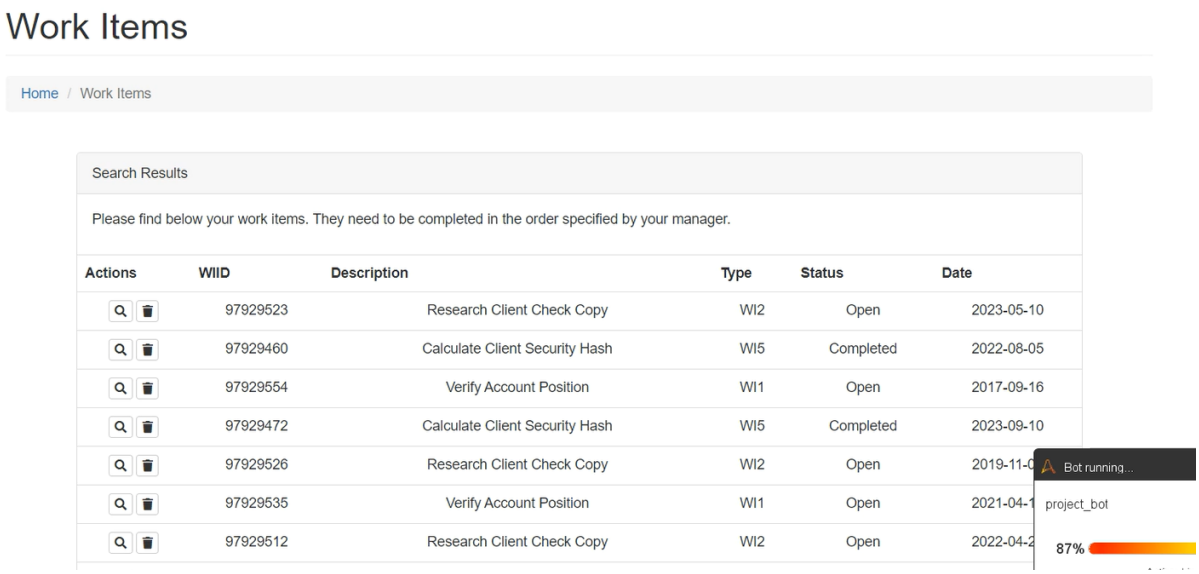


Figure 5.1: ACME Test website

1. Enhanced User Experience: The implementation of automated processes in the project led to a smoother and more intuitive user experience. By automating repetitive tasks such as data extraction and hash generation, users experienced a streamlined and efficient workflow, enhancing their overall satisfaction with the system.

2. Better Accuracy: Automation ensured consistent and accurate execution of tasks involved in calculating the client security hash. By removing the possibility of human error in manual data handling and processing, the project achieved a higher level of data accuracy, providing users with reliable results.

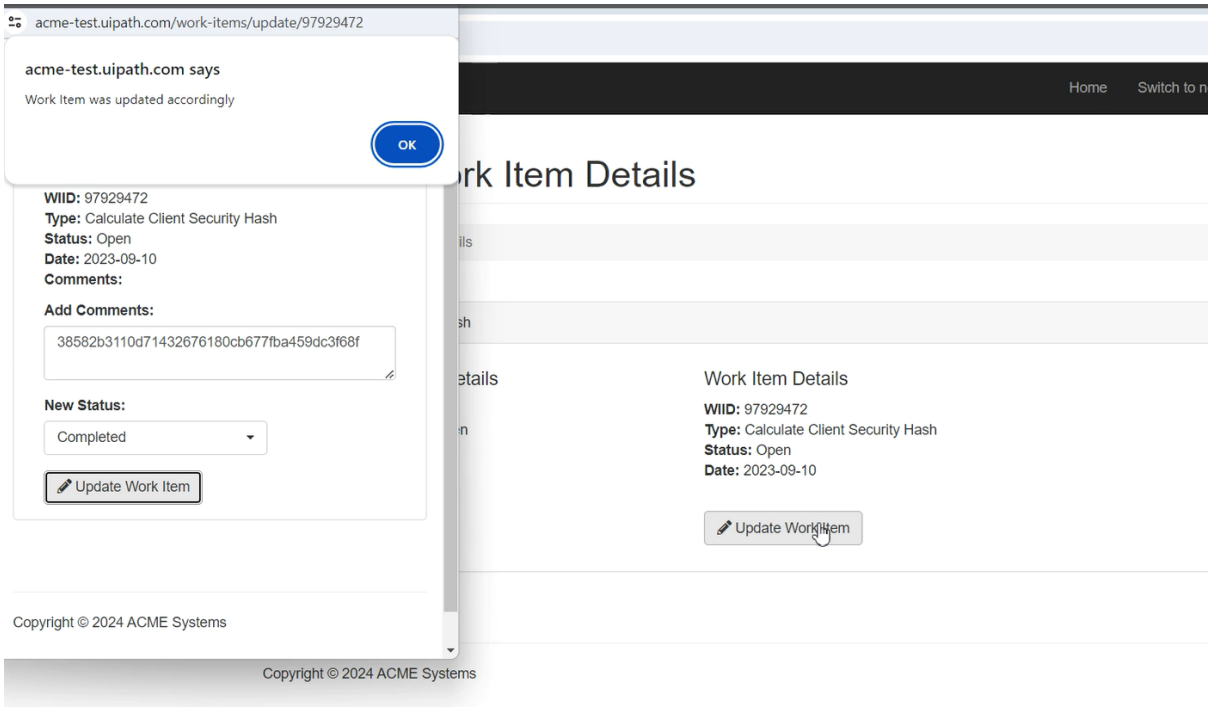


Figure 5.2: ACME Test website

3. Improved Productivity: Automation significantly improved productivity by eliminating the need for manual intervention in routine tasks. This allowed employees to focus on more value-added activities, leading to increased efficiency and productivity across the project.

4. Cost Savings: The automation of tasks in the project resulted in cost savings by reducing the need for manual labor and minimizing operational expenses. By optimizing resource allocation and streamlining processes, the project achieved greater cost-effectiveness, contributing to overall financial efficiency.

5. Accelerated Project Timelines: Automation enabled faster execution of tasks involved in calculating the client security hash, leading to accelerated project timelines. By automating repetitive and time-consuming processes, the project was completed more quickly and efficiently, ensuring timely delivery of results.

6. Facilitated Streamlined Automation: Overall, the project's automation initiatives facilitated streamlined automation across various processes, from data extraction to hash generation. This streamlined automation not only improved efficiency and accuracy but also contributed to enhanced user satisfaction, cost savings, and accelerated project timelines.

7. Improved Compliance: Automation ensures that client security hashes are generated and updated promptly and accurately, helping the organization maintain compliance with security standards and regulations.

8. Enhanced Scalability: The automated solution is highly scalable, capable of handling a large volume of client data efficiently without compromising accuracy or performance, thus supporting the organization's growth and expansion.

Figure 5.3: SHA1 online website

The implementation of automation for calculating client security hashes has brought about transformative results, ranging from enhanced data accuracy and increased cost savings to streamlined workflows and improved compliance. These outcomes underscore the significant impact of automation on optimizing operational efficiency, accelerating project timelines, and fostering employee satisfaction within the organization.

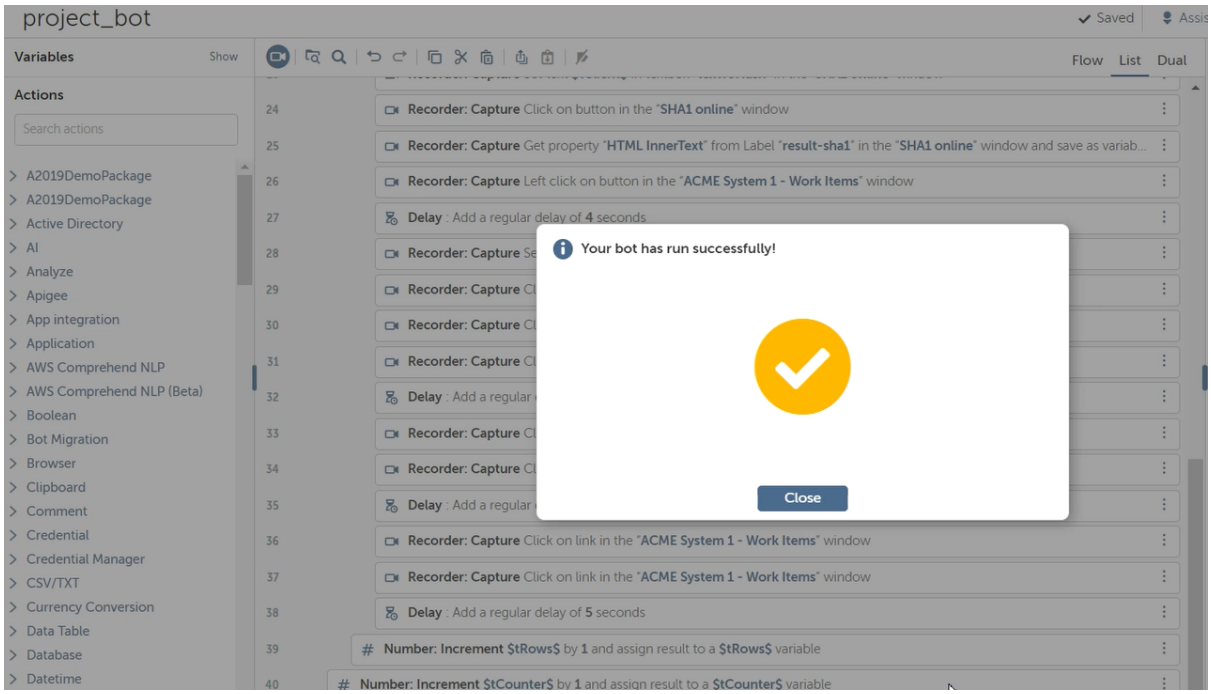


Figure 5.4: Bot Success

Chapter 6

Conclusion and Future Work

In conclusion,the successful completion of the project to automate the calculation of client security hashes marks a significant milestone in our journey towards enhancing operational efficiency and leveraging cutting-edge technology to streamline key processes. Through meticulous planning, rigorous development, and thorough testing, we have not only achieved our primary objective but also unlocked a myriad of benefits for our organization. By automating this critical task, we have not only improved data accuracy and minimized errors but also realized substantial cost savings by reducing manual effort and resource allocation.

Furthermore, the implementation of this automation solution has led to tangible improvements in productivity and employee satisfaction, as team members can now focus on more strategic initiatives while repetitive tasks are seamlessly handled by bots. The enhanced speed and accuracy afforded by automation have also accelerated project timelines, allowing us to deliver results faster and stay ahead of the curve in an increasingly competitive landscape. Overall, this project serves as a testament to our commitment to innovation and continuous improvement, positioning us for future success in an ever-evolving digital ecosystem.

Future Work

Looking ahead, the project to automate the calculation of client security hashes presents promising opportunities for further refinement and expansion. Future avenues for development and enhancement include:

1. **Integration of Additional Hashing Algorithms:** Expanding the capability of the automation solution by integrating support for additional hashing algorithms beyond SHA1, such as SHA256 or MD5, to offer users a broader range of options for securing their data.

2. **Enhanced Security Features:** Implementing advanced security features to fortify the encryption process and ensure the utmost protection of sensitive client information. This may involve incorporating encryption key management systems and multi-factor authentication protocols to bolster data security measures.

3. **Integration with Enterprise Systems:** Seamlessly integrating the client security hash automation solution with existing enterprise systems and workflows, such as customer relationship management (CRM) platforms or document management systems, to streamline data processing and enhance overall operational efficiency.

4. **Scalability and Performance Optimization:**Optimizing the automation solution for scalability and performance to accommodate increasing volumes of client data and ensure swift processing times, even during peak usage periods. This may involve leveraging cloud-based infrastructure and implementing parallel processing techniques.

5. **Compliance with Regulatory Standards:**Ensuring compliance with relevant regulatory standards and data protection regulations, such as GDPR or HIPAA, by implementing robust privacy controls and regularly auditing the automation solution to maintain adherence to compliance requirements.

By continuously innovating and evolving the client security hash automation project in alignment with emerging technologies and industry best practices, we can uphold our commitment to data security and integrity while delivering enhanced value to our stakeholders.

Chapter 7

Internship Details

7.1 Internship Certificate

CMMI APPRAISED

Silver Touch
TECHNOLOGIES

Date: 25th January 2024

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. Riddhima Prafulla Nikam** has successfully completed a one-month internship program from 18th December 2023 to 18th January 2024 in a "**RPA Services (Using Automation Anywhere)**" technology with our organization.

She was highly motivated and hardworking. She worked sincerely at her tasks and did a very good job. Also, Her attendance during the internship was 100%.

We wish her great success in her future endeavors.

Sincerely,
For Silver Touch Technologies Ltd

Silver Touch Technologies Ltd Ahmedabad

Meenal Patel
HR Manager

Silver Touch Technologies Limited
2nd Floor, Saffron Tower, Opp. Central Mall, Panchavati Cross Road, Ahmedabad 380006 Gujarat, India.
Phone: +91 79 4002 2770 - 4, Email: info@silvertouch.com, Website: www.silvertouch.com
CIN: L72200GJ1995PLC024465

Figure 7.1: Internship Certificate

7.2 Company Details

- Company Name - Silver Touch Technologies Ltd
- Location - 2nd Floor, Saffron Tower, Opp. Central Mall, Panchvati Cross Road, Ahmedabad - 380006 Gujarat, India
- Internship Mode - Online
- Background - Silver Touch specialize in implementation of Digital Transformation for Enterprise customers. We provide services on Artificial Intelligence, Machine Learning, Big Data Analytics, Robotic Process Automation (RPA).

7.3 Supervisor Details

- Name - Mr. Rachit Patel
- Email - rachit.patel@silvertouch.com
- Mobile - +919586673222

7.4 Attendance Record

Name of student	Riddhima Prafulla Nikam
Roll No	45
Div	A
Name of Course	Robotics Process Automation Internship
Date of Commencement of Internship	18 Dec 2023
Date of Completion of Training	18 jan 2024
Organization Name	Silver Touch Technologies Ltd

Table 7.1: Details

Day	1	2	3	4	5	6	7	8	9	10
Date										
Sign										

Day	11	12	13	14	15	16	17	18	19	20
Date										
Sign										

Day	21	22	23	24	25	26	27	28	29	30
Date										
Sign										

Table 7.2: Attendance Record

Industry Signature:
Industry Supervisor Name:
Email ID:

Bibilography

[1] Automation Anywhere Webpage https://community.cloud.automationanywhere.digital//home

[2] Automation Anywhere Guide learning@automationanywhere.com

[3] Software Automation 360 https://www.automationanywhere.com/products/enterprise/community edition

[4] https://developer.automationanywhere.com/botgames