TITLE OF PROJECT REPORT

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CHENNAI – 602 105

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BONAFIDE CERTIFICATE

Certified that this project report "…… ……..……..." is the bonafide work of "…….. ……"who carried out the project work for the subject OAI1903 - Introduction to Robotic Process Automation under my supervision.

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220701515

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ABSTRACT

This project focuses on the innovative use of Robotic Process Automation (RPA) to simplify and enhance the process of earning Microsoft Rewards. By leveraging *scrcpy, a lightweight, open-source tool for mirroring and controlling Android devices on a PC, and **UiPath*, a leading RPA platform, the solution bridges the gap between mobile device functionality and desktop automation. The primary objective is to automate the repetitive task of performing daily searches required for accumulating Microsoft Rewards points. Scrcpy enables seamless real-time mirroring and interaction with the phone, while UiPath workflows execute search operations, ensuring speed, accuracy, and consistency. This integration significantly reduces the manual effort involved in completing the tasks, saving time and increasing productivity. The project showcases the versatility of RPA when combined with mobile-centric tools, providing an efficient, scalable, and user-friendly approach to mobile task automation. Furthermore, the solution highlights the broader potential of RPA in extending its reach to domains like mobile rewards programs, where automation can bring tangible benefits by reducing monotony and optimizing task execution. This project not only addresses a specific use case but also serves as a foundation for future explorations into mobile and cross-platform automation.

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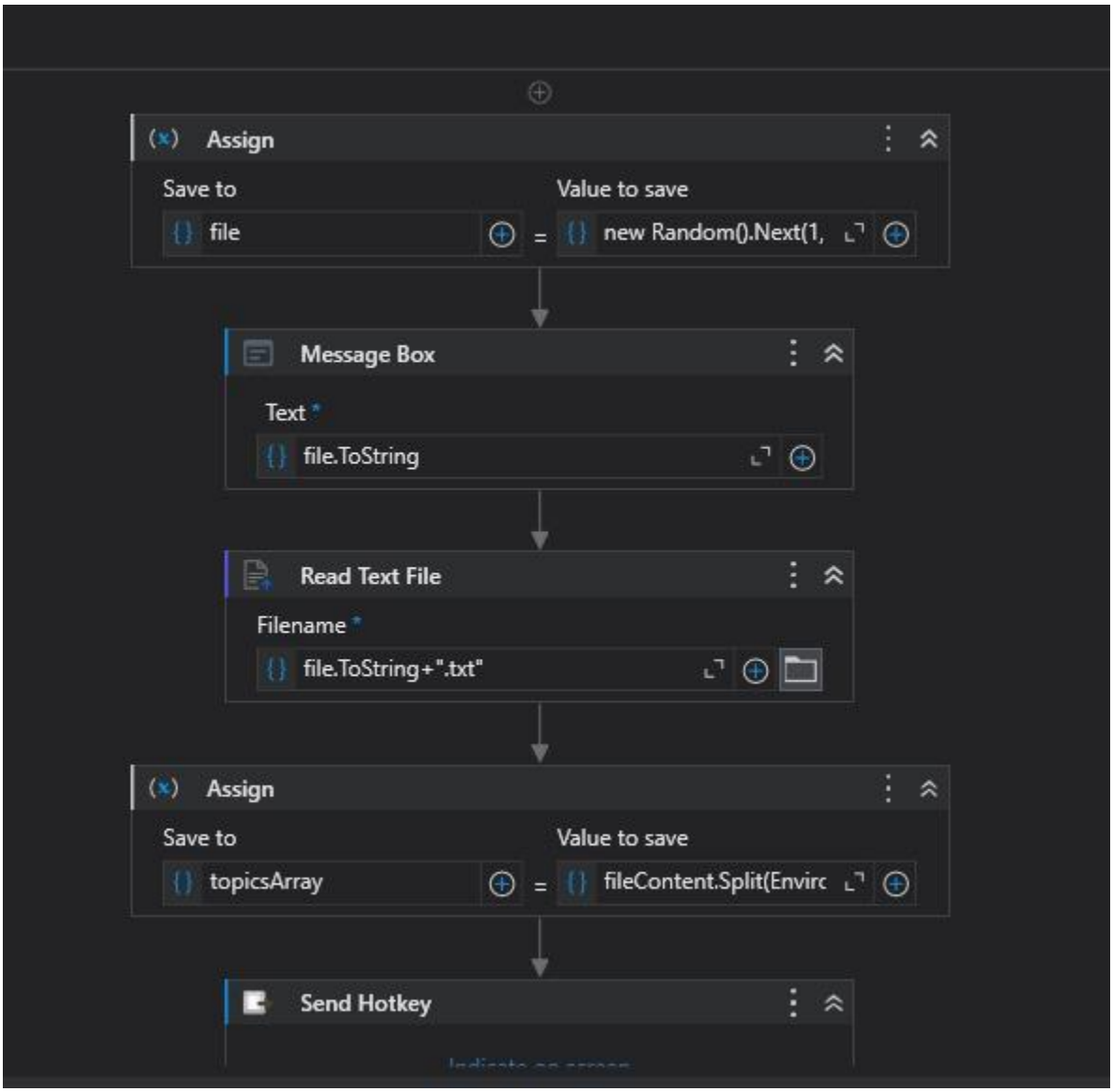

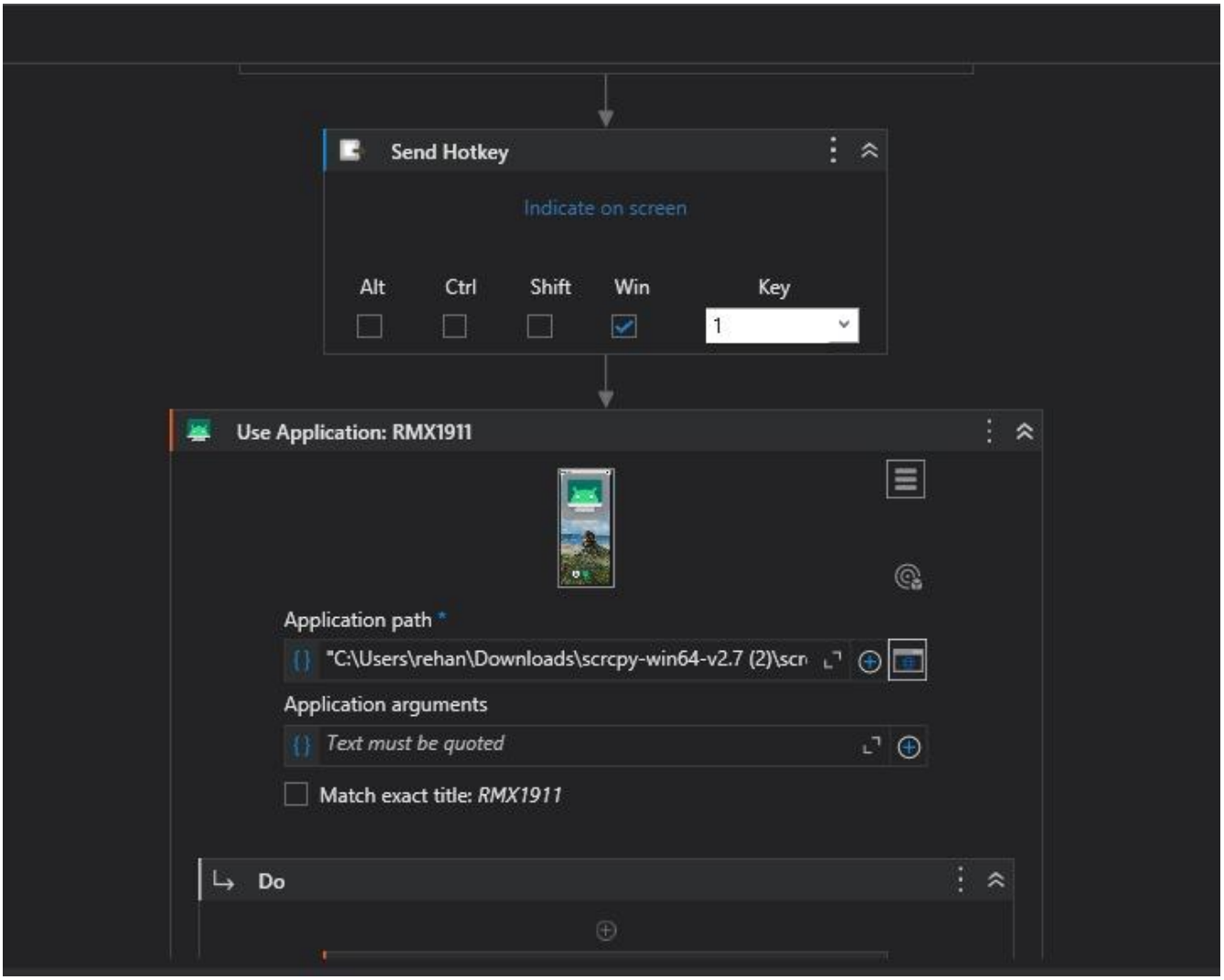
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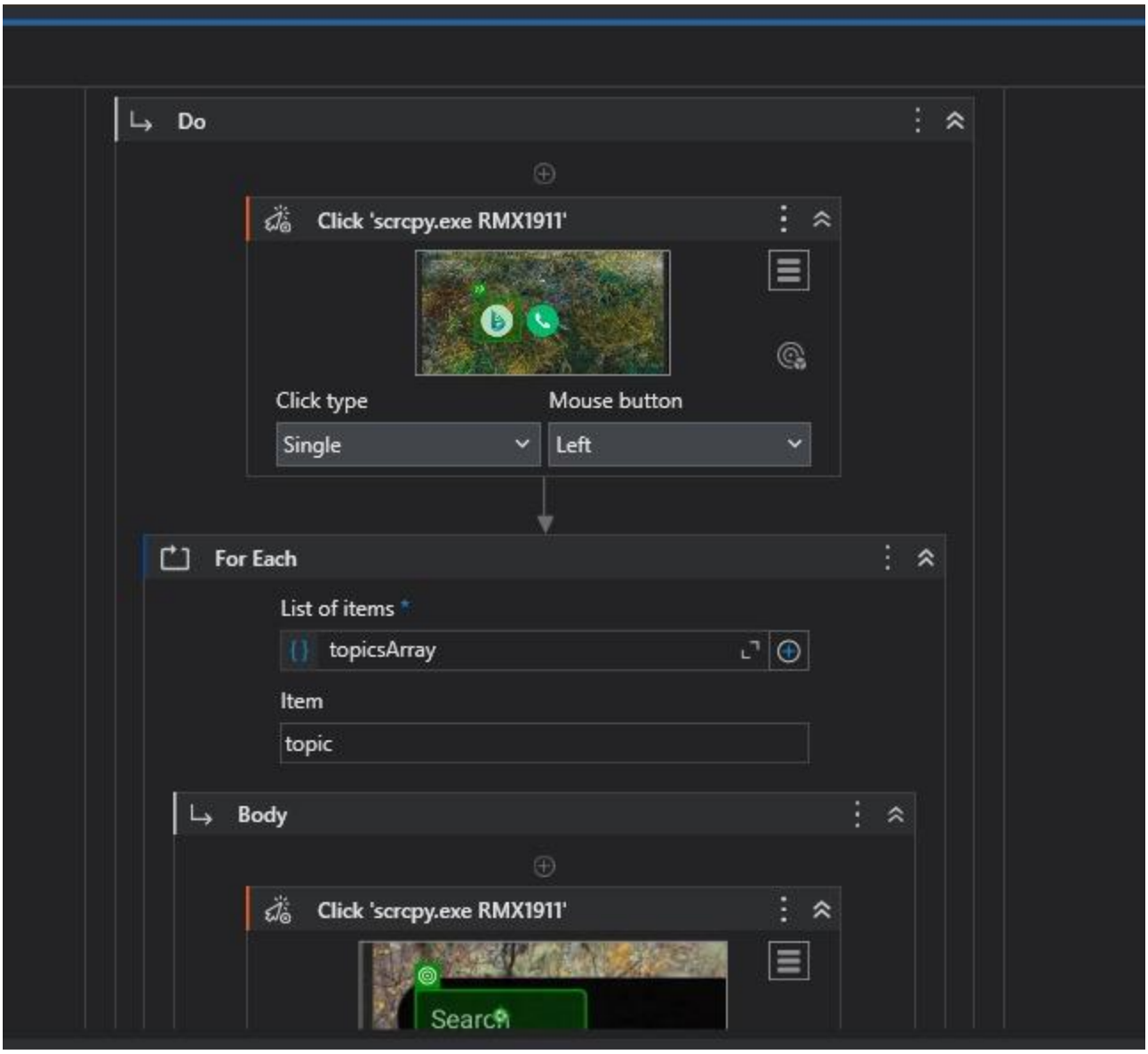
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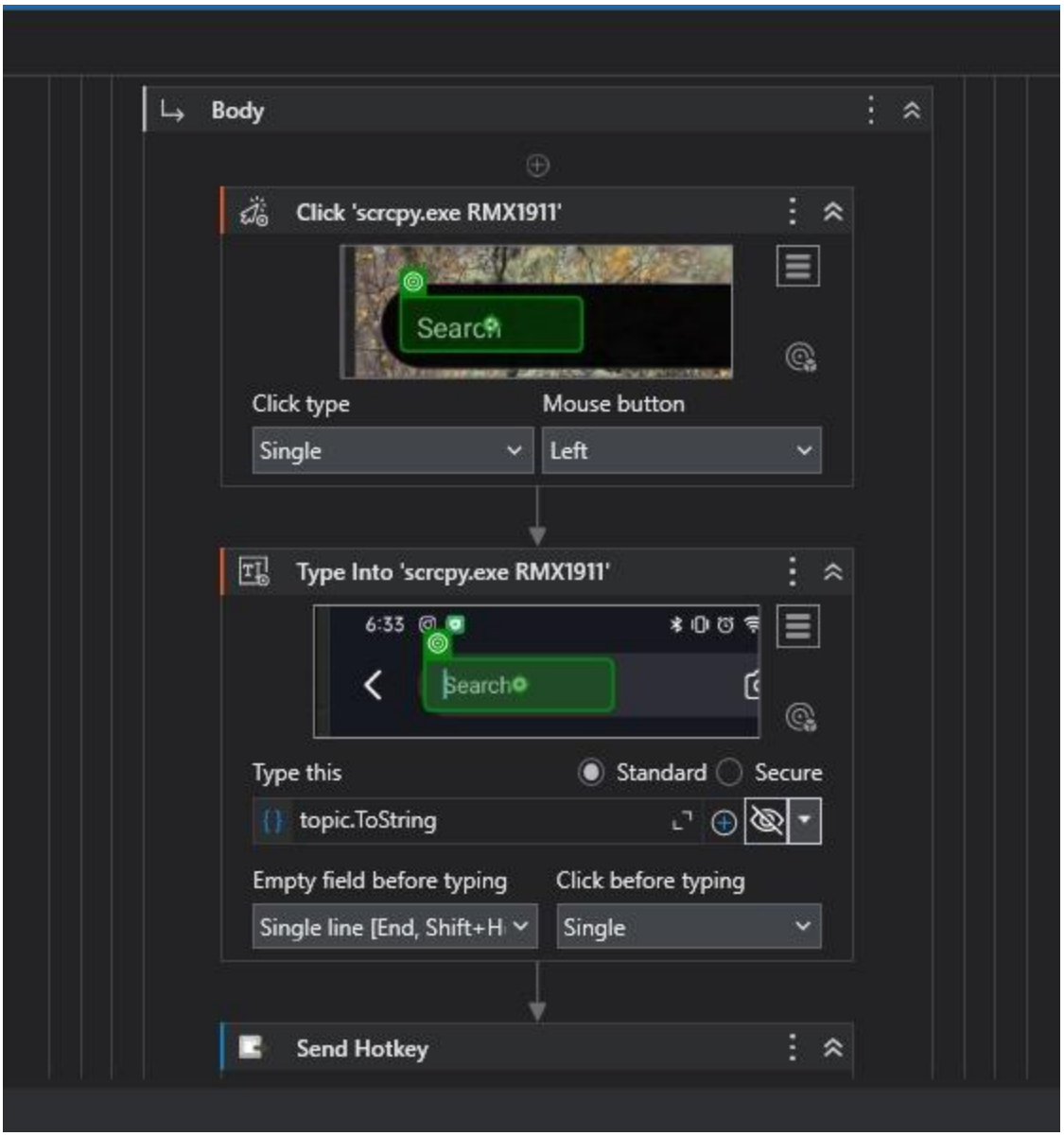
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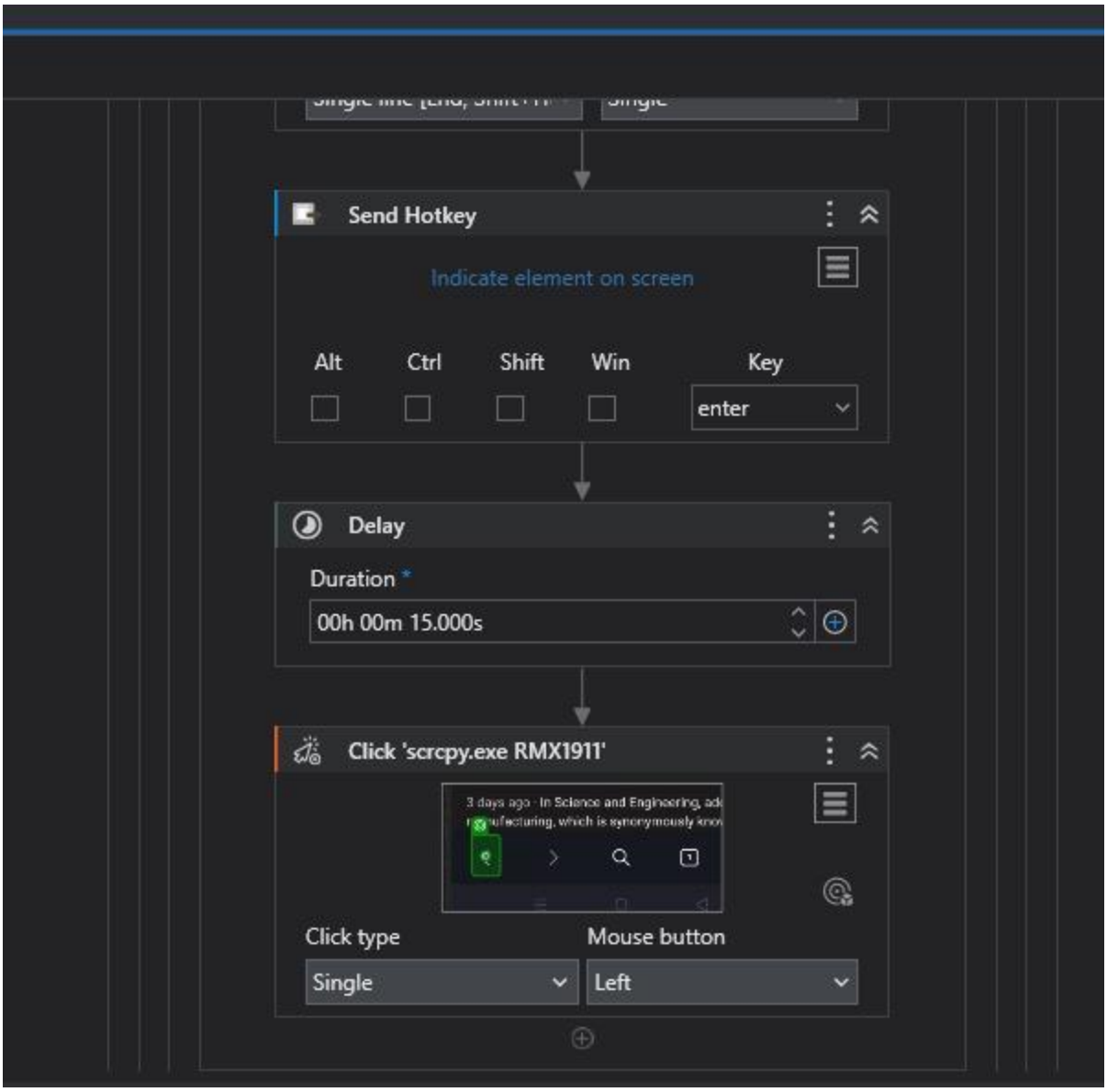
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Introduction

The integration of scrcpy and UiPath for automating Microsoft Rewards searches marks an innovative approach to task automation by bridging mobile device operations with desktop-based RPA workflows. Scrcpy, an open-source tool, allows for seamless mirroring and control of Android devices on a computer, enabling direct interaction with mobile applications. On the other hand, UiPath, a leading Robotic Process Automation (RPA) platform, orchestrates the automation by managing tasks such as executing search queries, processing results, and generating reports. This combination offers a powerful, efficient, and scalable solution for automating repetitive tasks, reducing manual effort, and improving productivity. Through this integration, users can effortlessly automate actions on their phones, streamlining processes like earning Microsoft Rewards points without the need for continuous manual involvement.

1.1 General

The project focuses on automating Microsoft Rewards searches using a combination of scrcpy and UiPath, demonstrating the power of Robotic Process Automation (RPA) integrated with mobile device control. Scrcpy, an open-source tool, is utilized to mirror and control the Android device from the computer, allowing for the automation of mobile tasks such as performing daily searches required for earning Microsoft Rewards points. UiPath, a leading RPA platform, orchestrates the automation by interacting with the mirrored device, executing search queries, and handling the data retrieval and reporting process.

The project aims to reduce manual effort, increase efficiency, and provide a more scalable solution for completing repetitive tasks. By automating these processes, the system ensures consistency, accuracy, and faster completion times, ultimately enhancing the overall user experience. This integration showcases the potential of RPA in mobile task automation, offering a practical solution for tasks that would otherwise be time-consuming and prone to human error.

Through this project, the combination of scrcpy and UiPath demonstrates the versatility of RPA tools, not only in desktop automation but also in mobile automation, opening new possibilities for cross-platform task management. The system is designed to be flexible and easily adaptable to future enhancements, such as multi-device control, handling different types of rewards, and integrating with other applications to expand its scope beyond Microsoft Rewards.

1.2 Objectives

The primary objective of this project is to automate the process of performing Microsoft Rewards searches using UiPath and scrcpy. By integrating these technologies, the system aims to eliminate the need for manual input in completing the daily search tasks required to accumulate rewards points. The automation will not only save time but also ensure consistency, accuracy, and efficiency in performing repetitive tasks, ultimately enhancing productivity and user experience while reducing the chances of human error. This solution demonstrates the potential of RPA in streamlining mobile tasks and creating a more scalable approach to rewards management.:

1. To automate the process of performing Microsoft Rewards searches

The objective to automate the process of performing Microsoft Rewards searches focuses on eliminating the need for manual intervention in completing the daily tasks required for earning rewards points. Currently, users manually search for specific topics or perform actions on their mobile devices to accumulate points. This project seeks to automate that process using UiPath and scrcpy. By integrating these technologies, the system will automatically conduct the required searches on the user's mobile device, which is mirrored onto the computer via scrcpy.

2. To streamline repetitive tasks more please

The objective to **streamline repetitive tasks** aims to automate the daily and monotonous actions involved in Microsoft Rewards searches. These tasks, such as opening the app, entering search queries, and clicking through results, are typically time-consuming and require consistent effort. By leveraging UiPath for workflow automation and scrcpy for mirroring the mobile device, the system automates these

steps to run without manual intervention. This automation not only frees up time for users to focus on more critical activities but also ensures that the tasks are performed with high accuracy and without fatigue, minimizing the risk of errors or omissions. The result is an efficient, reliable, and time-saving solution that simplifies a once-daily chore into a seamless process.

3. To enhance efficiency and accuracy

The objective to enhance efficiency and accuracy focuses on optimizing the Microsoft Rewards search process to ensure faster completion times and more reliable results. By automating the task, the system eliminates the delays caused by human involvement, such as errors in typing search queries, missing steps, or inconsistent actions. With UiPath orchestrating the workflow and scrcpy controlling the mobile device, the automation can execute tasks continuously, with precision, and at a much higher speed than manual efforts.

4. To develop a scalable solution

The objective to develop a scalable solution focuses on creating a system that can efficiently handle increasing workloads without compromising performance. As the need for Microsoft Rewards searches grows, either through multiple devices or an expanding number of search queries, the automation should be able to manage these changes seamlessly. By leveraging UiPath's flexible workflow capabilities and scrcpy's ability to mirror multiple devices, the system can scale to perform searches on more than one device simultaneously or increase the frequency of searches as needed.

5. To demonstrate the potential of RPA in mobile task automation

The objective to demonstrate the potential of RPA in mobile task automation highlights how Robotic Process Automation (RPA), typically used for desktop and web applications, can be extended to control mobile devices. By integrating UiPath with scrcpy, this project showcases how RPA can automate tasks on Android devices, such as performing Microsoft Rewards searches, which traditionally require manual input. This approach illustrates the flexibility of RPA in handling not only routine tasks on computers but also tasks on mobile platforms, enabling seamless interaction with mobile applications.

1.3 Existing System

The existing system for Microsoft Rewards involves manual searches where users need to actively perform daily searches on their mobile devices to accumulate points. This process requires constant attention and repetition, leading to inefficiency, time consumption, and the potential for human error. Current systems also lack scalability, as they rely on individual users performing tasks one at a time. The lack of automation in the existing system results in slower completion times and inconsistent execution of repetitive tasks. As a result, users often face challenges in efficiently managing their rewards collection, especially when dealing with large volumes of search queries or limited time.:

1. Manual Intervention

Manual Intervention in the existing system refers to the requirement for users to actively engage in performing each step of the Microsoft Rewards search process. This includes tasks such as:

- **Opening the Microsoft Rewards app**: Users must manually launch the app each day to initiate the search process.
- **Entering Search Queries**: Each search topic or query must be typed out by the user, often involving repetitive actions such as entering the same search term or topic multiple times.
- **Navigating Results**: After performing searches, users need to manually browse through results, ensuring they complete all the necessary steps for each search to count towards their rewards.
- **Tracking Progress**: Users must track their progress and ensure they meet the daily or weekly search requirements, which can be tedious and prone to oversight.

2. Time-Consuming

This time-consuming nature of the process leads to a reduction in overall productivity, especially for users who are trying to juggle multiple tasks or optimize the rewards process. The need to manually perform these steps every day reduces the user's ability to focus on more important or engaging activities, making it a significant drawback of the existing system.

3. Prone to Human Error

These errors can reduce the effectiveness of the rewards system, cause frustration for the users, and ultimately lead to an inaccurate rewards accumulation process. The existing system's reliance on human accuracy and consistency leaves ample room for mistakes, which could be avoided with automation.

4. Limited Scalability

As organizations grow and their transaction volumes increase, manual reconciliation methods become increasingly impractical. Scaling manual processes requires hiring additional personnel, which increases costs and introduces inconsistencies. The inability to efficiently manage large transaction volumes restricts organizational growth and operational efficiency.

5. Lack of Scalability

The lack of scalability in the existing system makes it unsuitable for handling increased tasks, larger volumes of searches, or managing multiple accounts. It becomes increasingly inefficient and error-prone as demands grow, highlighting the need for an automated, scalable solution.

1.4 Proposed System

The proposed system aims to overcome the limitations of the existing manual approach by integrating UiPath and scrcpy to automate the process of performing Microsoft Rewards searches. This system leverages Robotic Process Automation (RPA) to streamline repetitive tasks and eliminate human error while offering scalability, efficiency, and consistency.:

1. **Full automation**:
    - Automatic App Launch and Interaction: The system automatically opens the Microsoft Rewards app on the mobile device, mirrors it to the desktop using scrcpy, and interacts with the app through pre-configured UiPath workflows. The user does not need to manually search for topics, type queries, or navigate the app.

2. **Efficincy and speed**:
   Overall, the automation of Microsoft Rewards searches enhances both efficiency by optimizing the process and speed by reducing the time spent on each task, enabling users to complete more searches in less time, with greater accuracy.

3. **Scalability**:
   Handling Multiple Devices Simultaneously: With scrcpy, the system can mirror multiple mobile devices onto the desktop, allowing the user to perform searches on several devices at once. UiPath's automation workflows can manage these devices in parallel, ensuring that the user can scale up the number of searches without additional manual effort. For instance, if the user wants to earn rewards from multiple accounts or devices, the system can manage this seamlessly.

4. **Reduced Human Error**:
   - Consistent Execution: The automation process ensures that each search is executed exactly the same way every time, without variation. Unlike manual tasks, where a user might forget or skip steps, the system follows a predefined set of instructions, ensuring that nothing is overlooked.
5. **Future Enhancements:**
   Future enhancements aim to increase the system's flexibility, expand its capabilities to other platforms and languages, optimize search efficiency with AI, and offer a more intuitive user experience with advanced reporting and customization features. These upgrades would make the system more powerful, adaptable, and applicable in a broader range of scenarios, providing even greater value to users.

Benefits of the Proposed System:

The proposed system offers numerous benefits by automating the Microsoft Rewards search process, enhancing both efficiency and productivity. By leveraging UiPath and scrcpy, the system eliminates manual effort, reduces errors, and significantly speeds up task completion. The automation ensures consistent performance and scalability, allowing users to handle multiple devices and high volumes of tasks with ease:

1. Time Savings

- Time Savings is one of the most significant benefits of the proposed system, as it eliminates the need for manual intervention in performing Microsoft Rewards searches. By automating repetitive tasks, the system reduces the amount of time users need to spend each day on these searches, allowing them to focus on more important or productive activities

2. Increased Efficiency

- Parallel Task Execution: Unlike manual methods where each search must be performed one at a time, the system can handle multiple searches simultaneously across different devices or accounts. This parallel processing dramatically increases the throughput, allowing users to perform a higher volume of searches in less time.

3. Consistency

- Standardized Task Execution: The system follows predefined workflows, meaning every search is executed in exactly the same manner. From opening the app to entering search queries and navigating through results, the automation process is uniform and predictable. This eliminates the inconsistencies that can arise from human factors like distractions, fatigue, or errors.

4. Error Reduction

- Elimination of Human Oversight: Manual tasks are often subject to human error, such as forgetting to complete a search, making typographical errors when entering search queries, or skipping necessary steps in the process. The automation system executes each action precisely as programmed, ensuring that all required steps are followed without omission

5. Increased Rewards Potential

- Maximized Search Completion: The automation ensures that all daily and weekly searches are completed consistently without missing any. Users don’t have to worry about forgetting a search or skipping steps, ensuring they meet the required quota for maximum reward points every time. Flexible to Organizational Changes.

2. Literature Review

Robotic Process Automation has revolutionized business operations by automating repetitive, rule-based tasks. According to Avasarala et al. (2019), RPA tools like UiPath, Automation Anywhere, and Blue Prism have been widely adopted in industries for their ability to enhance efficiency, reduce operational costs, and improve scalability. RPA eliminates manual intervention in processes such as data entry, transaction processing, and workflow management, freeing up human workers to focus on more complex tasks. This automation significantly improves task consistency, reduces errors, and increases throughput, which is crucial for handling large volumes of data or tasks, as discussed by Aguirre & Rodriguez (2017).

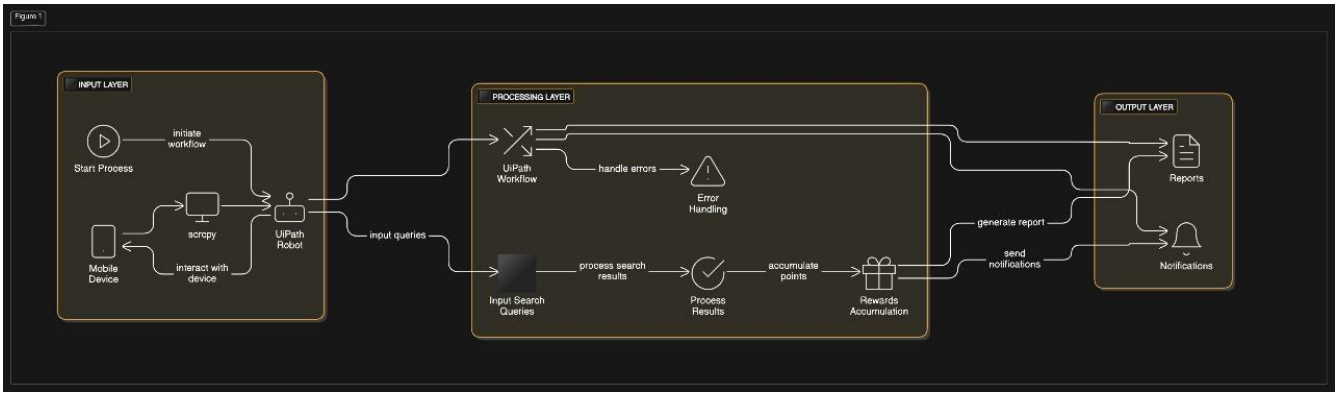
While traditional RPA tools have focused primarily on desktop applications, their potential for mobile task automation has been explored more recently. RPA's ability to automate tasks like invoice processing, customer interactions, and routine data entry has been proven, but automating mobile app interactions required additional integration with mobile management technologies (Chung & Moorthy, 2020).

3. SYSTEM DESIGNS

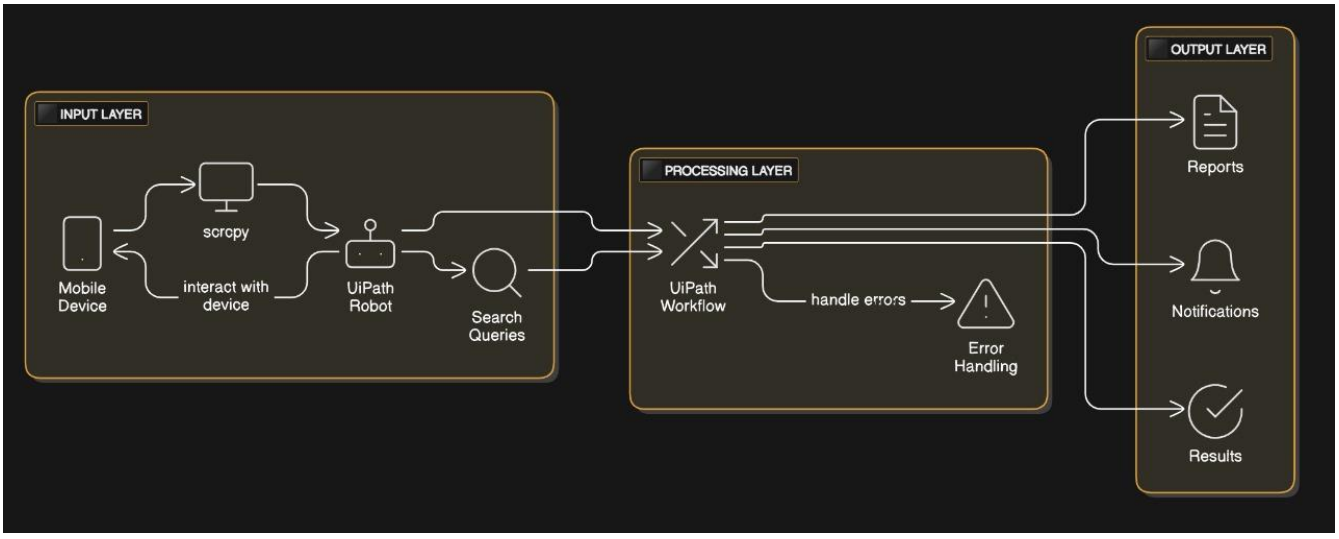
3.1 General

The system design for the proposed Microsoft Rewards automation solution integrates UiPath for workflow orchestration and scrcpy for mobile device mirroring. The system is structured into three main layers: the Input Layer, which uses UiPath to retrieve emails or data and mirrors the mobile device via scrcpy; the Processing Layer, where search queries are executed on the mobile app and managed by UiPath workflows; and the Output Layer, which sends results or rewards back to the user, ensuring seamless interaction across platforms. The design is modular, allowing easy customization and scalability, and ensures efficient handling of tasks like error management, task scheduling, and automated retries to guarantee smooth execution of the entire process.

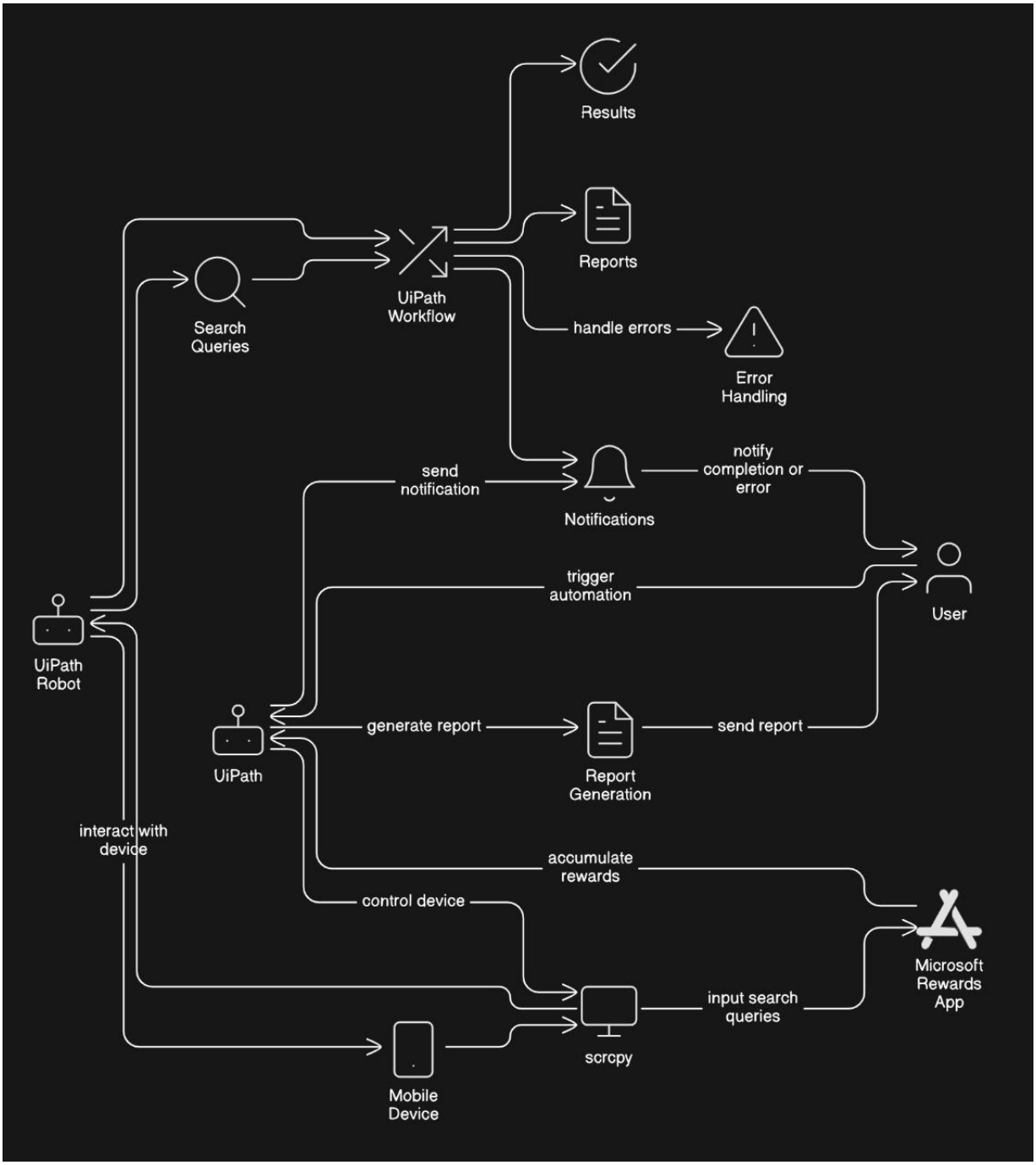
3.2 System Flow Diagram



3.2 ARCHITECTURE DIAGRAM



3.3SEQUENCE DIAGRAM



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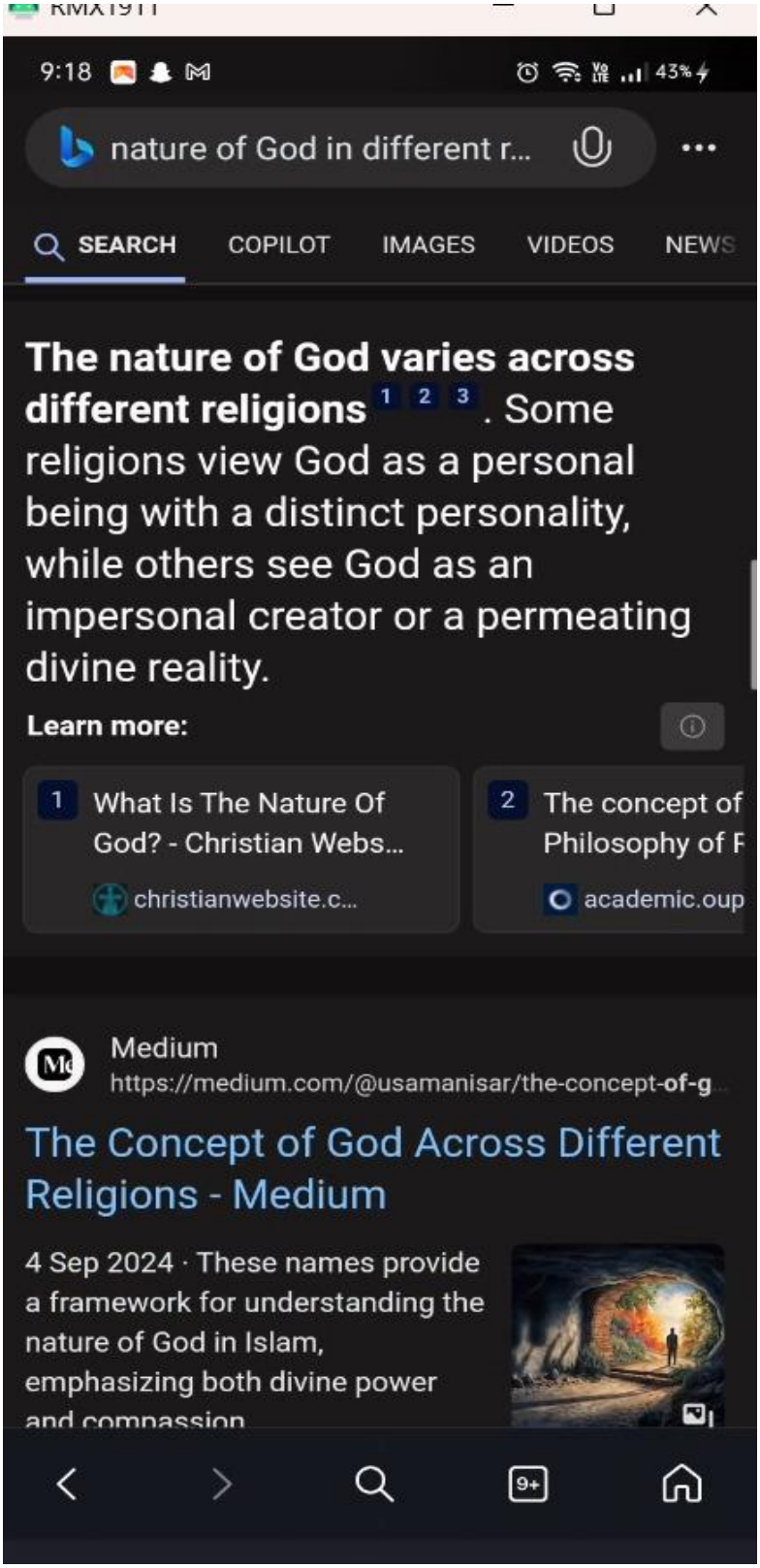
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The nature of God varies across different religions 1 2 3. Some religions view God as a personal being with a distinct personality, while others see God as an impersonal creator or a permeating divine reality.
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The Concept of God Across Different Religions - Medium
4 Sep 2024 · These names provide a framework for understanding the nature of God in Islam, emphasizing both divine power and compassion
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4. Conclusions

In conclusion, the proposed RPA-based system for automating Microsoft Rewards searches using UiPath and scrcpy represents a significant advancement in task automation, providing users with a more efficient, consistent, and error-free way to accumulate rewards points. By integrating **UiPath, a powerful RPA platform, with **scrcpy**, an Android device mirroring tool, the system automates the entire search process from initiation to rewards accumulation, eliminating the need for manual input and reducing the time and effort required to complete repetitive tasks. The automation not only speeds up the process but also ensures accuracy, as it follows predefined workflows that prevent human errors such as missed searches, incorrect queries, or skipped steps. Additionally, the system's scalability allows it to handle multiple devices and accounts simultaneously, making it adaptable to users with high-volume search needs or those managing several accounts.**

The error reduction capabilities of the system further enhance its reliability, with built-in error handling that ensures smooth execution even in the case of interruptions or failures. The result is a system that operates efficiently without the risk of inconsistent task execution, offering a seamless experience for users aiming to maximize their rewards points. Furthermore, the ability to generate reports and send notifications makes it easy for users to track their progress and stay informed about the system's performance. The flexibility of the system also allows for future enhancements, such as multi-language support, integration with additional rewards platforms, and more sophisticated AI-powered features, ensuring that the solution can evolve with changing user needs.

Ultimately, the proposed system demonstrates the transformative potential of RPA in automating mobile tasks, offering both personal and business users a scalable, cost-effective solution for handling repetitive actions. It shows how the integration of RPA tools with mobile device management can streamline processes, save time, and improve productivity, while also reducing the errors and inefficiencies associated with manual operations. This project paves the way for broader applications of RPA in mobile task automation, with potential for use in a wide range of industries beyond just rewards programs, such as customer service, e-commerce, and mobile marketing.

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