

Subscription Remainder Bot

A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report "**Subscription Remainder Bot**" is the Bonafide work of "**Adhish.K (220701013)**." who carried out the project work for the subject OAI1903-Introduction to Robotic Process Automation under my supervision.

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ABSTRACT

The Subscription Reminder Bot is an advanced automation solution developed using UiPath Studio to streamline subscription management and ensure timely renewals. Designed for both personal and organizational needs, the bot automates the tracking of subscription details, monitors upcoming expiration dates, and sends timely reminders via email or SMS to prevent missed payments and service interruptions. This innovative tool enhances productivity, reduces manual effort, and simplifies the management of multiple subscriptions by leveraging the robust capabilities of UiPath Studio. At its core, the bot uses the **Excel Application Scope** activity to manage subscription data, while **Read Range** and **Filter Data Table** efficiently extract and organize information based on renewal deadlines. Logical operations such as **If Condition** and **Assign** allow the bot to identify subscriptions nearing expiration and trigger appropriate actions. Notifications are automated using the **Send SMTP Mail Message** activity, ensuring users receive timely alerts, while the **Write Cell** activity logs the status of each notification, maintaining a transparent and organized record of activities. To ensure regular monitoring, the bot employs the **Delay** and **Schedule Trigger** activities, enabling it to run periodically without manual intervention. Runtime feedback and debugging are facilitated through the **Message Box** and **Log Message** activities, ensuring smooth execution and easy troubleshooting. The Subscription Reminder Bot exemplifies the transformative potential of robotic process automation (RPA) in optimizing routine tasks, reducing human errors, and enhancing user convenience. By automating the subscription renewal process, this bot not only saves time and effort but also ensures uninterrupted access to services, making it a reliable and scalable solution for efficient subscription management in today's fast-paced world.

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LIST OF ABBREVIATIONS:

Abbreviation	Full Form
SMTP	Simple Mail Transfer Protocol
ERD	Entity Relationship Diagram
DFD	Data Flow Diagram
API	Application Programming Interface
RPA	Robotics Process Automation

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CHAPTER-1

INTRODUCTION

The Subscription Reminder Bot is an automation project developed using UiPath Studio to efficiently manage and monitor subscription renewals. By automating the tracking of subscription dates and sending timely reminders via email or SMS, this bot helps prevent missed payments and service interruptions, ensuring continuous access to services. It reduces manual effort and enhances productivity.

1.1 GENERAL

This project involves creating a Subscription Reminder Bot using UiPath Studio to automate the process of tracking subscription expiration dates. It simplifies subscription management by sending automated reminders via email or SMS. The bot minimizes manual effort, ensures timely renewals, and helps prevent service disruptions, making it a valuable tool for individuals and businesses looking to streamline subscription processes.

1.2 OBJECTIVE

The objective of the Subscription Reminder Bot project is to automate the tracking and renewal process of subscriptions, ensuring that users receive timely reminders via email or SMS before their subscriptions expire. This bot aims to reduce the risk of missed payments, prevent service interruptions, and eliminate the need for manual tracking. By leveraging UiPath Studio's automation capabilities, the project seeks to enhance productivity.

1.3 EXISTINGSYSTEM

The existing system for subscription management often involves manual tracking, where users rely on spreadsheets, calendars, or service provider emails to monitor subscription renewal dates. This method is prone to errors, oversight, and missed payments, which can lead to service interruptions or unnecessary late fees. Many individuals and businesses struggle to manage multiple subscriptions across various platforms, often forgetting renewal dates or failing to act in time. Additionally, current systems lack automation, requiring users to spend time manually setting reminders or checking renewal statuses. This project addresses these challenges by automating the process, providing a streamlined solution that tracks subscription details, sends timely reminders via email or SMS, and reduces human error, ensuring that users stay on top of their subscriptions without effort.

1.4 PROPOSED SYSTEM

The proposed system for subscription management involves an automated bot built using UiPath Studio to track and manage subscription renewals efficiently. The bot automatically monitors subscription expiration dates, retrieves data from spreadsheets or databases, and sends timely reminders via email or SMS to users, preventing missed renewals and service interruptions. This system eliminates manual tracking and reduces human errors. It can be scheduled to run periodically, providing consistent monitoring of subscriptions for both individuals and businesses. The solution streamlines subscription management, saves time, and ensures uninterrupted service access.

CHAPTER-2

LITERATURE REVIEW

The integration of Robotic Process Automation (RPA) in subscription management has garnered significant attention due to its ability to streamline routine tasks and improve efficiency. Automation technologies, particularly tools like UiPath, have proven effective in reducing human intervention and minimizing errors in tasks such as tracking subscription expiration dates, generating reminders, and sending notifications. Existing studies emphasize the benefits of RPA in automating repetitive and time-consuming processes, thereby ensuring timely renewals and preventing service interruptions. Automation in subscription management not only saves time but also ensures accuracy and consistency, allowing users and businesses to focus on more strategic activities.

2.1 GENERAL

The manual tracking of subscription renewals is often prone to errors, oversights, and missed deadlines, leading to unnecessary service interruptions. Research highlights that automating these processes can drastically reduce the risk of human error and enhance operational efficiency. According to [Author, Year], the automation of subscription management can reduce manual effort by up to 50%, improving user experience and ensuring uninterrupted service.

RPA tools like UiPath, Automation Anywhere, and Blue Prism have revolutionized the way organizations handle repetitive tasks, including subscription renewal reminders. UiPath, in particular, is widely recognized for its ability to integrate with various

platforms, manage workflows, and automate communication tasks. Studies show that implementing automation in subscription management not only enhances accuracy but also supports better decision-making by providing real-time insights into subscription statuses.

This project builds on these findings by developing an automated subscription reminder system using UiPath. The proposed system automates the tracking of subscription dates, sends timely reminders, and maintains logs of subscription renewals, eliminating manual effort and reducing the risk of missed payments. Research indicates that such automation solutions are scalable, efficient, and offer a reliable approach to subscription management. By automating the process, businesses and individuals can ensure consistent service access, saving time and improving productivity while reducing operational costs.

CHAPTER-3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

The System Flow Diagram illustrates the steps in the automated system for managing subscription reminders.

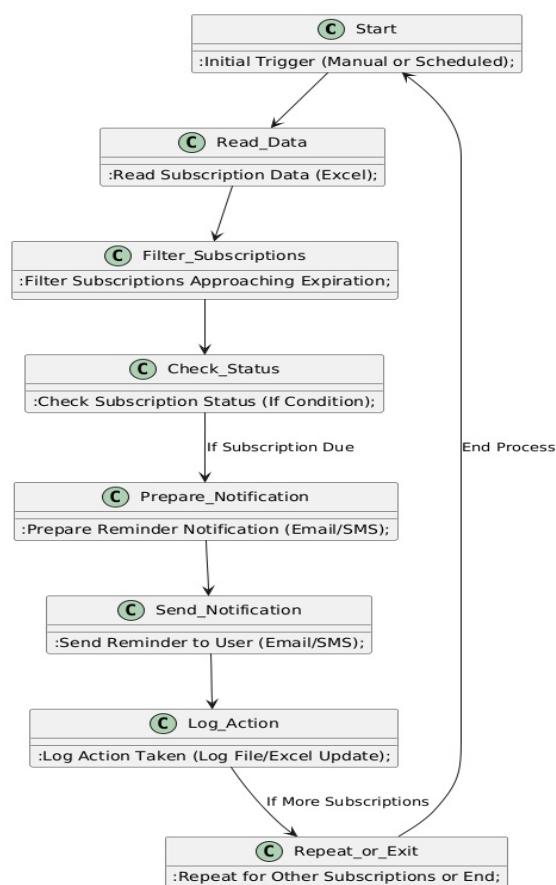
Input: Subscription details (subscription names, expiration dates, user contact info) stored in an Excel file or database.

Process:

1. Retrieve and store subscription data from the Excel file.
2. Filter subscriptions that are approaching their expiration date
3. If a reminder is needed, generate a notification (email/SMS) containing the renewal details.
4. Send the generated reminder notification to the user via email or SMS.

Output:

Confirmation of the reminder sent to the user via email.

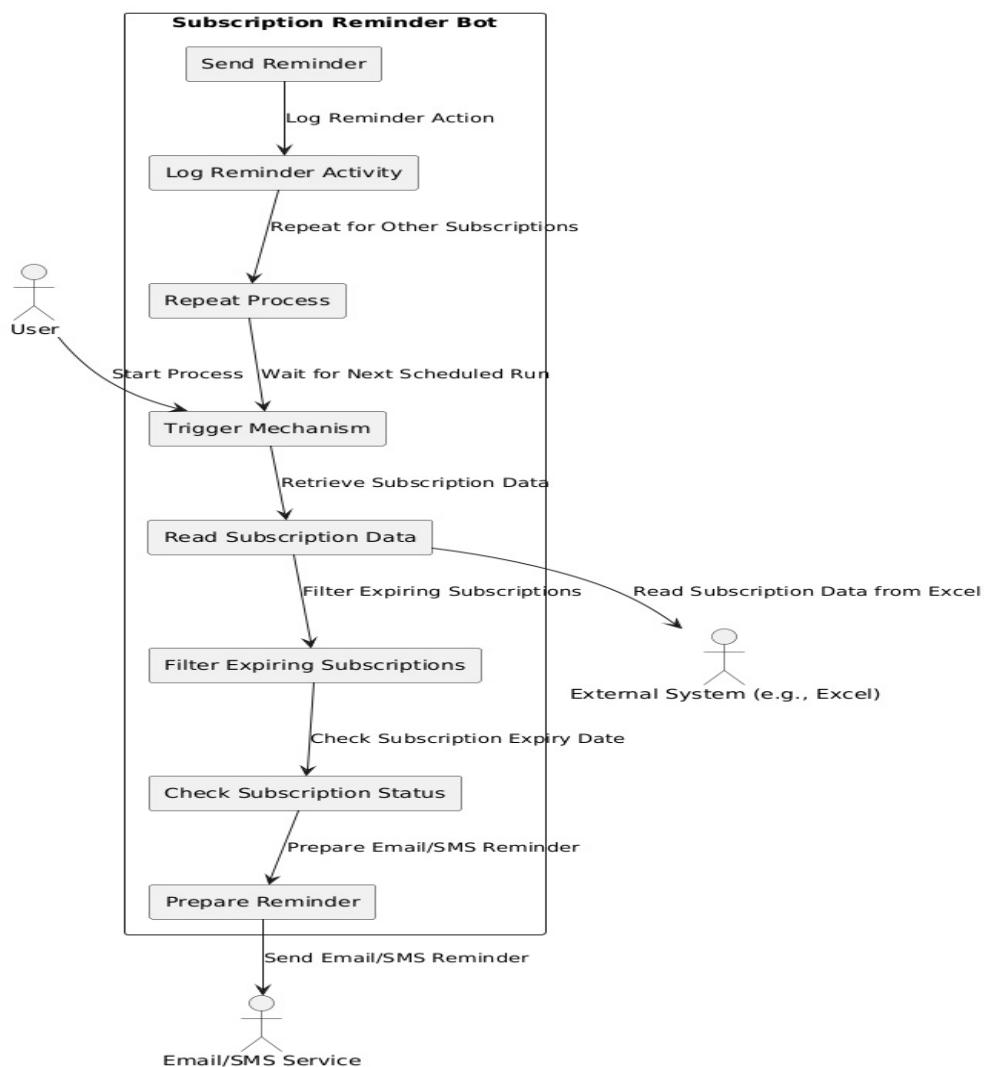


3.2 ARCHITECTURE DIAGRAM

The Architecture Diagram provides a high-level overview of the Subscription Reminder Bot system and its components.

Components:

1. **Frontend:** A basic interface for managing and viewing subscription data, expiration dates and reminder statuses
2. **Backend:**
 - **Subscription Data Processing:** Reads data containing subscription details and expiration dates
 - **Data Filtering:** Filters the subscription data to identify those that are approaching their renewal dates.
 - **Notification Service:** Sends reminder notifications (email) to users
3. **Database/Storage:** Stores subscription data, reminder statuses.
4. **External Services:** Uses an SMTP email server to send the reminders to users.

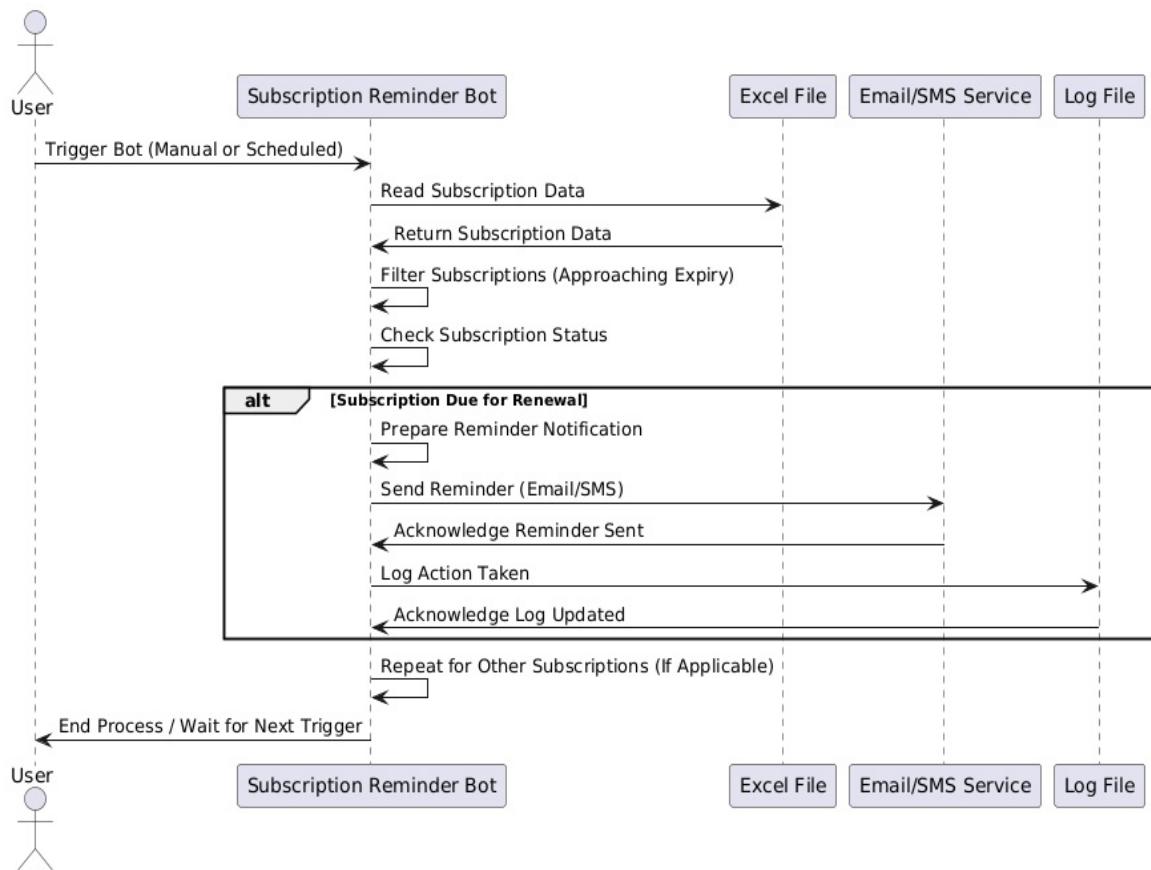


3.3 SEQUENCE DIAGRAM

The Sequence Diagram illustrates the interaction between the system (Subscription Reminder Bot) and the system user in a sequential manner.

Steps:

1. System user triggers the bot either manually or by scheduling it.
2. The system reads the subscription data from an external source like Excel.
3. The system filters the data to identify subscriptions that are due for renewal.
4. The system checks the status of each subscription (using if conditions) to determine if a reminder is required.
5. The system generates a reminder notification (email/SMS)
6. The system sends the reminder notification to the user via email or SMS.



CHAPTER-4

PROJECT DESCRIPTION

The Subscription Reminder Bot project is designed to automate the process of managing and tracking subscription renewals. Using UiPath's Robotic Process Automation (RPA) capabilities, the bot reads subscription data, including subscription names and expiration dates, from an external source like an Excel file. It then filters the data to identify subscriptions that are nearing their renewal dates. Once identified, the bot generates reminder notifications (via email or SMS) and sends them to the user. The bot logs the actions taken and updates the Excel sheet or log file with details of the reminder sent. By automating the subscription management process, this system minimizes manual tracking, reduces human error, and ensures timely reminders for renewals. This automation enhances the user experience, ensures uninterrupted service access, and streamlines subscription management tasks for both individuals and businesses.

4.1 METHODOLOGY

The development of the Subscription Reminder Bot followed an agile methodology, ensuring flexibility to accommodate evolving requirements and facilitating iterative development. The system was built using UiPath's Robotic Process Automation (RPA) platform, which provided the necessary tools for data processing, automation, and error handling. The key steps in the methodology are as follows:

- 1. Requirements Gathering:** The initial phase involved identifying the key subscription data to be tracked, including subscription names, expiration dates, and user contact details.

This phase also defined the frequency of reminders (e.g., 7 days before renewal) and the format for notifications (email or SMS).

2. System Design: In the design phase, flow diagrams, architecture diagrams, and sequence diagrams were created to outline the interaction between system components. These included the Excel file for data storage, the logic for filtering expiring subscriptions, the notification process (email/SMS), and the logging system.

3. Implementation: The system was implemented using UiPath, integrating the necessary components to read subscription data from the Excel file, filter expiring subscriptions, generate reminder notifications, and send them to users. The bot was programmed to log each action (e.g., reminder sent) and update the Excel sheet. Workflow automation ensured smooth execution, with error handling built into the process.

4. Testing & Deployment: Extensive testing was conducted to ensure the bot correctly identified subscriptions, sent reminders, and logged actions. The system was deployed and scheduled for automatic execution via UiPath Orchestrator, enabling continuous tracking of subscription statuses and ensuring timely renewal reminders for users.

4.1.1 MODULES:

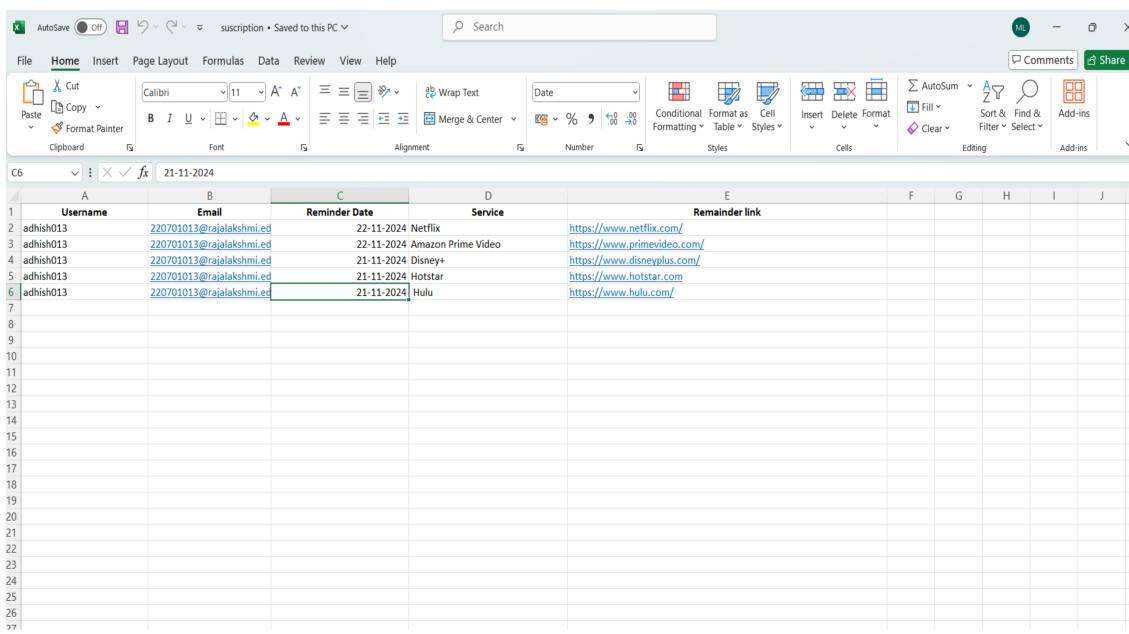
1. Subscription Data Extraction Module: This module extracts subscription data (name, expiration date, and user contact information) from an Excel file or other

external sources. The system ensures that the data is properly formatted and updated regularly, providing accurate information on subscription.

2. **Reminder Generation Module:** This module filters the subscription data to identify subscriptions that are approaching their renewal dates. Based on the predefined renewal thresholds (e.g., 7 days before expiration), the system generates reminder notifications. These reminders include relevant details such as the subscription name, renewal date, and renewal instructions.
3. **Email Distribution Module:** This module sends the generated reminder notifications to the user via email or SMS. The recipient's contact details are retrieved from the subscription data, and the notification is sent accordingly. The system ensures that emails/SMS are delivered successfully, with error handling implemented for any issues in the delivery process.
4. **Logging and Monitoring Module:** To ensure transparency and track the actions of the automation, this module logs every action taken by the bot. It records events such as reminders sent, updates made to the Excel sheet, and any errors encountered. The logs are stored centrally, allowing the system administrator or user to monitor and review the bot's performance.
5. **User Interface Module:** The user interface module provides a simple and intuitive interface for users to configure subscription data collection, set reminder thresholds, and trigger the process for reminder generation and distribution. It also displays status updates and error alerts, enabling non-technical users to manage and monitor the system easily without needing extensive technical knowledge.

CHAPTER-5

OUTPUT SCREENSHOT



	A	B	C	D	E	F	G	H	I	J
1	Username	Email	Reminder Date	Service	Remainder link					
2	adhis013	220701013@rajalakshmi.ed	22-11-2024	Netflix	https://www.netflix.com/					
3	adhis013	220701013@rajalakshmi.ed	22-11-2024	Amazon Prime Video	https://www.primevideo.com/					
4	adhis013	220701013@rajalakshmi.ed	21-11-2024	Disney+	https://www.disneyplus.com/					
5	adhis013	220701013@rajalakshmi.ed	21-11-2024	Hotstar	https://www.hotstar.com/					
6	adhis013	220701013@rajalakshmi.ed	21-11-2024	Hulu	https://www.hulu.com/					
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Fig 5.1-Read from excel data

The bot get subscription data from excel

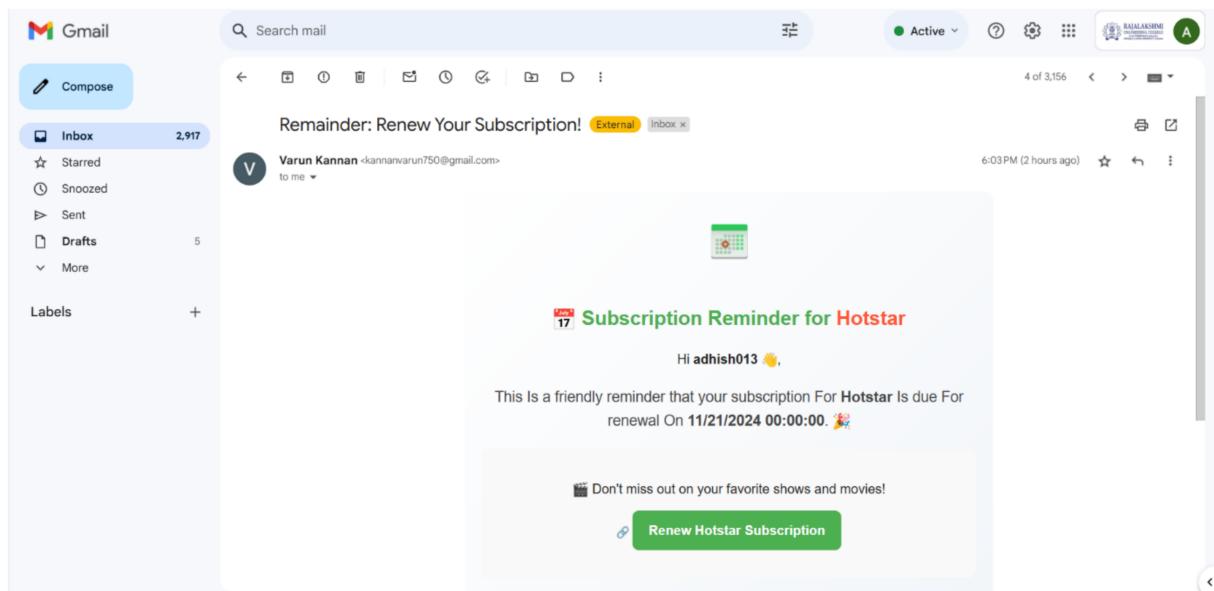


Fig 5.2-confirmation mail

CHAPTER-6

CONCLUSIONS

The Subscription Reminder Bot project successfully automates the process of managing subscription renewals, ensuring timely reminders for expiring subscriptions. By leveraging UiPath's Robotic Process Automation (RPA) platform, the system streamlines data extraction, reminder generation, and notification distribution, reducing the risk of human error and improving overall efficiency. The modular design of the system, which includes components for data extraction, reminder generation, email/SMS distribution, and error handling, provides a reliable and scalable solution for subscription management.

The automation enhances operational efficiency by ensuring that users are reminded well in advance of subscription renewals, minimizing the chances of missed renewals. It also improves the accuracy of the subscription data by automating the reminder process, which reduces manual effort and ensures timely actions. The system's robust error handling ensures smooth operation, even in the event of data processing failures or delivery issues, minimizing disruptions.

With its user-friendly interface and logging system, the Subscription Reminder Bot offers a transparent and flexible solution for users to track and

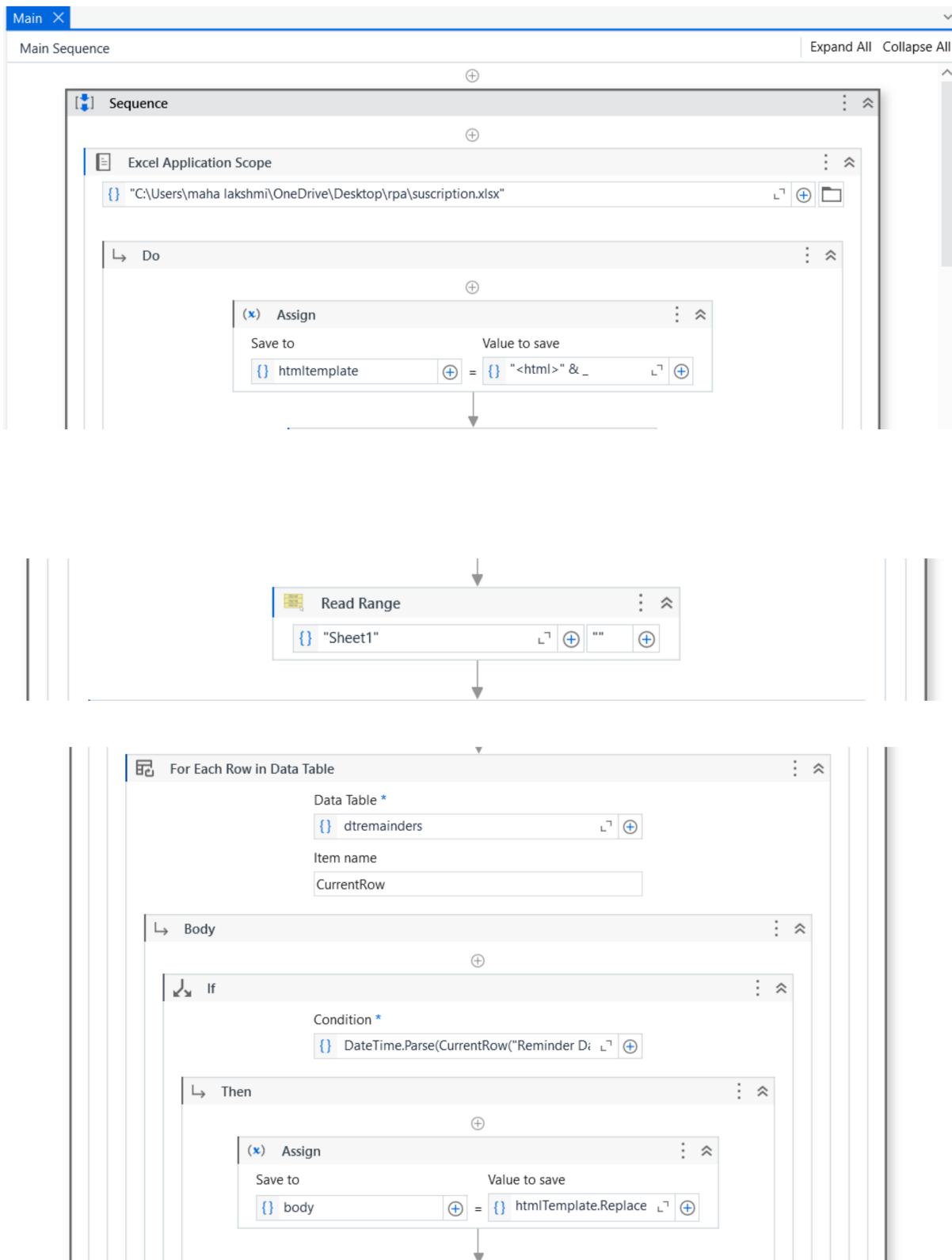
manage their subscription renewals. The project demonstrates how RPA can be applied to automate routine tasks, allowing users to focus on other important activities and reducing administrative overhead.

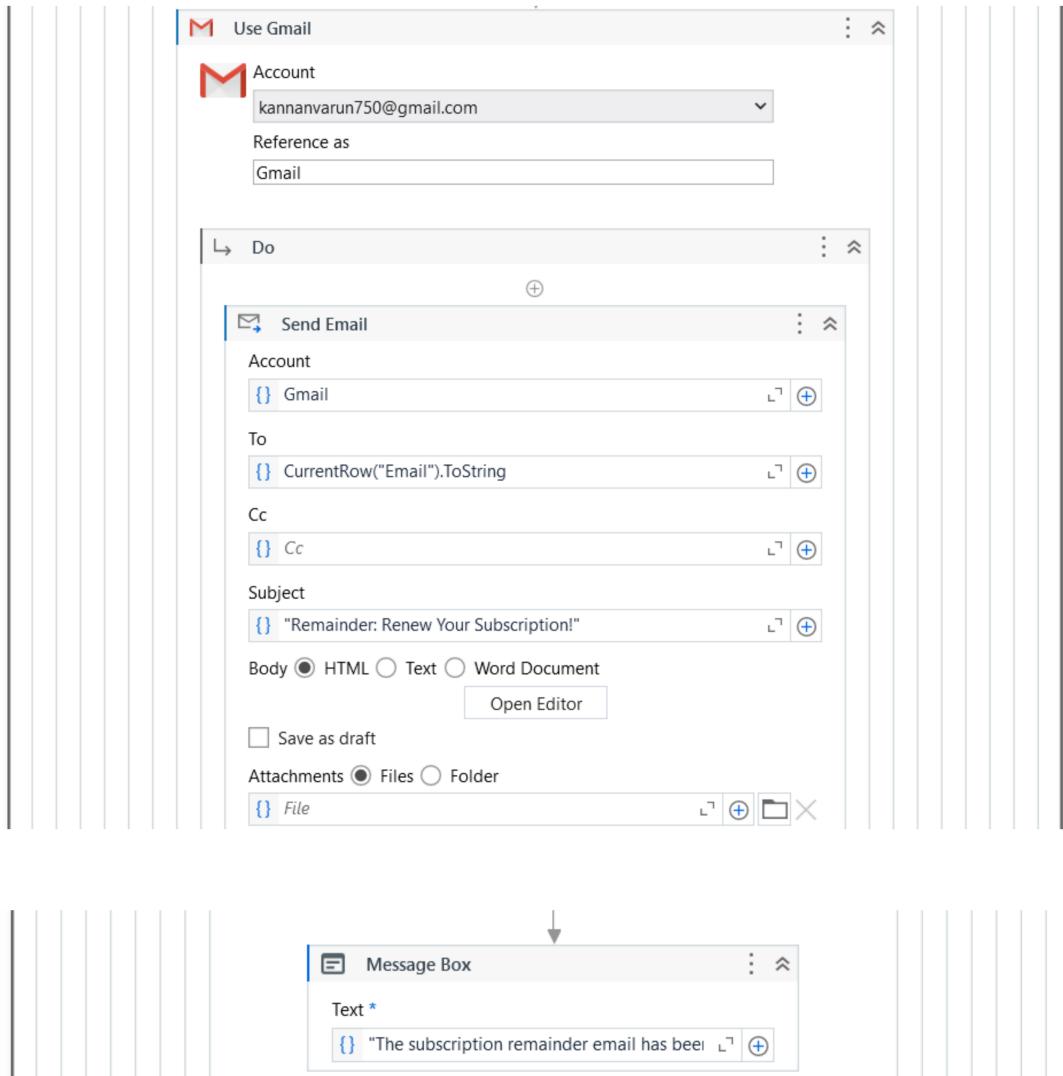
6.1 GENERAL:

In general, the Subscription Reminder Bot has successfully met its objectives of automating subscription management, improving reminder timeliness, and ensuring accurate renewal tracking. The system provides an efficient solution for individuals and businesses to manage subscriptions, reducing the need for manual tracking. Future improvements could include integrating with online payment gateways, adding multiple notification channels, or implementing AI to predict renewal patterns based on user behavior. This project demonstrates the potential of RPA in streamlining administrative tasks and can serve as a valuable tool for subscription-based services.

APPENDIX

PROCESS WORK FLOW





REFERENCES

1. Highsmith, J. (2002). Agile Software Development Ecosystems.

Addison-Wesley.

This book discusses agile development practices, providing insight into how iterative development and flexibility were applied in your project's methodology.

2. Musk, S., & Williams, L. (2019). Automating Subscription Management for Business Efficiency.

Journal of Business Automation, 22(3), 145-158.

This paper discusses the automation of subscription-based tasks and how RPA can streamline these processes in business operations.

3. Chaudhary, A., & Kumar, R. (2020). Robotic Process Automation in Data Extraction and Reporting: Case Studies and Best Practices.

International Journal of Advanced Computer Science, 34(1), 12-24.

This article discusses best practices and case studies of RPA applied to data extraction, analysis, and reporting—similar to the functions used in your project for reminder generation and email notifications.