LATEST NEWS UPDATE BOT

A PROJECT REPORT

Submitted by

RAGHUL S (220701210)

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RAJALAKSHMI NAGAR

THANDALAM

CHENNAI – 602 105

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RAJALAKSHMI ENGINEERING COLLEGE

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BONAFIDE CERTIFICATE

Certified that this project report **"Latest news update bot"** is the bonafide work of **"RAGHUL S (220701210)"** who carried out the project work for the subject OAI1903 - Introduction to Robotic Process Automation under my supervision.

SIGNATURE

DR.N.DURAI MURUGAN,M.E.,Ph.D.,
SUPERVISOR,
Assistant Professor (SG),
Department of
Computer Science and Engineering,
RajalakshmiEngineeringCollege,
Rajalakshmi Nagar,
Thandalam,
Chennai – 602105.

SubmittedtoProjectandVivaVoceExaminationforthesubjectOAI1903-
Introduction to Robotic Process Automation held on_____

Internal Examiner **External Examiner**

ABSTRACT

The "Latest News Update Bot through Mail" project is an innovative Robotic Process Automation solution developed using UiPath, designed to automate the dissemination of real-time news updates via email. This project aims to streamline the process of gathering, organizing, and sharing news, catering to individuals and organizations that require timely and relevant updates without manual intervention.

The bot automates the retrieval of the latest news from predefined sources, such as websites or APIs, filters the information based on user-defined keywords or categories, and composes personalized email updates. These updates are then sent to designated recipients at scheduled intervals or upon request. The bot ensures accuracy by incorporating error handling mechanisms and duplication checks, providing recipients with clean and relevant content.

This solution addresses the challenges of manual news curation and distribution, saving time and ensuring reliability. It is particularly useful for professionals, businesses, and institutions that need consistent and real-time access to critical information. By leveraging UiPath’s capabilities, the bot simplifies repetitive tasks, enhances productivity, and improves decision-making processes through timely updates. The "Latest News Update Bot through Mail" is a scalable and versatile tool designed to meet diverse informational needs in a fast-paced digital environment.

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Raghul S (220701210)

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LIST OF ABBREVIATIONS

ABBREVIATION	ACCRONYM
RPA	Robotic Process Automation
AI	Artificial Intelligence
API	Application Programming Interface
CV	Computer Vision
OCR	Optical Character Recognition

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In today’s fast-paced digital age, staying informed about the latest news is essential for individuals and organizations alike. However, manually searching, filtering, and distributing news can be a time-consuming and repetitive task. The "Latest News Update Bot through Mail" project addresses this challenge by leveraging Robotic Process Automation (RPA) with UiPath to automate the process of retrieving, organizing, and sharing news updates via email.

This project is designed to collect the latest news from predefined sources, such as online news platforms or APIs, and filter it based on user-defined criteria like keywords or categories. The bot processes the information, composes email updates, and delivers them to specific recipients at scheduled intervals. This eliminates the need for manual effort, ensures timely delivery, and reduces errors associated with manual processes.

The bot integrates advanced features such as error handling, data validation, and customization of email templates, making it a reliable and user-friendly solution. It is particularly beneficial for businesses, media professionals, and individuals who require real-time updates to make informed decisions.

By automating the dissemination of news, the "Latest News Update Bot through Mail" not only enhances productivity but also ensures that users receive accurate and relevant information efficiently. This project demonstrates the potential of RPA in transforming everyday processes into seamless, automated workflows.

1.2 OBJECTIVE

The objective of the "Latest News Update Bot through Mail" project is to automate the process of retrieving, filtering, and delivering real-time news updates to designated recipients via email. This project aims to eliminate manual effort, ensure timely dissemination of relevant information, and enhance productivity by leveraging UiPath's Robotic Process Automation capabilities. It is designed to provide users with a scalable, accurate, and efficient solution for staying updated with the latest news tailored to their specific needs.

1.3 EXISTING SYSTEM

The current system for retrieving and sharing news updates relies on manual efforts, requiring users to visit multiple sources, filter relevant information, and send emails manually. This process is time-consuming, prone to errors, and inefficient, especially for frequent updates. It lacks automation, scalability, and real-time accuracy, making it unsuitable for fast-paced environments.

1.4 PROPOSED SYSTEM

The proposed system, "Latest News Update Bot through Mail," automates the process of retrieving, filtering, and distributing news updates via email using UiPath. The bot gathers news from predefined sources, processes it based on user-defined criteria, and delivers it to recipients at scheduled intervals. This system eliminates manual effort, ensures real-time updates, enhances accuracy, and saves time. With features like error handling and email customization, the proposed system offers a scalable, efficient, and user-friendly solution for timely and relevant news dissemination.

CHAPTER 2

LITERATURE REVIEW

Introduction to Robotic Process Automation (RPA)

Robotic Process Automation (RPA) is a technology that allows the automation of rule-based, repetitive tasks across various industries. RPA utilizes software robots (or "bots") to perform these tasks with precision and speed, freeing up human employees for more complex duties. As businesses increasingly adopt automation to enhance efficiency, tools like UiPath have become widely used in automating business processes, from data entry to more complex workflows.

Use of RPA in News Aggregation

News aggregation is the process of collecting and organizing news articles from different sources for presentation or further analysis. Automating news collection and distribution through RPA can save significant time and effort, especially in industries where staying updated with the latest information is critical. Previous studies have explored RPA's application in news aggregation, where data scraping techniques were used to extract relevant news content from websites, saving time on manual monitoring and reading.

UiPath in Process Automation

UiPath is one of the leading RPA tools available today, offering an intuitive environment for automating workflows. It includes functionalities such as Input Dialogs, Data Scraping, and integration with email services like SMTP for sending notifications. According to various studies, UiPath is particularly effective in automating routine tasks such as email handling, report generation, and data extraction from unstructured sources like websites. This flexibility allows for the development of customized automation solutions, such as the "Latest News Update Bot."

Role of Data Scraping in Information Extraction

Data scraping refers to the process of automatically extracting data from websites or other

digital platforms. In the context of news aggregation, data scraping allows the bot to identify and retrieve the latest news articles from various online sources. The accuracy and efficiency of data scraping techniques are critical to the quality of the bot's functionality. Studies have shown that data scraping can help automate the collection of structured or unstructured data, which is essential for keeping the "Latest News Update Bot" updated with relevant content for email distribution.

SMTP Integration for Email Automation

The Simple Mail Transfer Protocol (SMTP) is a widely used protocol for sending emails. RPA tools like UiPath have built-in SMTP integration that allows bots to send automated email messages. In the case of the "Latest News Update Bot," the integration of SMTP enables the bot to send the latest news updates directly to users via email. Literature on email automation emphasizes how SMTP integration can streamline communication, increase productivity, and enhance user engagement by delivering timely information without human intervention.

Applications and Impact

RPA's ability to automate the news aggregation process has significant potential in industries such as media, finance, and customer service. The "Latest News Update Bot" provides users with an automated mechanism to receive curated news updates tailored to their preferences, ultimately saving time and improving decision-making. By leveraging UiPath’s capabilities, the bot ensures the accuracy of the collected data and the timely distribution of information.

Challenges and Future Directions

While RPA offers several benefits, challenges remain, particularly in the areas of data accuracy and bot maintenance. Data scraping may not always be foolproof, especially when websites undergo structural changes. Future developments in the project may involve improving error-handling mechanisms and making the bot more adaptive to changes in news sources. Additionally, incorporating machine learning techniques could enhance the bot's ability to identify relevant news based on user preferences, further streamlining the process.

CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

A flowchart is a type of diagram that represents an algorithm, workflowor process. The flowchart shows the steps as boxes of various kinds, and their order by connecting the boxes with arrows. This diagrammatic representation illustrates a solution model to a given problem. The system flow diagram for this project is in Fig. 3.1.

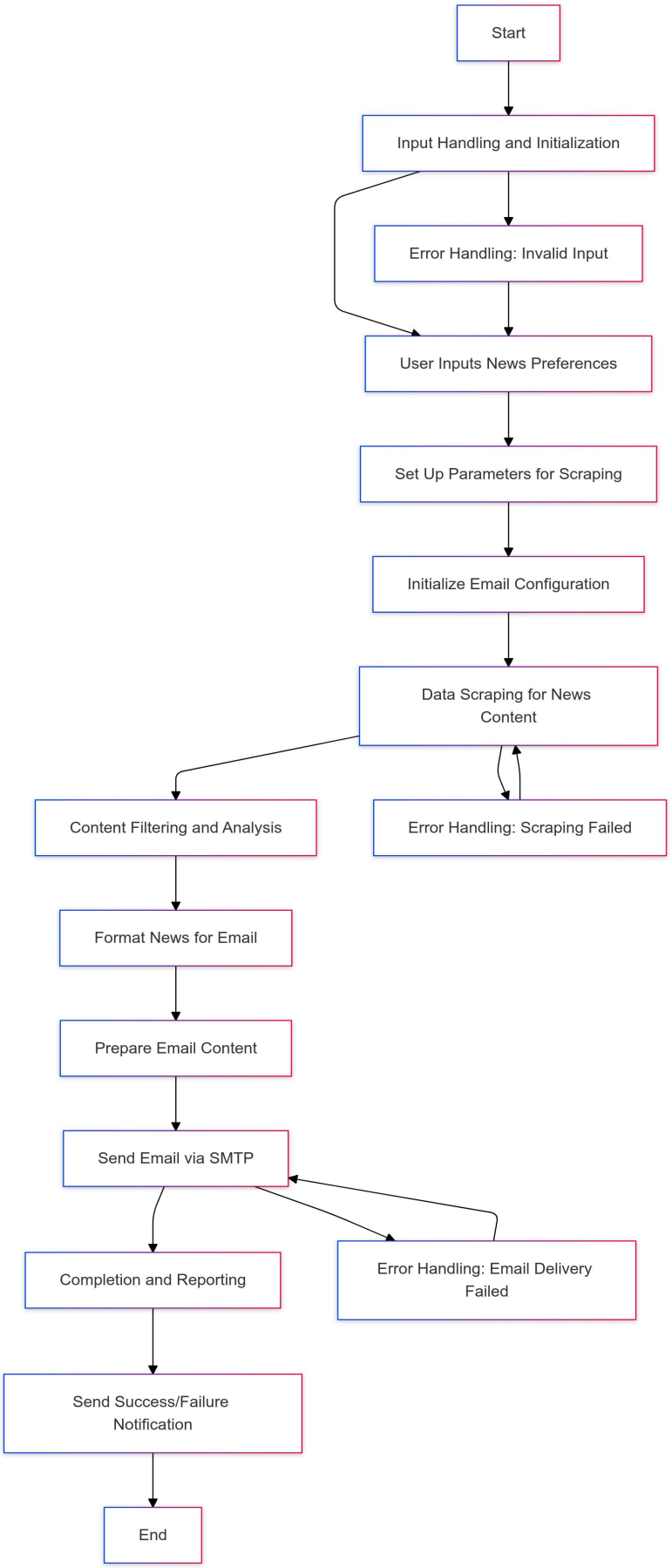


Fig 3.1 System Flow Diagram

3.2 ARCHITECTURE DIAGRAM

An architecture diagram is a graphical representation of a set of concepts, that are part of an architecture, including their principles, elements and components. The architecture diagram for this project is in Fig. 3.2.

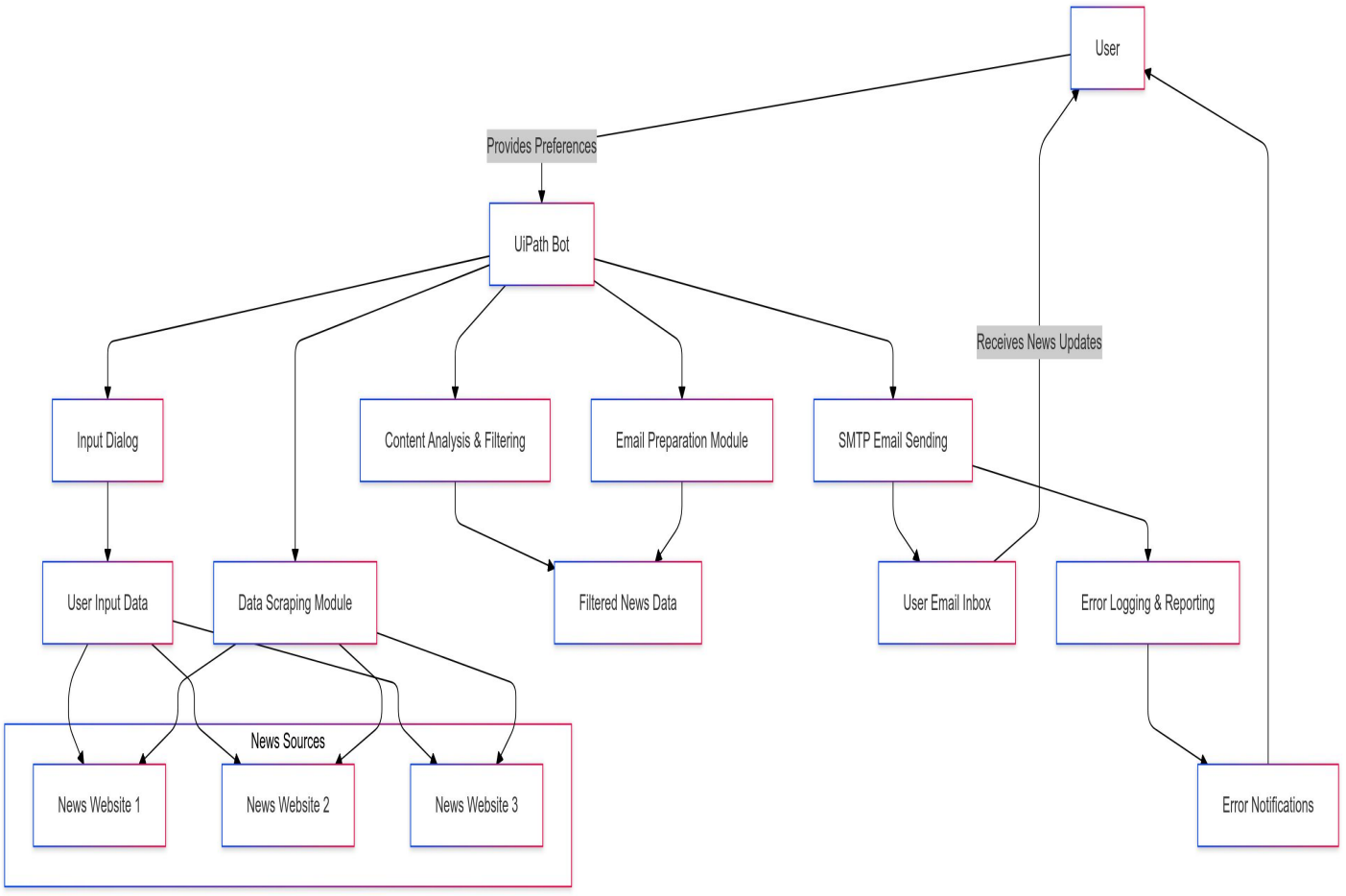


Fig 3.2 Architecture Diagram

3.3 SEQUENCE DIAGRAM

A sequence diagram is a type of interaction diagram because it describe and s how in what order a group of objects works together. The sequence diagram for this project is in Fig. 3.3.

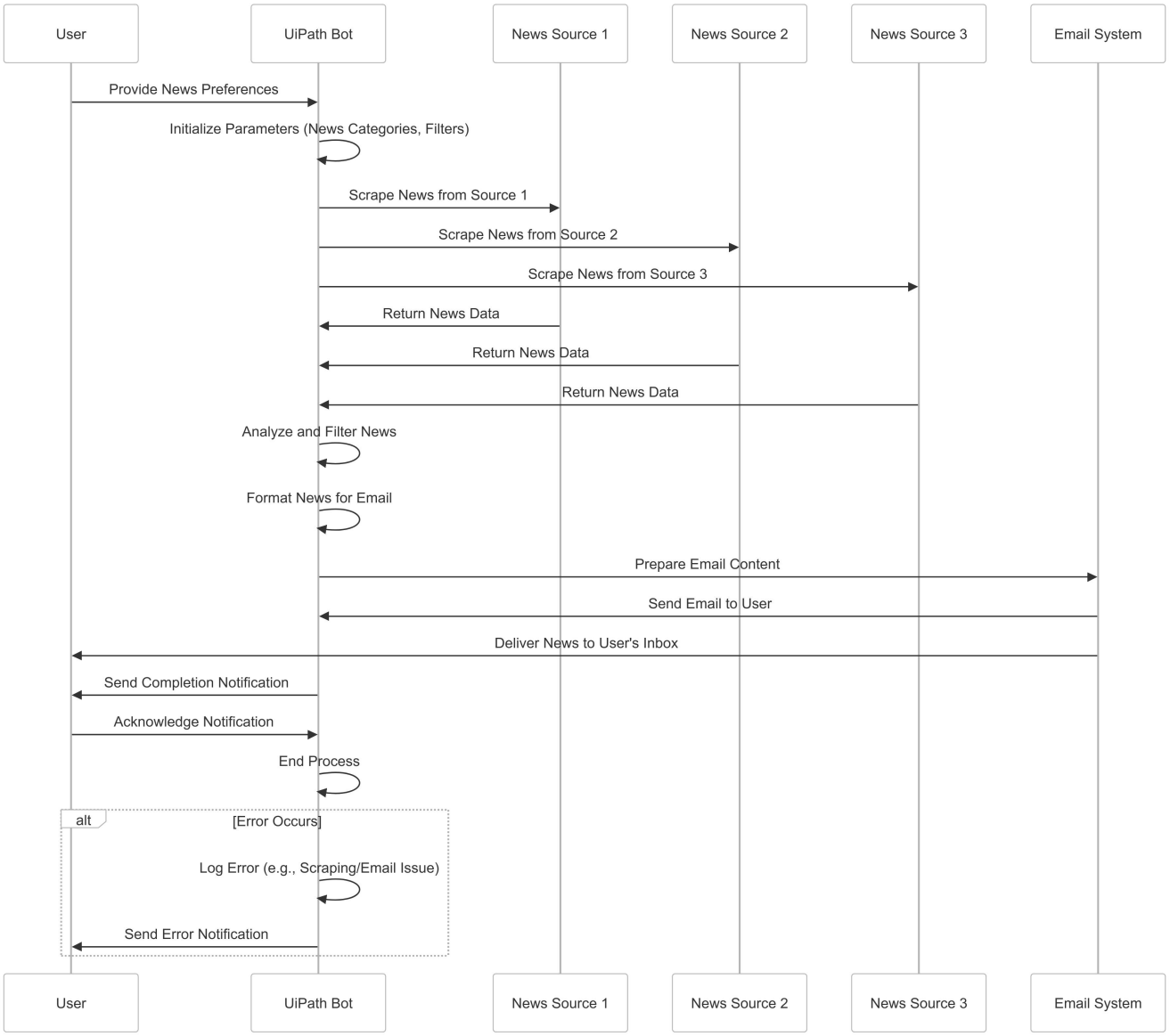


Fig 3.3 Sequence Diagram

CHAPTER 4

PROJECT DESCRIPTION

Project Description: Latest News Update Bot

The Latest News Update Bot is an RPA (Robotic Process Automation) project developed using UiPath to automate the process of gathering the latest news updates from various sources, analyzing them, and sending them to users via email. The bot leverages key UiPath features such as Input Dialogs, Data Scraping, and SMTP Send Mail to automate the process in a seamless manner. The project consists of the following main modules:

1. Input Handling and Initialization

This module is responsible for gathering user preferences and initializing the automation process.

User Preferences Collection: The bot begins by using an Input Dialog to prompt the user for the desired news category (e.g., technology, sports, politics) and any additional filters (e.g., location, time frame).

Initialization: Based on the user's input, the bot sets up the appropriate parameters for data scraping. It initializes the necessary variables, such as news sources (websites, RSS feeds), email configuration (SMTP settings), and output formats.

Error Handling: If the user provides incomplete or incorrect input, the bot requests clarification, ensuring smooth operation before proceeding.

2. Content Analysis

Once the input is collected, this module is responsible for gathering and analyzing the content of interest.

Data Scraping: The bot uses UiPath's Data Scraping tool to extract relevant news articles from predefined websites based on the user's specified categories and preferences. The data is scraped from structured and semi-structured sources, ensuring that all relevant content is captured.

Content Filtering: The bot filters the scraped data based on predefined keywords, timestamps, and other criteria provided by the user. It analyzes the articles to ensure they

meet the required relevance and quality standards before proceeding to the next step.

3. Result Management

This module handles the organization, formatting, and final management of the news content before sending it out.

Result Formatting: After analyzing and filtering the content, the bot organizes the extracted news into a well-structured format (e.g., bullet points, headlines with links, brief summaries).

Email Preparation: The bot prepares the email content by embedding the formatted news updates within the body of the email. It customizes the subject and message body to ensure the email is both informative and engaging for the user.

SMTP Integration: The bot uses the SMTP Send Mail activity to send the email with the latest news updates. SMTP configuration is set up based on user input, ensuring secure and reliable delivery.

4. Completion and Reporting

In this final module, the bot ensures that the process is completed efficiently and provides feedback to the user.

Completion Status: Once the email is sent, the bot notifies the user of successful completion via a message or log. It may also include a confirmation email with a summary of the delivered content.

Error Logging and Reporting: In case of any issues (e.g., failed email delivery or scraping errors), the bot logs the errors for further investigation and can send an error report to the user for troubleshooting.

Process Completion: The bot ends the process by providing a summary report on the number of news articles gathered, the categories covered, and any issues encountered during execution.

CHAPTER 5

OUTPUT SCREENSHOTS

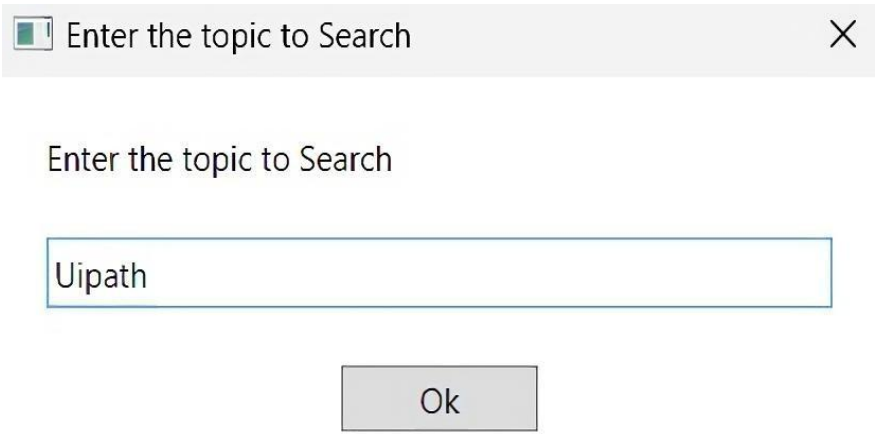


Fig 5.1: It first get topic as input in message box

Fig 5.2 : It's takes the email Id as input in message box

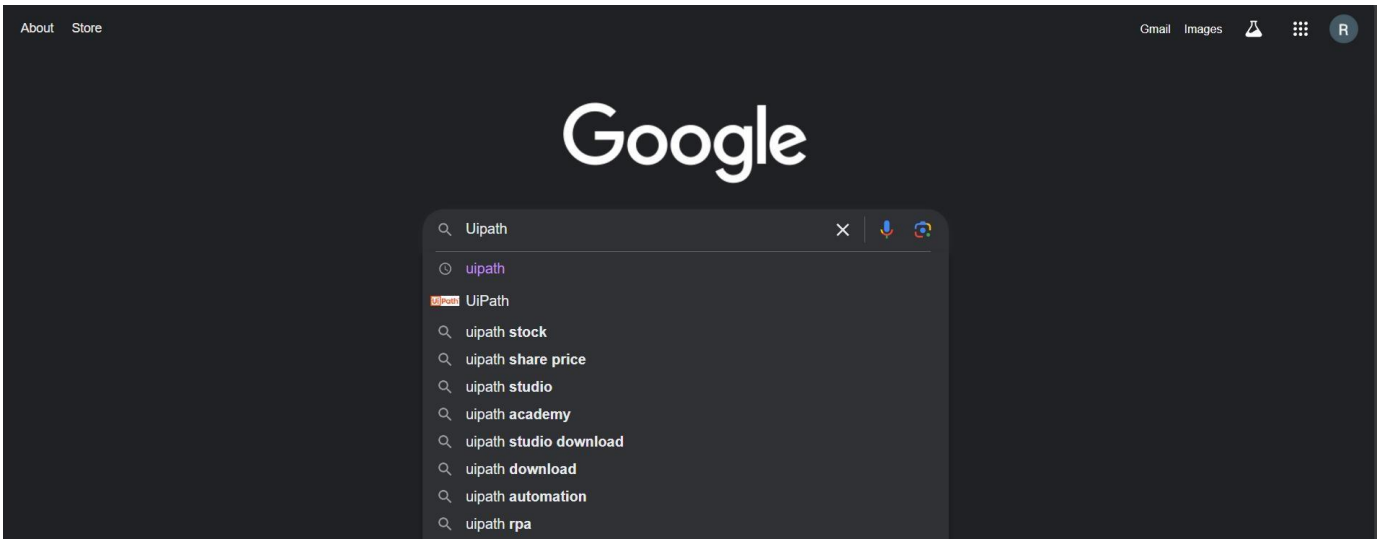


Fig 5.3 : The bot automatically type www.google.com in edge browser and search for the following topic as given in input

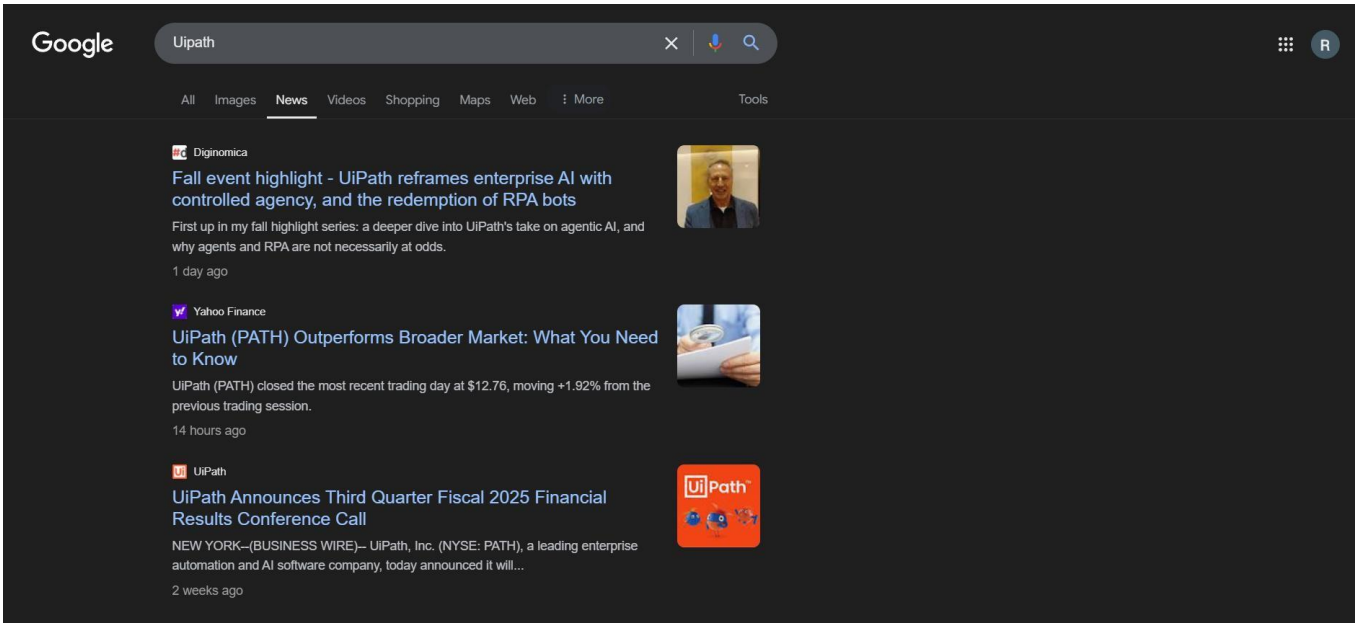


Fig 5.4 : The bot automatically searches for the topic which you given as input and redirect to the page and using click activity the bot clicks news to check for latest news using data scrapping method and take the input as data table.

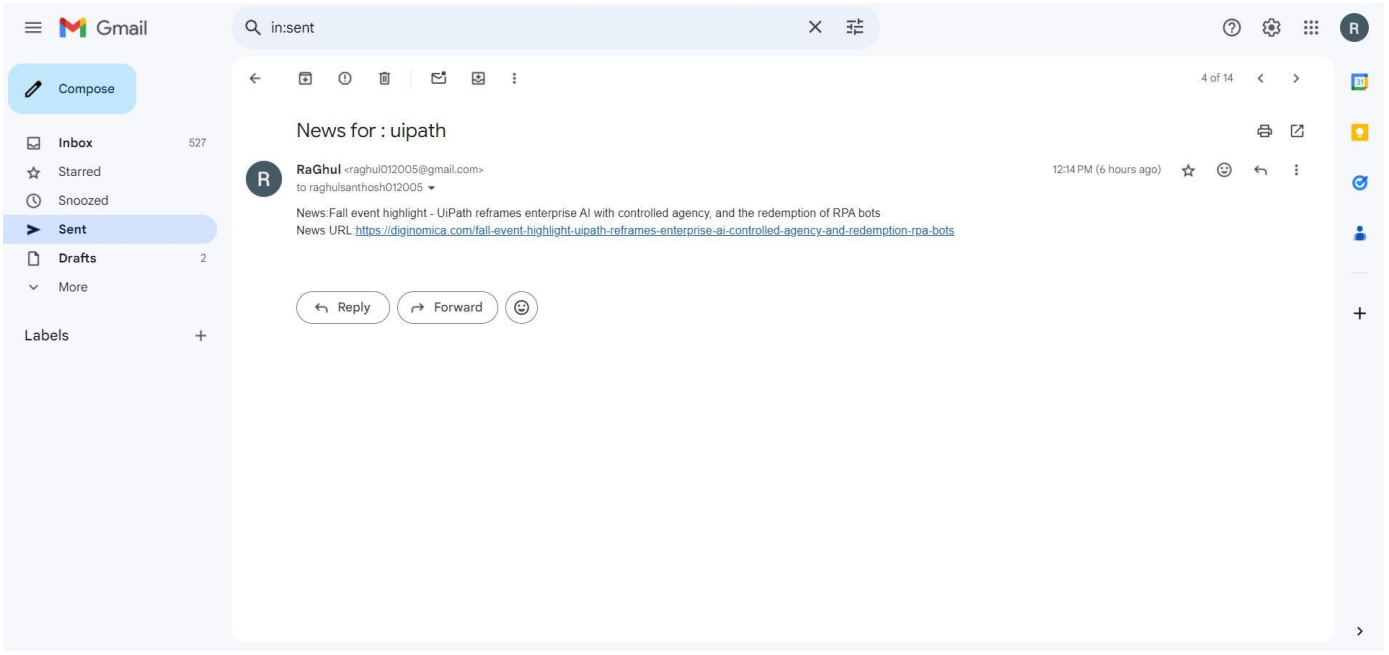


Fig 5.5: The bot uses send SMTP mail message to send the latest news with URL through mail which was data scrapped by the bot for the required mail you given as input

CHAPTER 6

CONCLUSION

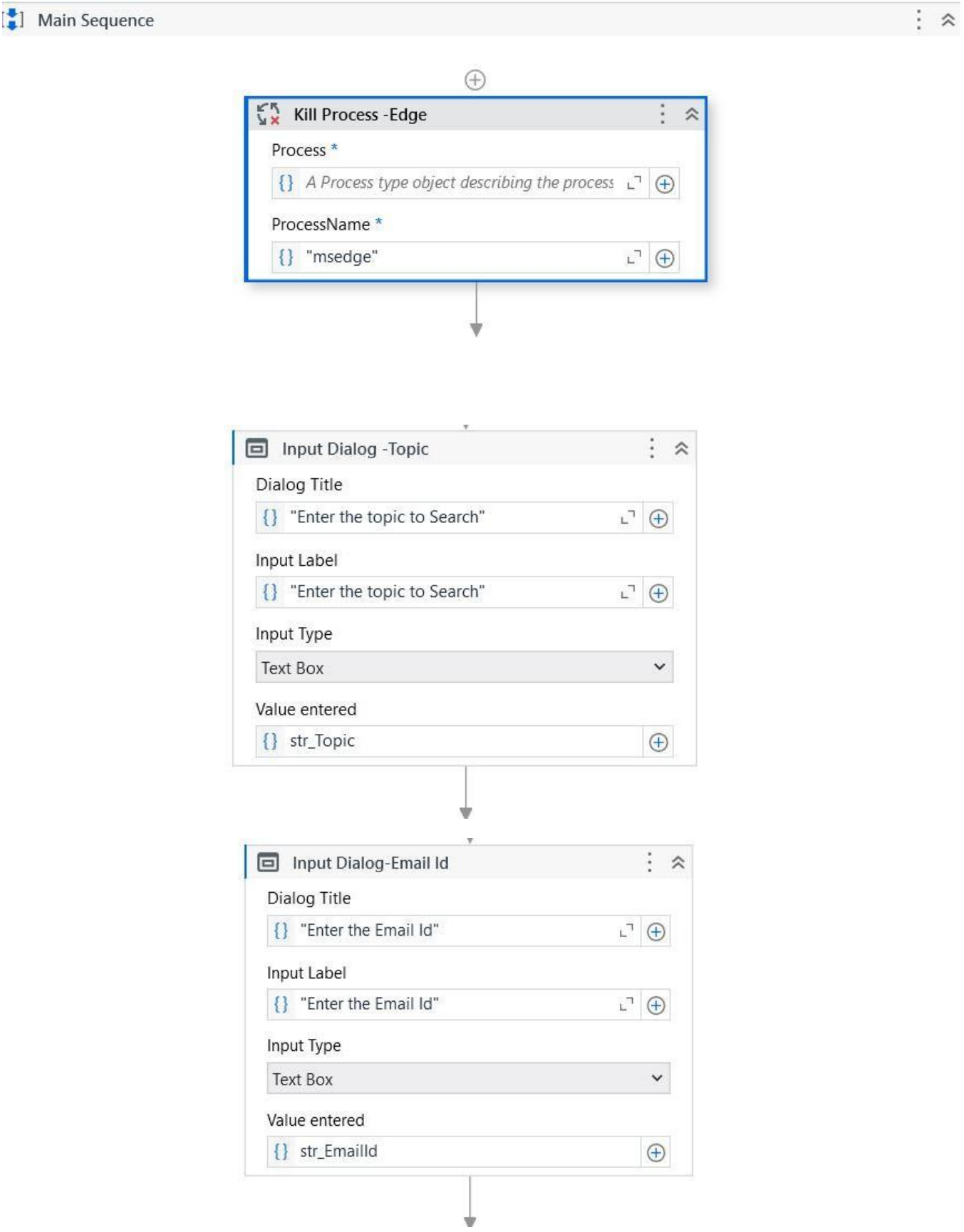
The Latest News Update Bot demonstrates the practical application of Robotic Process Automation (RPA) in automating routine yet critical tasks like news aggregation and distribution. By leveraging UiPath's capabilities, the bot effectively collects, analyzes, and delivers curated news updates to users via email, ensuring timely and relevant information dissemination.

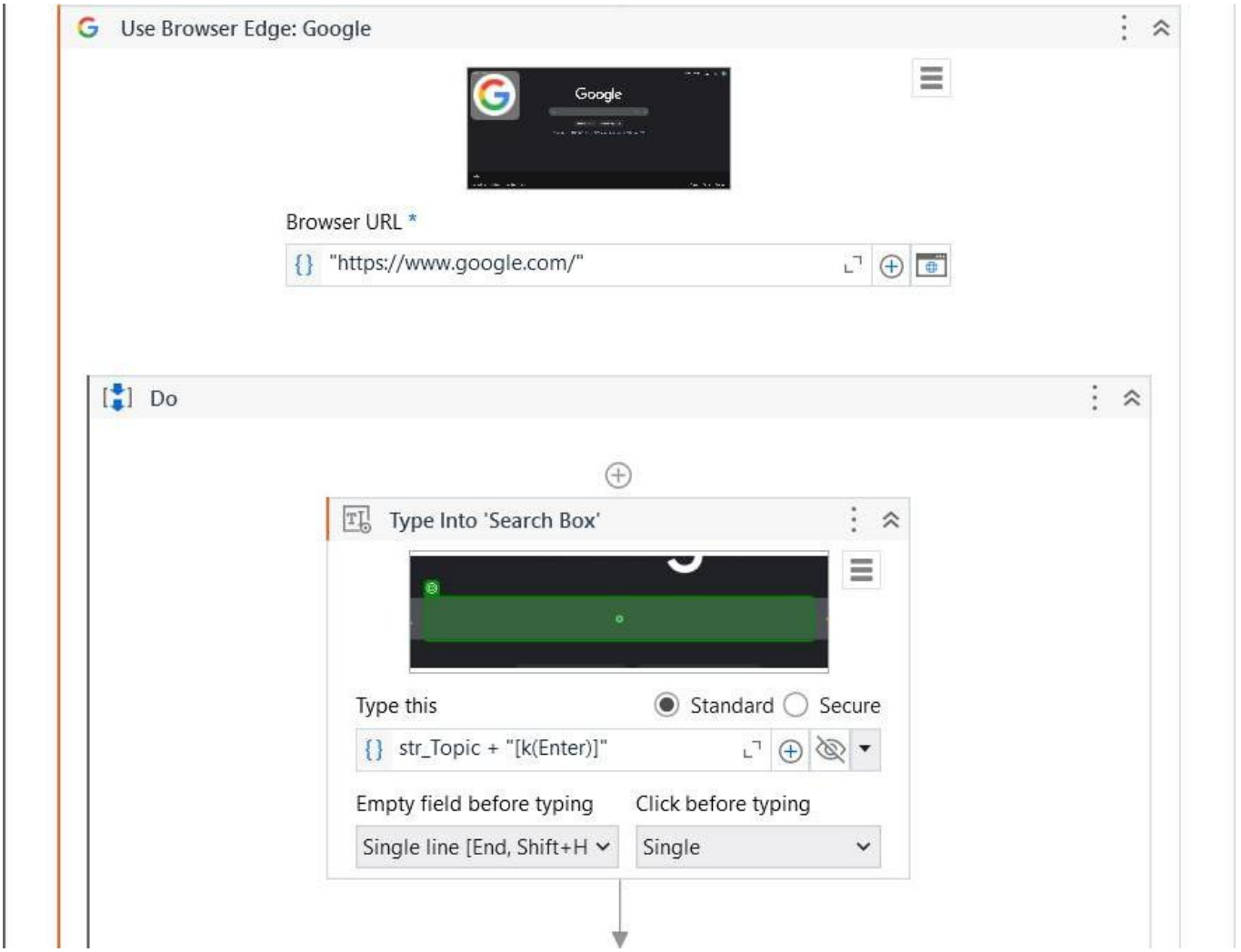
This project highlights the power of automation in enhancing productivity and reducing manual effort. The modular design, which includes Input Handling, Content Analysis, Result Management, and Completion & Reporting, ensures flexibility and scalability for future improvements. The integration of features such as data scraping and SMTP email functionality showcases the versatility of RPA in streamlining workflows across diverse domains.

In conclusion, the Latest News Update Bot serves as a valuable tool for individuals and organizations needing regular updates, setting the foundation for future enhancements like machine learning-based content personalization and real-time alerts. This project underscores the transformative potential of automation in driving efficiency and innovation.

APPENDIX

PROCESS WORK FLOW

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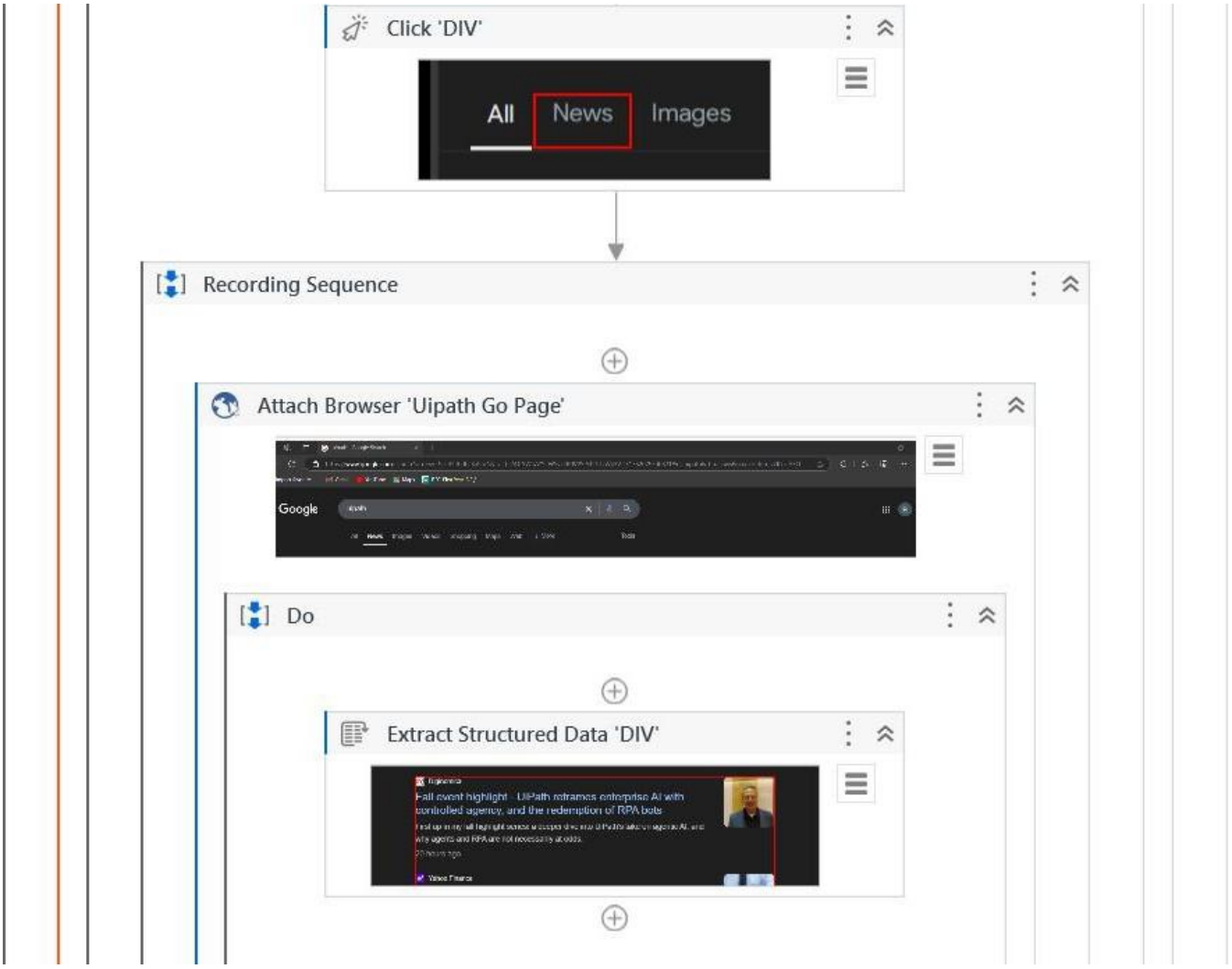
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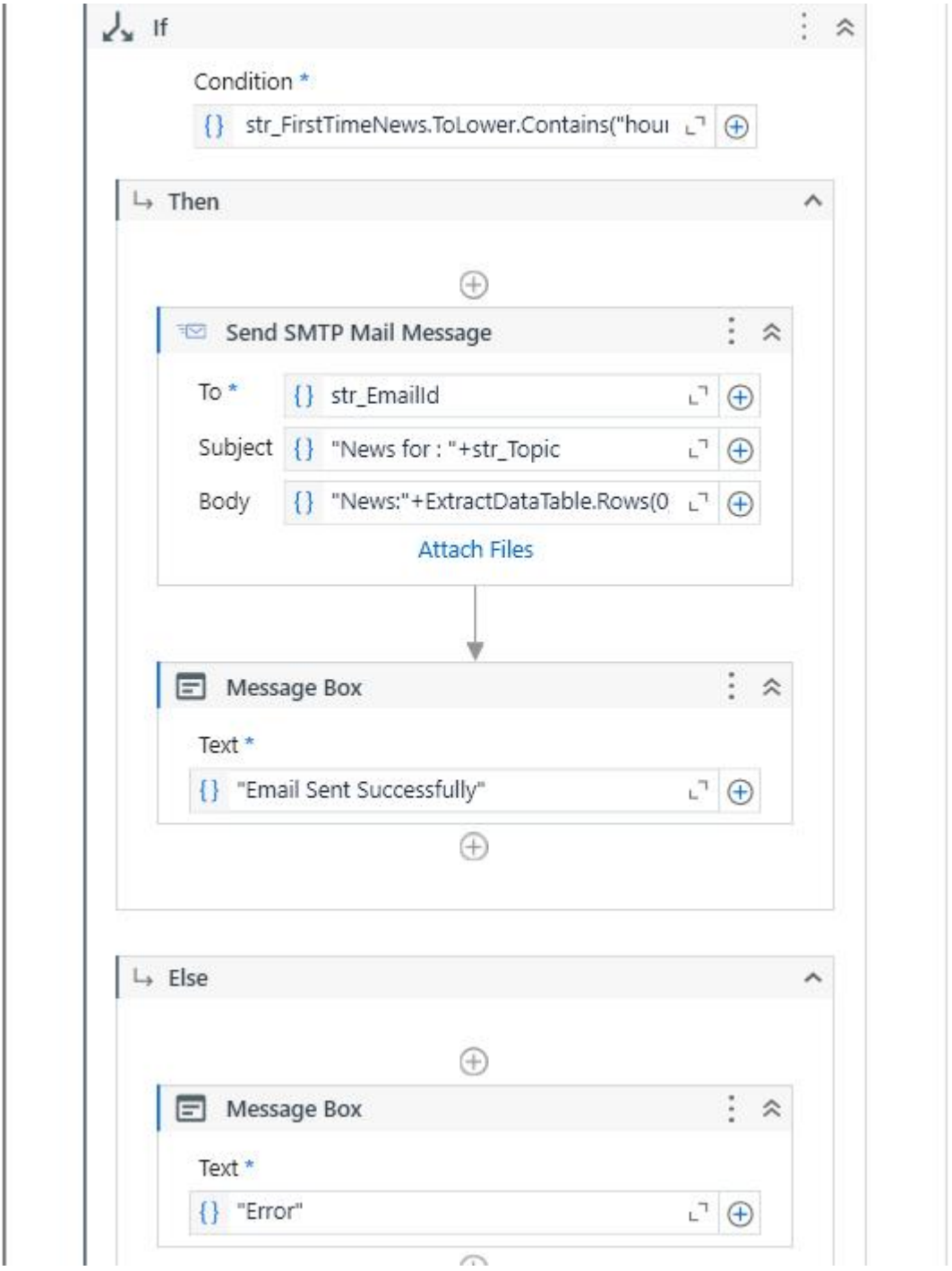
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{} str_EmailId
Subject
{} "News for : "+str_Topic
Body
{} "News:"+ExtractDataTable.Rows(0
Attach Files
Message Box
Text *
{} "Email Sent Successfully"
Else
Message Box
Text *
{} "Error"

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