TRAVEL ASSISTANT BOT

A PROJECT REPORT

Submitted by

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CHENNAI - 602105

BONAFIDE CERTIFICATE

Certified that this project report **"The Travel Assistant Bot"** is the Bonafide work of **"CAROLINE SUJA J S (220701048)"** who carried out the project work for the subject OAI1903 - Introduction to Robotic Process Automation under my supervision.

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Submitted to Project and Viva Voce Examination for the subject OAI1903 - Introduction to Robotic Process Automation held on _____.

Internal Examiner **External Examiner**

ABSTRACT

"The Travel Assistant Bot - Flight Finder Pro" project is an RPA-based solution designed to automate the flight search process, making travel planning seamless and efficient. The bot collects user inputs such as source, destination, travel date, and email ID through input dialogs. It navigates to the MakeMyTrip.com website, inputs the details, and scrapes relevant flight information, including airline name, departure time, and ticket price. The extracted data is then organized into an Excel file and emailed to the user using SMTP.

This project eliminates the need for manual browsing, saving time and ensuring accuracy in retrieving flight details. It leverages UiPath's capabilities for data scraping, Excel handling, and email automation to deliver a user-friendly and efficient experience. The solution is scalable and can be enhanced with additional features like multi-platform support and customized flight filtering.

By automating a repetitive and time-consuming task, the Flight Finder Pro project highlights the potential of RPA to streamline everyday processes and enhance productivity.

ACKNOWLEDGEMENT

Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavor to put forth this report. Our sincere thanks to our Chairman **Mr. S. Meganathan, B.E, F.L.E.,** our Vice Chairman **Mr. Abhay Shankar Meganathan, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) Thangam Meganathan, Ph.D.,** for providing us with the requisite infrastructure and sincere endeavoring in educating us in their premier institution

Our sincere thanks to **Dr. S.N. Murugesan, M.E., Ph.D.,** our beloved Principal for his kind support and facilities provided to complete our work in time We express our sincere thanks to **Dr. P. Kumar, M.E., Ph.D.,** Professor and Head of the Department of Computer Science and Engineering for his guidance and encouragement throughout the project work. We convey our sincere and deepest gratitude to our internal guides, **Mrs. J. Jinu Sophia, M.E., (Ph.D.),** Assistant Professor (SG), Department of Computer Science and Engineering. Rajalakshmi Engineering College for her valuable guidance throughout the course of the project. We are very glad to thank our Project Coordinators, **Dr. N. Durai Murugan, M.E., Ph.D.,** Associate Professor, and **Mr. B. Bhuvaneswaran, M.E.** Assistant Professor (SG), Department of Computer Science and Engineering for their useful tips during our review to build our project

Caroline Suja J S (220701048)

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LIST OF ABBREVIATIONS

ABBREVIATION	ACCRONYM
RPA	Robotic Process Automation
SMTP	Simple Mail Transfer Protocol
UI	User Interface
CSV	Comma Separated Values

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

"The Travel Assistant Bot - Flight Finder Pro" project is a Robotic Process Automation (RPA)-based solution designed to simplify and automate the process of searching for flights. In today's fast-paced world, planning travel efficiently is crucial, and this project addresses the need for a user-friendly tool to retrieve accurate flight details without manual effort.

The bot interacts with users to collect essential travel information such as source, destination, travel date, and email ID. It navigates to the MakeMyTrip.com website, enters the provided details, and extracts flight information like airline name, departure time, and ticket price using data scraping techniques. The extracted data is organized in an Excel file and sent to the user via email, offering a seamless experience.

This project showcases the practical application of RPA in solving real-world problems by automating repetitive and time-consuming tasks. It demonstrates how technology can enhance user experience, reduce manual errors, and save valuable time. The system is designed to be user-friendly, efficient and scalable for future enhancements like multi-platform integration or advanced filtering options.

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By leveraging UiPath’s capabilities, Flight Finder Pro provides an innovative approach to travel planning, making it a valuable tool for modern-day users.

UiPath's main product is the UiPath Automation Platform. The platform combines a family of low-code visual integrated development environment (IDE) products called Studio for process creation, with client-side agents called Robots that execute those processes.

1.2 OBJECTIVE

The objective of The “Travel Assistant Bot - Flight Finder Pro” is to automate the process of searching for flights and organizing the details to provide a seamless and efficient travel planning experience. By leveraging Robotic Process Automation (RPA), the bot collects user inputs such as source, destination, travel date, and email ID, searches for relevant flights on a trusted travel website like MakeMyTrip.com, and extracts accurate information, including airline name, departure time, and ticket price. The data is then organized into an Excel file and emailed to the user. This project aims to save time, minimize manual effort, and ensure accuracy in retrieving and delivering flight details, making travel planning hassle-free and efficient.

1.3 EXISTING SYSTEM

In the current travel planning process, searching for flight details and organizing the information is a manual and time-consuming task. Travelers typically visit multiple websites to compare flights, check availability, and gather details such as airline names, departure times, and ticket prices. This often involves repetitive data entry and navigating through extensive search results, leading to inefficiency and errors. Moreover, organizing the retrieved data for future reference and sharing it with others requires additional effort. The lack of an automated system places a burden on users, making travel planning tedious and prone to inaccuracies. The need for a streamlined, automated solution to simplify and accelerate this process is evident.

1.4 PROPOSED SYSTEM

“The Travel Assistant Bot - Flight Finder Pro” is designed to address the inefficiencies and challenges in the current travel planning process. Utilizing UiPath's Robotic Process Automation (RPA) capabilities, the bot automates the task of searching for flights based on user-provided details such as source, destination, and travel date. The proposed system will navigate to trusted travel websites, such as MakeMyTrip.com, extract relevant flight details like airline names, departure times, and ticket prices, and organize this information into an Excel file. Additionally, the bot will send the compiled data via email to the user. This automation eliminates the need for manual browsing, saving time and reducing the chances of human error. By streamlining the travel planning process, The Travel Assistant Bot - Flight Finder Pro offers a more efficient, accurate, and user-friendly experience for travelers. The system will also allow for future enhancements, such as multi-platform support and personalized flight recommendations, ensuring that it continues to meet the evolving needs of users. Through this project, we aim to revolutionize the travel booking experience, making it faster, more accessible, and more efficient for everyone

CHAPTER 2

LITERATURE REVIEW

2.1 Survey on Robotic Process Automation (RPA) in Education:

Robotic Process Automation (RPA) is increasingly recognized as a valuable resource in education, streamlining teaching processes. For instance, RPA has been successfully implemented in grading assignments and managing student records, significantly reducing the workload of educators. However, challenges remain, particularly in automating tasks that require social interaction and adaptation to individual learning needs. The literature review of research papers related to RPA in Education is listed below:

[1] The research discusses the rise of Artificial Intelligence (AI), robotics, and other digital technologies are creating a demand for new professions with evolved digital skills. Educational institutions must adopt these technologies to promote digital skills development and empower students to lead active and creative digital lives. The education sector is ready to witness a revolution with robotics process automation (RPA) technology. RPA focuses on the elimination of inefficiencies and the effort of human resources that is wasted while executing mundane tasks. RPA helps teachers, educators, students as well as parents directly or indirectly.

[2] A research paper from IJITEE proposes a Robotic Process Automation (RPA) solution for the education domain. It shows the automation process for result analysis of student's examination results. The automation process takes input as the university result in pdf form.

The research concludes that RPA can help out here by saving time and under a budget which is a limited & crucial resource for educational institutes.

2.2 Survey on Flight Search Automation Tools:

Automating the flight search and booking process has been a growing area of interest in the travel industry. Several tools and systems have emerged to simplify and expedite flight booking, but many still require manual input and lack full automation. Existing platforms, such as Google Flights and Skyscanner, offer search capabilities, but users still need to manually enter details, compare results, and organize data. Despite their effectiveness, these systems are not fully automated, and the process of collecting, comparing, and organizing flight information can be time-consuming and error-prone.

The literature review on travel automation and flight search optimization reveals the following insights:

[3] A study on flight booking automation explored the use of RPA in the travel industry, emphasizing its ability to automate repetitive tasks such as data entry and comparison across multiple flight booking platforms. The study found that while RPA tools significantly reduce human intervention, there are challenges in integrating these tools with multiple third-party websites, ensuring accurate data extraction, and handling dynamic web page structures.

[4] Research conducted by travel industry experts evaluated the effectiveness of AI and automation tools in streamlining flight search processes. The study tested several automation systems for flight detail extraction, finding that while automation tools could speed up the data retrieval process, they still faced limitations in handling complex filtering options and dynamic pricing, which required further advancements in AI

algorithms for better accuracy and flexibility.

This survey highlights the gap in the market for a fully automated travel assistant that can seamlessly retrieve, organize, and deliver flight information, which is the focus of The Travel Assistant Bot - Flight Finder Pro. The proposed system aims to fill this gap by offering a comprehensive, user-friendly, and automated solution for flight search and booking.

2.3 Summary of the intersection of RPA and Flight Search Automation Tools :

The integration of Robotic Process Automation (RPA) into the flight search and booking process presents a significant opportunity to streamline and enhance the efficiency of travel planning. While existing platforms like Google Flights and Skyscanner offer useful search capabilities, they still require considerable manual input for comparing and organizing flight details. RPA can address these challenges by automating repetitive tasks, such as data entry, comparison, and organization of flight information across multiple travel booking platforms.

Studies on RPA in the travel industry highlight its potential to reduce human intervention and improve efficiency, but also emphasize the challenges faced in integrating RPA tools with dynamic web structures and third-party websites. Furthermore, automation systems currently struggle with advanced filtering options and dynamic pricing. These limitations indicate that while RPA tools are effective in automating basic tasks, further advancements in AI algorithms are needed to ensure better accuracy and flexibility in flight search automation.

The Travel Assistant Bot - Flight Finder Pro seeks to bridge this gap by leveraging RPA to fully automate the flight search and booking process. This will involve extracting flight details from trusted websites, organizing the data into a structured format, and delivering it to the user in a timely manner, all with minimal manual intervention. The proposed system aims to offer a comprehensive, user-friendly solution that addresses the existing limitations, providing a seamless, automated experience for travelers.

CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

A flowchart is a type of diagram that represents an algorithm, workflow or 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.

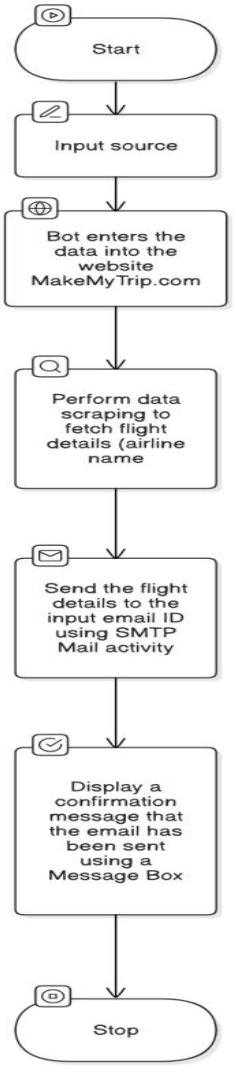


Fig 3.1 System Flow Diagram

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.

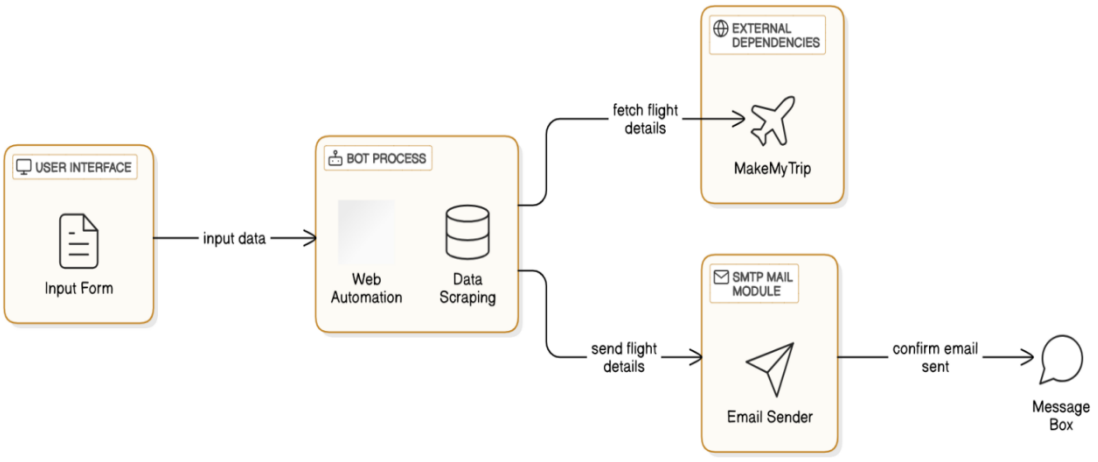


Fig 3.2 Architecture Diagram

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.

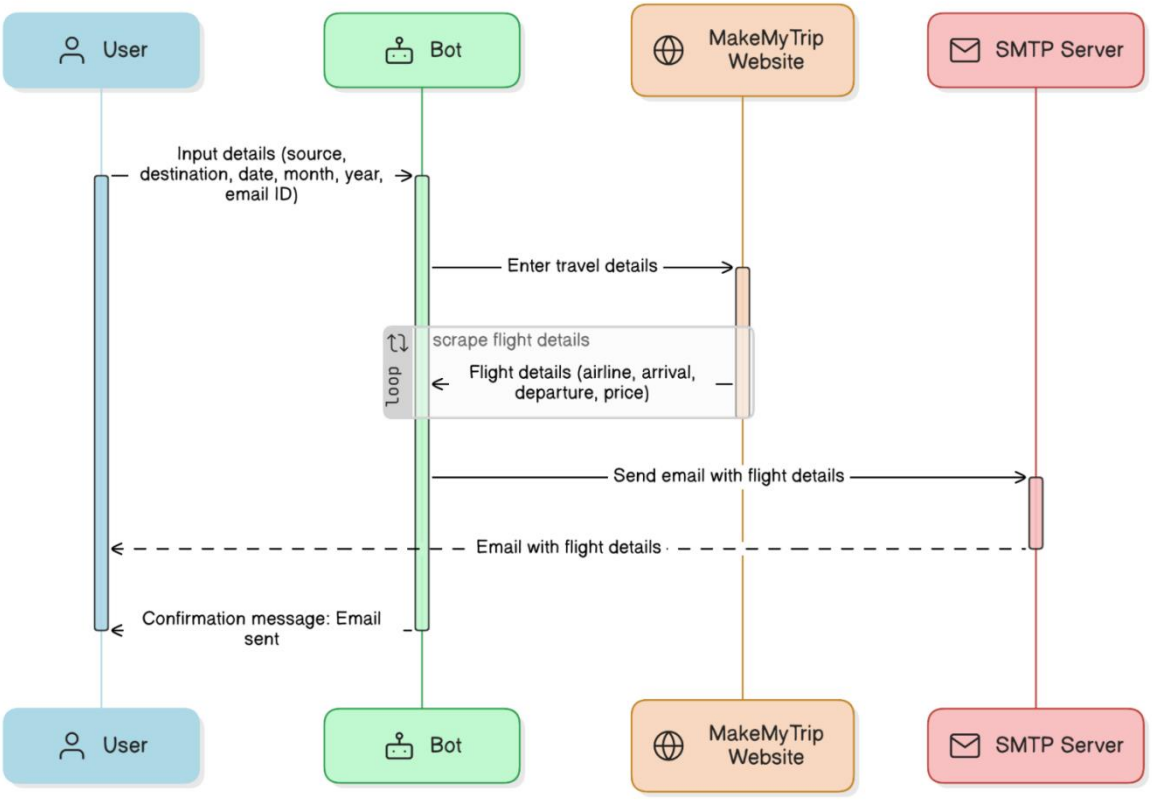


Fig 3.3 Sequence Diagram

CHAPTER 4

PROJECT DESCRIPTION

"The Travel Assistant Bot - Flight Finder Pro" is an advanced Robotic Process Automation (RPA) solution developed using UiPath, designed to simplify and automate the process of searching for and booking flights. This intelligent bot assists users in finding the best available flights based on their specified criteria (source, destination, travel date) and efficiently manages the output, providing detailed flight options in an organized format.

4.1 MODULES:

4.1.1 INPUT HANDLING AND INITIALIZATION:

4.1.1.1 User Input for Travel Details:

- Receive user input for travel-related details, including source, destination, and travel date.
- Display input prompts for the user to fill in their required travel information.

4.1.1.2 Flight Criteria Configuration:

- Allow the user to define their flight preferences such as airline type, travel class, and budget range.
- The bot dynamically adjusts search criteria based on user input.

4.1.1.3 Excel Report Generation:

- Automatically create an Excel file titled "Flight Report" to store and display the search results.
- Ensure that the report contains essential details like flight

name, timing, cost, and availability.

4.1.2 FLIGHT SEARCH AND PROCESSING:

4.1.2.1 Flight Search:

- Integrate with external flight search APIs to retrieve available flights based on the user's input criteria.
- Retrieve data on various airlines, flight timings, and prices.

4.1.1.2 Flight Data Filtering:

- Filter and sort flight results based on user-defined preferences (e.g., price range, travel class, and layovers).
- Display only the relevant flight options that meet the user's requirements.

4.1.2.3 Flight Data Processing:

- Process the retrieved flight data and identify the best possible flight options based on cost, travel time, and other preferences.
- Organize the results into a structured format (e.g., Excel) for easy reference.

4.1.3 RESULT MANAGEMENT:

4.1.3.1 Result Storage:

- Systematically populate the Excel file with the processed flight details, including flight names, prices, timings, and other necessary information.
- Ensure that the Excel report is updated dynamically as new flights are found or filtered.

4.1.3.2 Real-time Update:

- Display real-time status updates to the user during the search and booking process, providing progress information such as "Searching Flights", "Filtering Results", and "Generating Report".
- Notify the user once the process is complete

4.1.4 COMPLETION AND REPORTING:

4.1.4.1 Completion Message:

- Conclude the process with a message informing the user that the flight search and report generation have been completed successfully.
- Include details on where the generated flight report is stored (e.g., in the selected folder or via email).

4.1.4.2 Email Integration:

- Send the generated Excel flight report via email to the user's provided address, along with a personalized message summarizing the search results.

CHAPTER 5

OUTPUT SCREENSHOTS

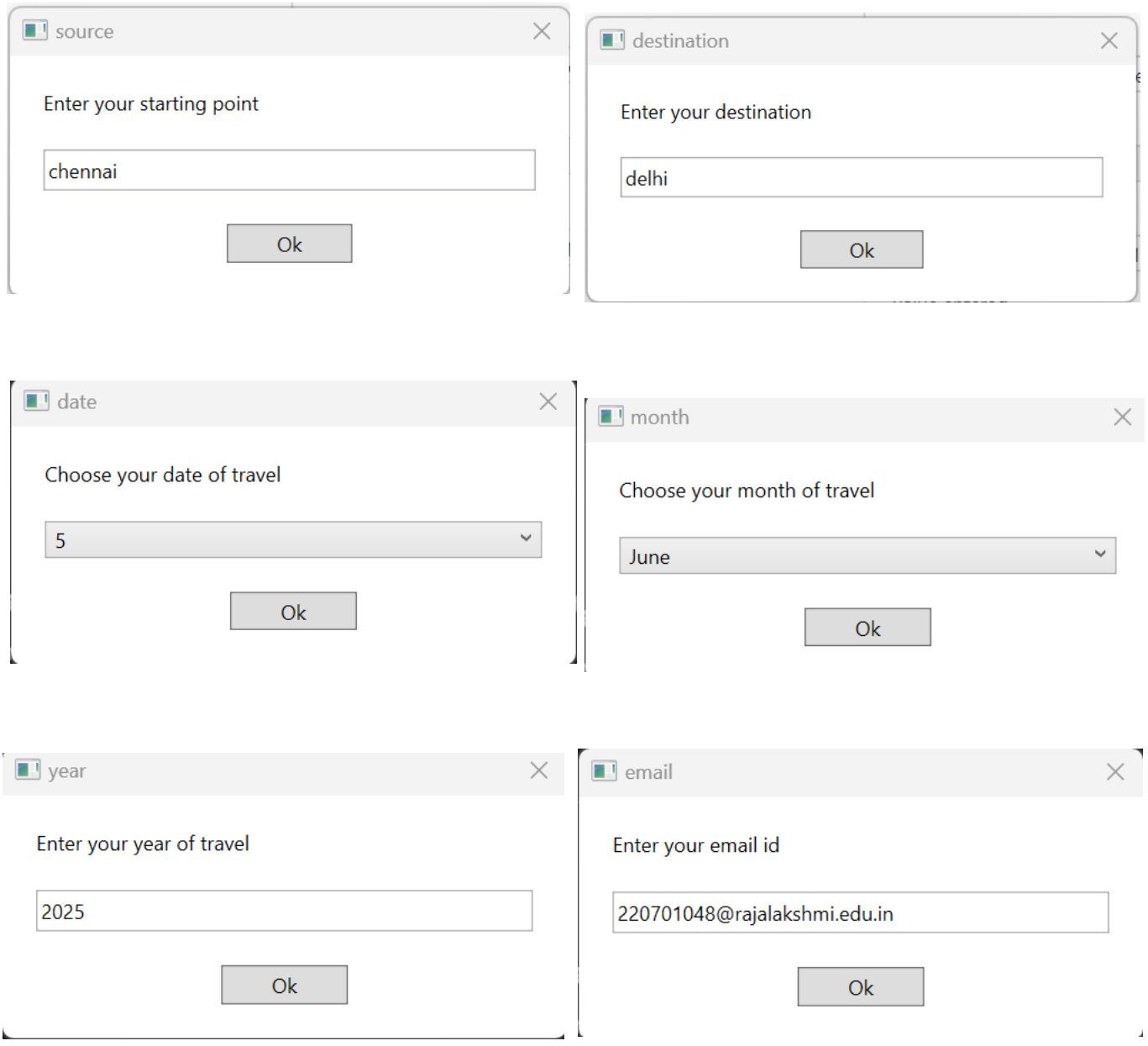


Fig 5.1 – Input Dialog

Collects user inputs for source, destination, date, month, year, and email ID as shown in

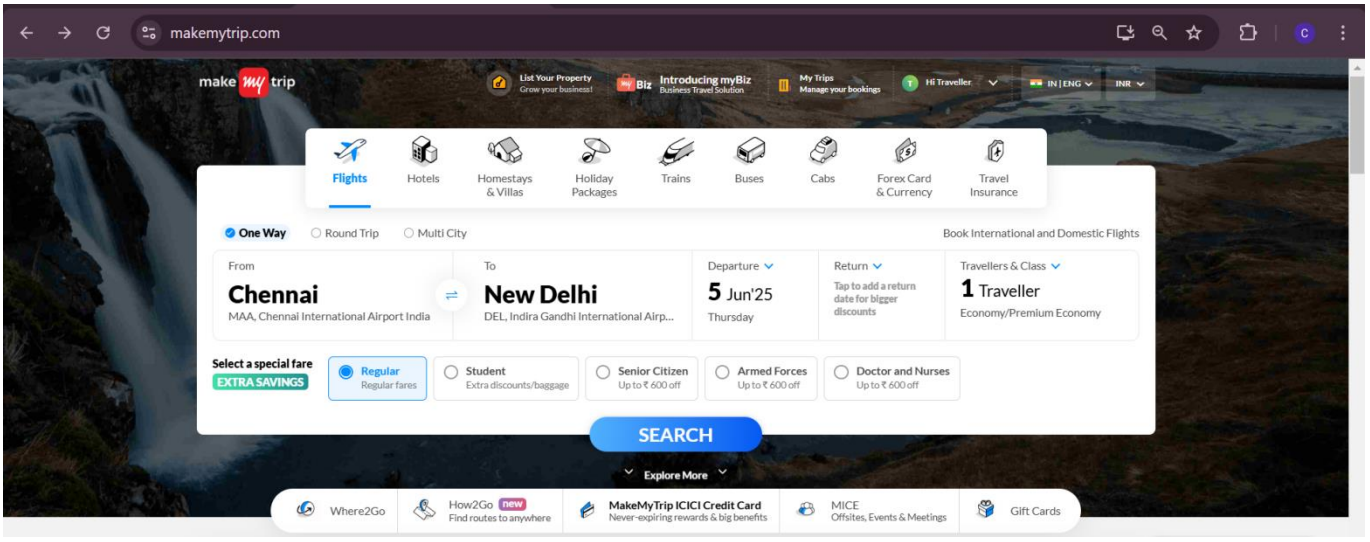


Fig 5.2 – Using Application/Browser

Navigates to *MakeMyTrip.com* to perform the search and Enters travel details into website fields and initiates the search as shown in Fig 5.2

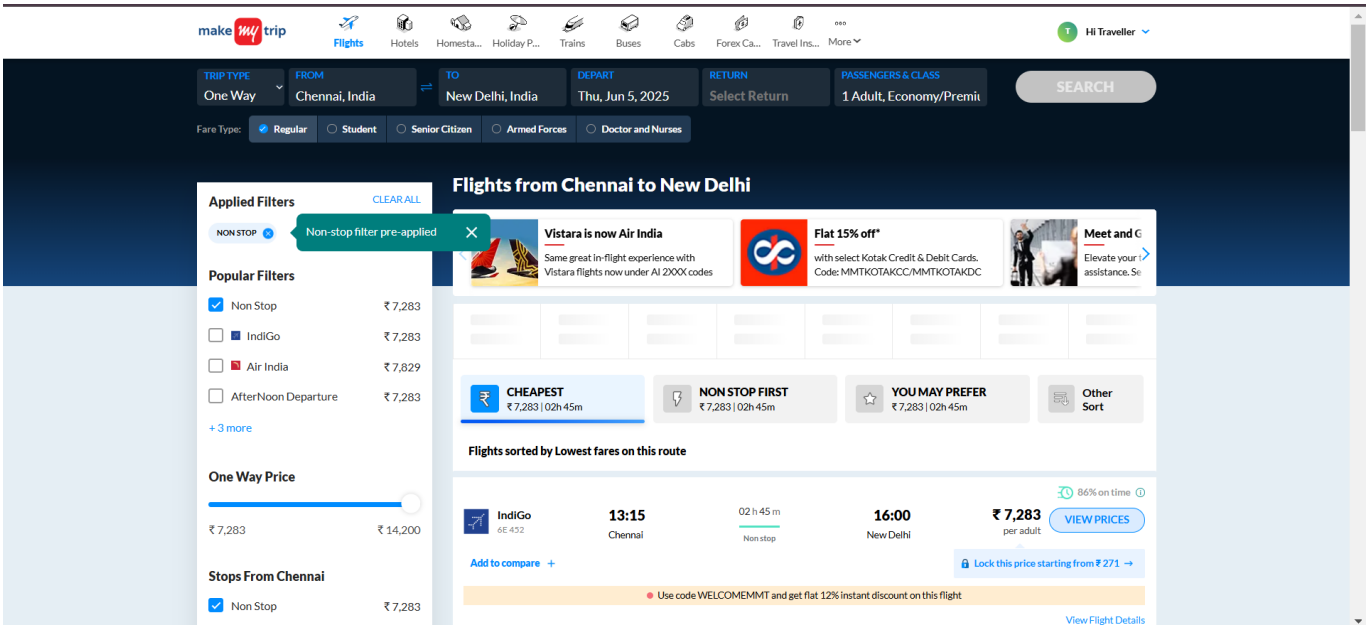
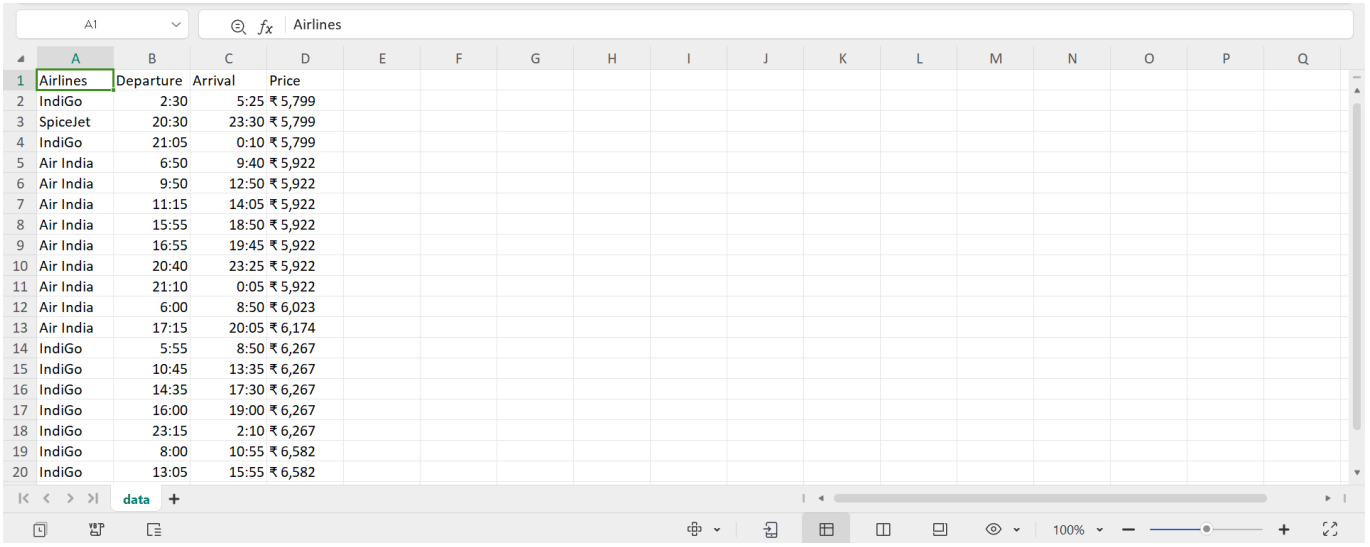


Fig 5.3 – Data Scraping

Extracts flight details such as airline name, timings, and price from the search results as it is shown in Fig 5.3.



Airlines	Departure	Arrival	Price
IndiGo	2:30	5:25	₹ 5,799
SpiceJet	20:30	23:30	₹ 5,799
IndiGo	21:05	0:10	₹ 5,799
Air India	6:50	9:40	₹ 5,922
Air India	9:50	12:50	₹ 5,922
Air India	11:15	14:05	₹ 5,922
Air India	15:55	18:50	₹ 5,922
Air India	16:55	19:45	₹ 5,922
Air India	20:40	23:25	₹ 5,922
Air India	21:10	0:05	₹ 5,922
Air India	6:00	8:50	₹ 6,023
Air India	17:15	20:05	₹ 6,174
IndiGo	5:55	8:50	₹ 6,267
IndiGo	10:45	13:35	₹ 6,267
IndiGo	14:35	17:30	₹ 6,267
IndiGo	16:00	19:00	₹ 6,267
IndiGo	23:15	2:10	₹ 6,267
IndiGo	8:00	10:55	₹ 6,582
IndiGo	13:05	15:55	₹ 6,582

Fig 5.4 – Excel Report

Stores the scraped data in an Excel file for easy reference as shown in Fig 5.4.

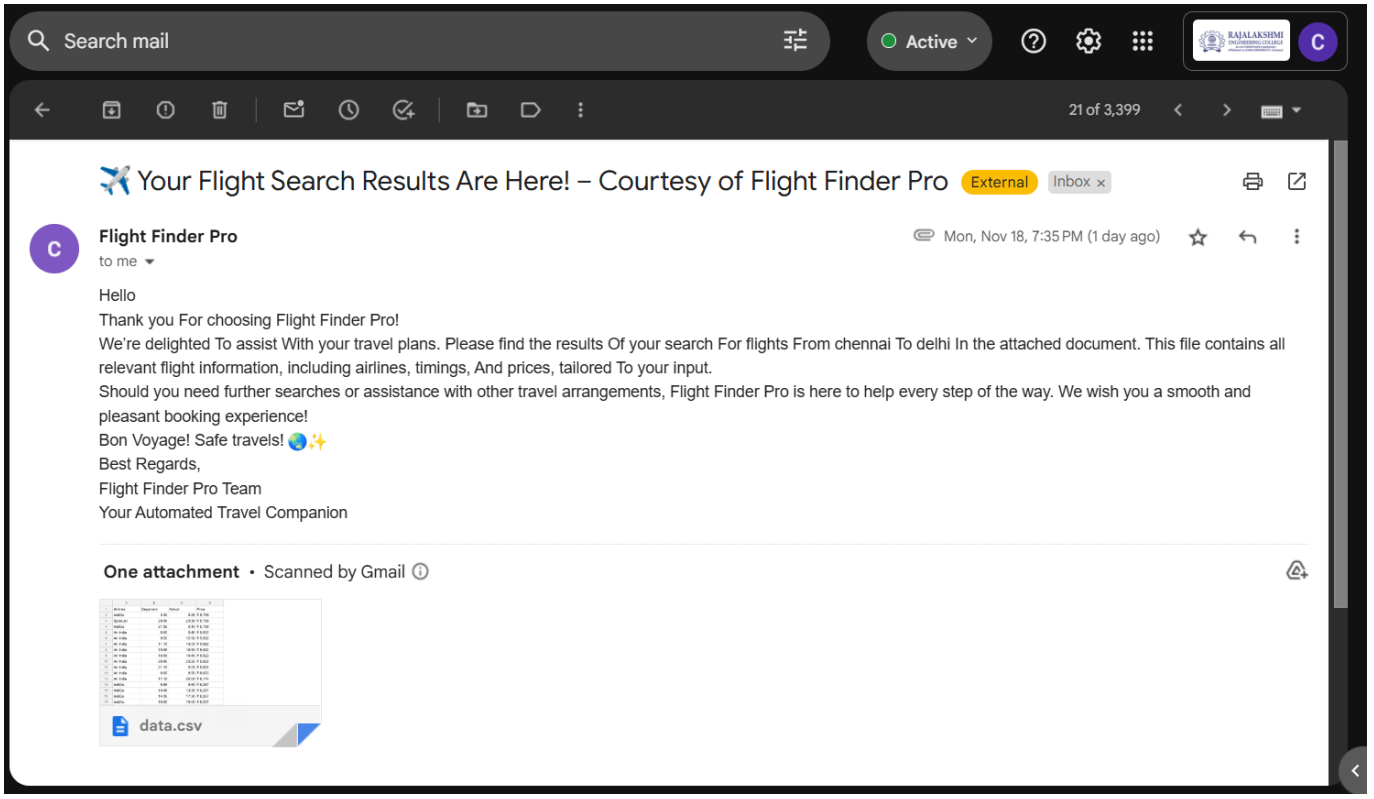


Fig 5.5 – Email automation

Sends an email with the Excel file attached to the user's specified email address as it is shown in Fig 5.5.

CHAPTER 6

CONCLUSION

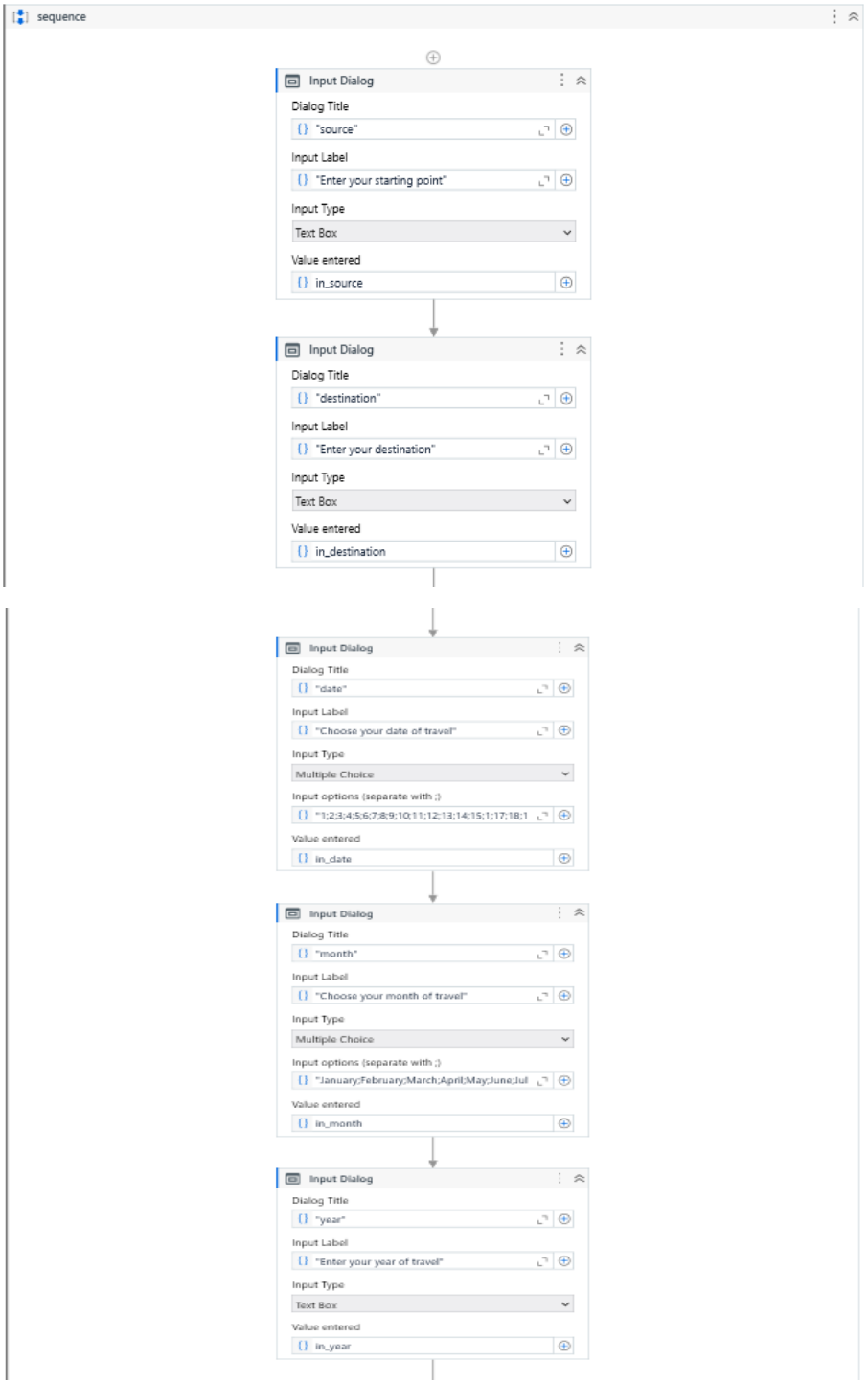
The "Travel Assistant Bot - Flight Finder Pro" project successfully demonstrates the power of Robotic Process Automation (RPA) in simplifying the travel booking process. By leveraging UiPath, this intelligent bot streamlines the task of finding flight details, thus enhancing the travel experience for users. Through the seamless integration of user inputs and flight data retrieval from external sources, the bot ensures that the travel requirements such as source, destination, and travel date are efficiently handled.

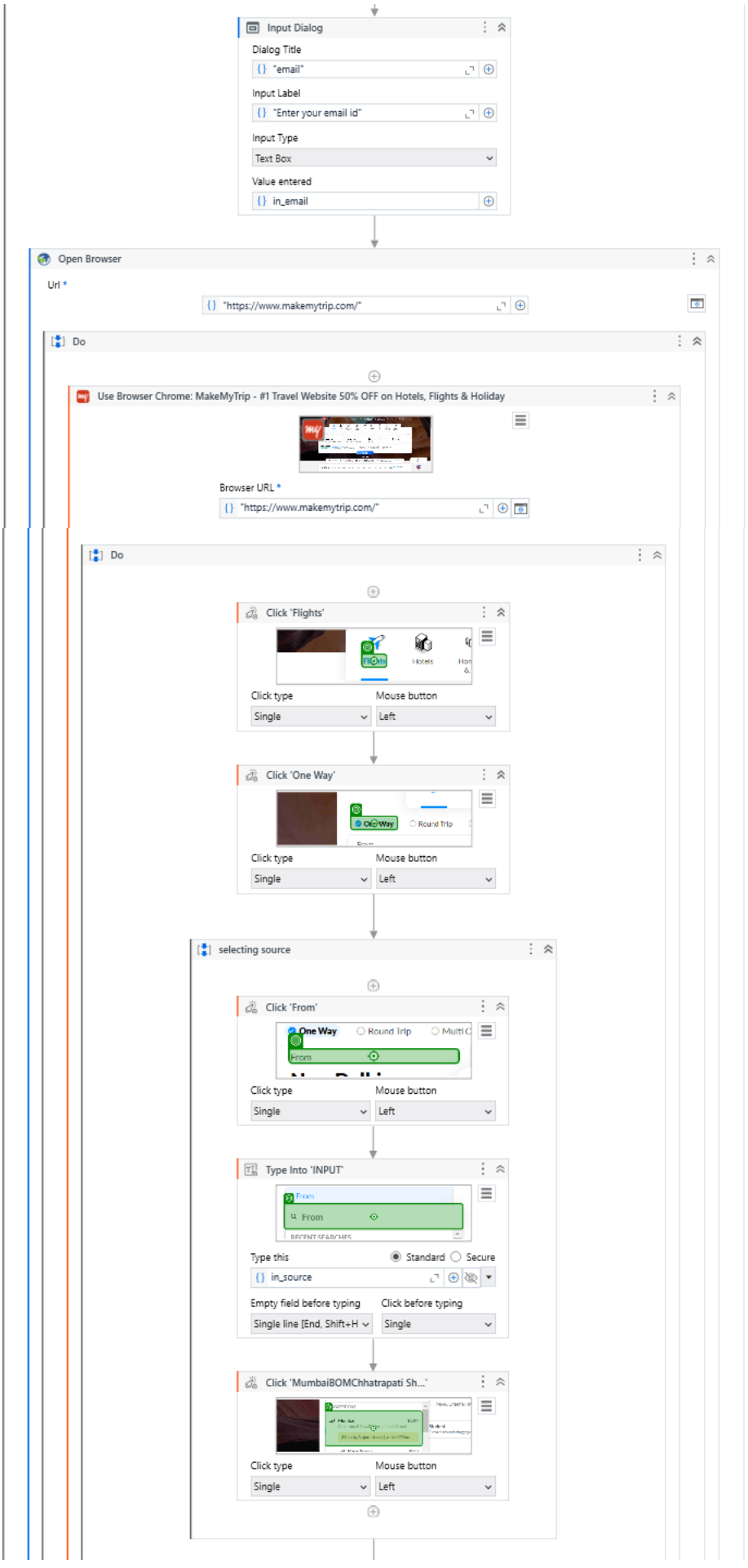
Moreover, the bot's ability to provide real-time updates and offer a user-friendly experience represents a significant step forward in automating travel-related tasks. The Excel report generation further adds value, making the data accessible for future reference.

In conclusion, this project not only demonstrates the practical applications of RPA but also showcases how automation can simplify everyday processes, improve productivity, and provide accurate results in a fast and reliable manner. It opens the door to further enhancements in travel technology, making it an invaluable tool for travelers and travel service providers alike.

APPENDIX

PROCESS WORK FLOW

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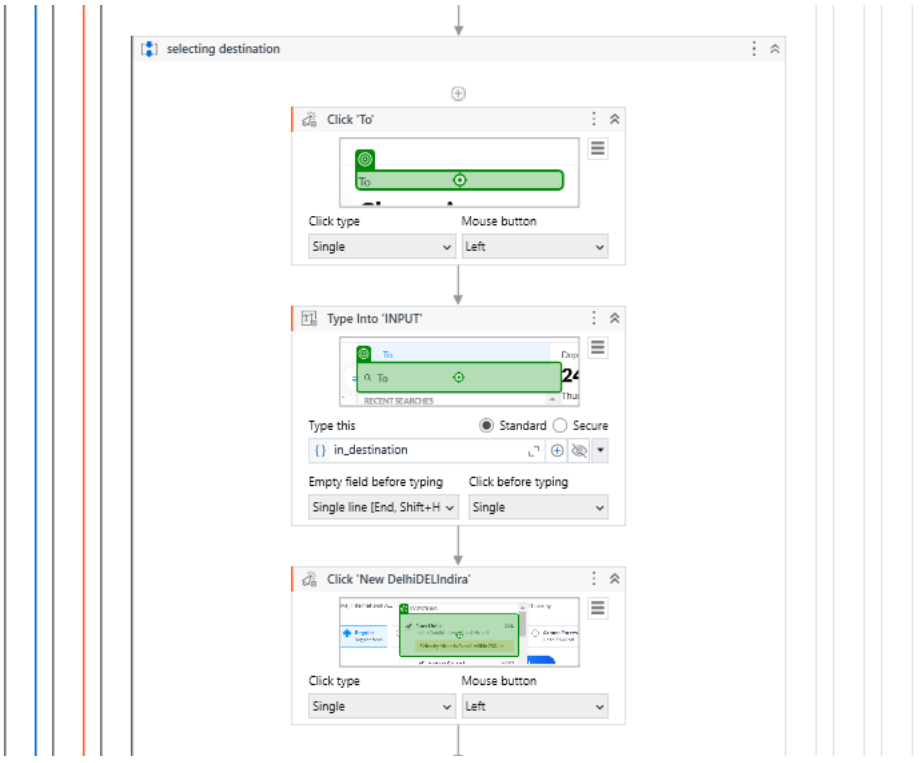
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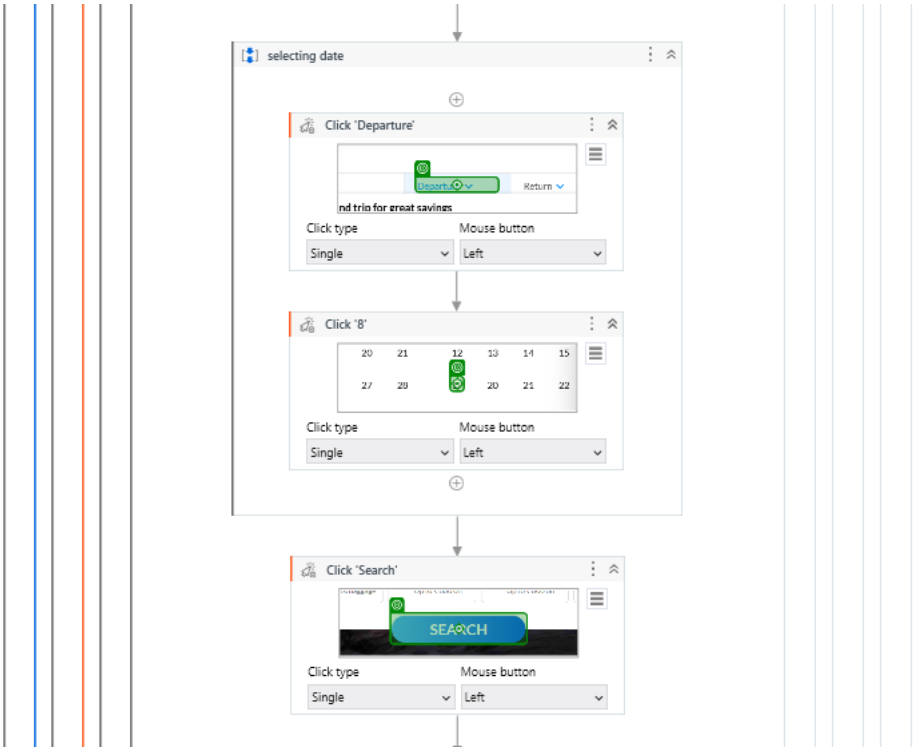
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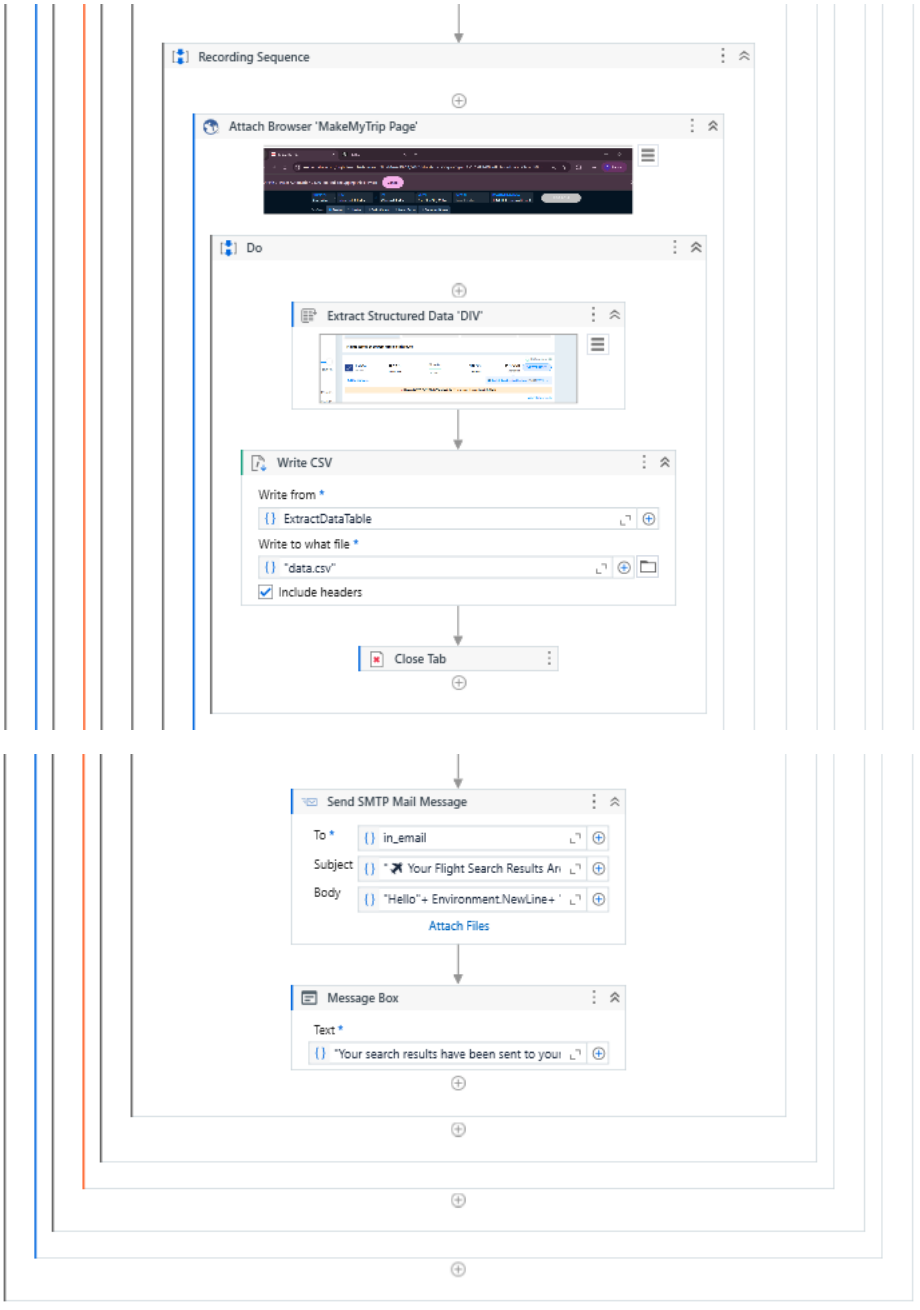
Recording Sequence
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Extract Structured Data 'DIV'
Write CSV
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ExtractDataTable
Write to what file *
"data.csv"
Include headers
Close Tab
Send SMTP Mail Message
To *
in_email
Subject
Your Flight Search Results An
Body
"Hello"+ Environment.NewLine+
Attach Files
Message Box
Text *
"Your search results have been sent to your

REFERENCES

[1] **"Travel Ally Robot Using Robotic Process Automation"**

This study highlights the use of RPA for automating travel booking processes, focusing on input collection, data scraping for flight and hotel details, and email automation. The paper discusses benefits like error-free processes, real-time updates, and improved user experience, closely aligning with your project scope.

Source: International Journal of Research Publication and Reviews, 2023

[2] **"Robotic Process Automation: In-Depth Analysis of Advanced Automation Techniques and Technologies"**

Published by IEEE, this paper explores advanced RPA techniques and their implementation in automating tasks across domains, including travel. It can provide insights into optimizing automation workflows and integrating scalable solutions.

Source: IEEE Xplore

[3] **"Travel Ally Robot Using Robotic Process Automation"**

This study highlights the use of RPA for automating travel booking processes, focusing on input collection, data scraping for flight and hotel details, and email automation. The paper discusses benefits like error-free processes, real-time updates, and improved user experience, closely aligning with your project scope.

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