



# International Journal of Research Publication and Reviews

Journal homepage: [www.ijrpr.com](http://www.ijrpr.com) ISSN 2582-7421

## Travel Ally Robot Using Robotic Process Automation

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### ABSTRACT:

This project is entitled as "TRAVEL ALLY ROBOT USING ROBOTIC PROCESS AUTOMATION". The development of a travel ally robot that shows available flights and hotels details using RPA (Robotic Process Automation) in UiPath is a feasible and practical solution that can streamline the process of finding and booking flights and hotels. The robot can use various RPA techniques such as web scraping, data extraction, and data manipulation to collect and present flight and hotels information to the user. For example, the robot can search for flights on multiple airline websites simultaneously, extract flight information such as flight numbers, departure and arrival times, airline name, duration and prices, and present this information to the user in a table format. The robot then sends the information to the user's email using the Send SMTP Mail Message activity.

**Key Terms:** Travel, email, ally, UiPath, Uinterface.

### I. Introduction

In the fast-paced world live in today, travel has become an integral part of both our personal and professional lives. Whether it's a family vacation or a business trip, the process of booking flights and hotels can be time-consuming and overwhelming. Recognizing the need for a more efficient and user-friendly solution, present Travel Ally Robot, a cutting-edge Robotic Process Automation (RPA) tool developed using UiPath technology. This revolutionary project aims to streamline the process of booking flights and hotels, providing users with a hassle-free experience.

Travel planning often involves juggling multiple tasks, from searching for the best flight options to finding suitable accommodation within budget constraints. With the vast array of options available online, users often face difficulties in comparing prices, tracking bookings, and managing itineraries. Travel Ally Robot aims to address these challenges by automating the entire process, simplifying it for users and saving them valuable time and effort. To ensure a seamless user experience, Travel Ally Robot has been integrated with popular email platforms, enabling users to receive their personalized Excel file directly in their inbox. The robot securely stores user preferences and personal information, eliminating the need for repetitive data entry. Additionally, Travel Ally Robot can generate unique booking reference numbers, making it easier for users to manage their itineraries and communicate with airlines or hotels when necessary. By providing users with a consolidated view of flight and hotel options, Travel Ally Robot simplifies the decision-making process. Users can conveniently compare prices, analyze flight itineraries, and evaluate hotel amenities from a single platform. This not only saves time but also empowers users to make informed choices that align with their travel requirements.

### II. Literature Review

1. The research paper Assessment of the impact of Smartphone Technology on Tour Guide Performance in Kenya written by author "Kabii Francis" in the year of 2019 explains that first, the rapid proliferation of smartphones, tour guides now have access to a wide range of applications and features that can enhance their performance and deliver an enriched experience to tourists.

**Pros:** Smartphone technology provides tour guides with instant access to a vast array of information, including historical facts, cultural insights, and tourist destination details.

**Cons:** The network connectivity, battery life, and device compatibility can hinder the seamless utilization of smartphone technology in remote or underdeveloped areas.

2. The paper Usability Evaluation Metrics of Tourism Mobile Applications written by author "Laily Hashim" in the year of 2019 says that evaluation of usability in mobile applications plays a crucial role in ensuring a positive user experience and maximizing user satisfaction. In the context of tourism mobile applications, usability becomes even more important, as these applications are designed to assist and enhance the travel experience for tourists.

**Pros:** This user-centric approach helps in identifying usability issues and areas for improvement from the users' perspective.

**Cons:** It is important to assess the metrics' effectiveness and reliability through real-world evaluations involving a diverse range of tourism mobile applications and user groups.

3. The paper iTourism Travel Buddy Mobile Application written by "Afiza Ismail, Syed Abdullah, Syed Abdul Kadir" in the year of 2016 the paper provides an overview of the features and functionalities offered by the iTourism Travel Buddy Mobile Application. These include location-based services, personalized itineraries, interactive maps, real-time information updates, augmented reality elements, social media integration, and access to tourist-related content and recommendations. The survey delves into how these features can potentially enhance the usability, engagement, and satisfaction of tourists using the application.

**Pros:** This convenience and accessibility make it easier for tourists to navigate unfamiliar destinations and access relevant information anytime, anywhere.

**Cons:** Technological dependencies or potential issues related to network connectivity or device compatibility.

4. The research paper Flight Reservation System written by author "Abhay Tiwari and Ashima Mehta" in the year of 2023 defines that exposing the relevance and importance of Flight Reservation Systems. It is projected towards enhancing the relationship between customers and Flight agencies through the use of ARSS, and thereby making it convenient for the customers to book the flights as when they require such that they can utilize this software to make reservations.

**Pros:** Flight reservation systems provide users with the convenience of booking flights anytime and anywhere, as long as they have access to the internet.

**Cons:** Online reservation systems may have certain limitations when it comes to making changes to flights, especially for non-refundable or restricted tickets, which can result in additional fees or difficulties.

### III. Proposed Methodology

The proposed system is to automate the flight and hotel booking process by creating a travel ally robot using Robotic process automation (RPA) in UiPath tool. The robot can quickly and accurately search for available flights and hotel based on the user's input criteria, extract relevant information, format it into a user-friendly format, and send it to the user's email address. This eliminates the need for manual searching and reduces the risk of errors or omissions in the flight booking process. The user can simply input their travel preferences and receive a list of available flights in their email, making the flight booking process faster and more convenient. Automation allows for streamlined and error-free processes, real-time updates, scalability, improved efficiency, and customization options, ultimately enhancing the user experience in receiving flight and hotel booking details via email as an Excel file. Benefits of this proposed system are:

- The travel ally robot which saves a lot of time for the user. The bot can quickly search for flights and hotels and generate a comprehensive travel itinerary in a matter of minutes.
- The RPA bot is designed to validate and process the input data with high accuracy, which reduces the chances of errors and inaccuracies in the travel itinerary.

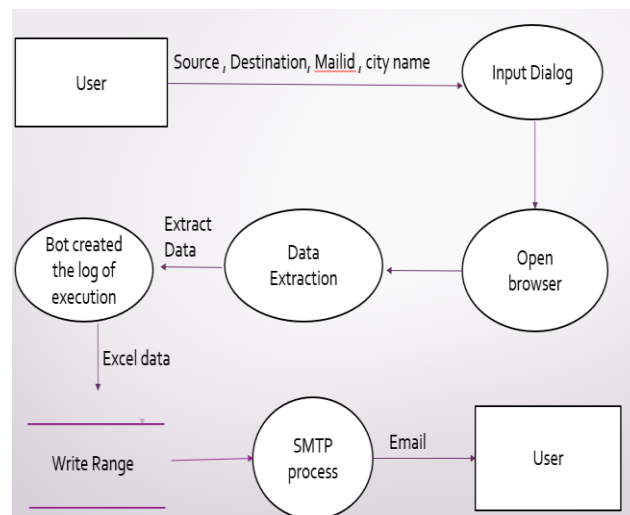


Figure 1: Data Flow Diagram

## IV. Modules

1. **User Interfaces:** User Interface Module refers to the process of Get specific information or data from user or passenger. It involves identifying and isolating the relevant data that meets certain criteria or requirements. User Interface module is use the Input Dialog Activity for Get the User preferred data.

**Input Dialog:** This activity can be used in a wide range of scenarios, from gathering user preferences to dynamically adjusting the behavior of the automation based on user input. When add the Input Dialog activity to workflow, customize it to suit user requirements.

Set the title of the dialog box to provide context to the user, making it clear what information is being requested. user can also specify the prompt message that appears in the dialog box, guiding the user on what input is expected. This helps ensure that users provide the correct information and reduces the likelihood of errors. The Input Dialog activity supports various input types, including text, numbers, and choices. Specify the input type based on user needs. For example, if need the user to enter a text value, Configure the activity to accept text input.

**Flight Details:** For Flight Booking Use the "Input Dialog" activity to create a dialog box for collecting flight booking information. Add a "Label" to display a prompt, such as "Please enter the departure city." Configure the "Input Dialog" activity to store the user's response in a variable. Repeat the above steps for collecting the destination city, travel dates, and passenger count. Store the values in respective variables arrivalCity, departureCity and mailld.

**Hotel Details:** For Hotel Booking Use another "Input Dialog" activity to create a dialog box for collecting hotel booking information. Add a "Label" to display a prompt, such as "Please enter the hotel city". Configure the "Input Dialog" activity to store the user's response in a variable. Add additional "Input Dialog" activities for collecting the check-in date, check-out date, and the number of rooms. Store the values in respective variables city name for user stay. Use the "Input Dialog" activity to collect information from the user. For flight booking, may need details like departure city, destination city. For hotel booking, may require city name.

2. **UI Application:** The "Use Application" activity is a part of the UI Automation activities package. It allows to automate tasks within a specific application by providing a scope for other activities to interact with that application. Inside the "Use Application" activity, can add other activities to automate specific tasks within that application. For example, add activities like "Click," "Type Into," "Get Text," or any other relevant activities to interact with elements within the application. Configure the properties of the activities within the "Use Application" scope based on the specific actions want to perform.

3. **Data Scraping:** In this module, Scraping activity in UiPath is a powerful tool that allows to extract structured data from web pages or applications. It enables to capture tabular data and store it in a structured format, such as a Data Table, for further processing and analysis. Indicate the data want to extract Use the "Extract Structured Data" wizard that appears after adding the "Data Scraping" activity. Select the "Extract Data" option and click "Next." In the browser window, highlight the first instance of the data want to extract. The Data Scraping wizard will detect the surrounding data elements and provide a preview of the extracted data. Adjust the selection as needed to ensure that all relevant data is included, and click "Next".

4. **Excel Automation:** Excel Automation in UiPath allows to interact with Excel files, perform various operations, and automate tasks such as data extraction, manipulation, and reporting. UiPath provides a set of activities specifically designed for Excel automation.

**Read Range:** this activity allows to read data from an Excel file and store it in a Data Table variable. Specify the range of cells to read or read the entire sheet. Write Range this activity, can write data from a Data Table or a specific range of cells into an Excel file. Overwrite existing data or append data to an existing sheet.

**Write Range:** Add the Write Range activity to program workflow by dragging and dropping it from the Activities panel. Specify the Excel file where want to write the booking details. In the Write Range activity, provide the path of the Excel file in the "WorkbookPath" property. Enter the full file path or use a variable. Specify the data range to write, In the "SheetName" property, enter the name of the sheet where want to write the data. If the sheet doesn't exist, it will be created. In the "Range" property, define the cell range where want to write the data. For example, "A1" represents the first cell, "A1:B5" represents a range of cells, and "A:B" represents the entire columns A and B.

5. **Email Automation:** Configure the email details is Specify the email address of the sender in the "From" field. This could be a dedicated email address for booking system or a specific department. Enter the recipient's email address in the "To" field. Programmer can use variables or data retrieved from previous steps to dynamically populate the recipient email addresses. Set the email subject by entering the desired text in the "Subject" field. Include placeholders or variables to personalize the subject line, such as the customer's name or booking reference.

**SMTP Process:** To send SMTP emails in UiPath, can use the "Send SMTP Mail Message" activity. This activity allows to send emails using the Simple Mail Transfer Protocol server. To send SMTP emails for flight and hotel booking in RPA UiPath, can utilize the "Send SMTP Mail Message" activity. This activity allows to automate the process of sending email notifications to customers or relevant stakeholders regarding their flight and hotel bookings. Drag and drop the "Send SMTP Mail Message" activity from the Activities panel to workflow. Configure the SMTP server settings: is in the Properties

pane of the activity, specify the SMTP server address in the "Server" field. This will depend on the email service provider are using. Enter the port number in the "Port" field. If the SMTP server requires authentication, set the "Username" and "Password" fields accordingly.

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## V. Conclusion

Travel Ally Robot using RPA UiPath offers numerous benefits, such as increased efficiency, accuracy, and scalability. By leveraging the power of RPA and utilizing UiPath's automation capabilities, organizations can streamline the Flight and Hotel Booking Process and improve overall Accuracy. The use of the Sequence provides a structured approach, ensuring robustness, error handling, and traceability.

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## VI. Future work

Integrating NLP capabilities into the RPA solution would allow users to interact with the system using natural language. This means they could make bookings or search for flights and hotels by simply speaking or typing their requests in a conversational manner. NLP would enable the RPA bot to understand and interpret user inputs accurately.

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