

HOTEL PRICE SCRAPER

A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

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ABSTRACT

The **Hotel Price Scraper** is a dynamic and efficient web application designed to revolutionize the hotel booking experience by automating the process of comparing prices across multiple platforms. Using advanced web scraping techniques, the application extracts real-time pricing, availability, and key details from popular booking websites based on user-defined criteria, such as destination, travel dates, and budget. The data is then displayed in an intuitive interface, allowing users to filter and sort results by factors like ratings, amenities, and distance from landmarks. With a focus on accuracy, ethical scraping practices, and legal compliance, the project not only simplifies decision-making but also ensures transparency in travel planning. By saving time and offering comprehensive insights, the **Hotel Price Scraper** enhances user convenience and helps secure the best deals, showcasing how technology can optimize the travel industry.

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TABLE OF CONTENTS

CHAPTER NO.	TITLE	PAGE NO.
	ABSTRACT	iii
	LIST OF FIGURES	vi
	LIST OF ABBREVIATIONS	vii
1.	INTRODUCTION	1
	1.1 INTRODUCTION	1
	1.2 OBJECTIVE	3
	1.3 EXISTING SYSTEM	3
	1.4 PROPOSED SYSTEM	4
2.	LITERATURE REVIEW	5
3.	SYSTEM DESIGN	8
	3.1 SYSTEM FLOW DIAGRAM	8
	3.2 ARCHITECTURE DIAGRAM	9
	3.3 SEQUENCE DIAGRAM	10
4.	PROJECT DESCRIPTION	11
	4.1 MODULES	11
	4.1.1. INPUT HANDLING AND INITIALIZATION	11
	4.1.2. ATTENDANCE CHECKING AND VALIDATION	11
	4.1.3. DOCUMENT GENERATION	12
	4.1.4. EMAIL NOTIFICATION	12
5.	OUTPUT SCREENSHOTS	13
6.	CONCLUSION	16
	APPENDIX	17
	REFERENCES	18

LIST OF FIGURES

Figure No.	Figure Name	Page No.
3.1	System Flow Diagram	9
3.2	Architecture Diagram	10
3.3	Sequence Diagram	11

LIST OF ABBREVIATIONS

Abbreviation	Acronym
HPS	Hotel Price Scraper
API	Application Programming Interface
UI	User Interface
DB	Database
HTTP	Hypertext Transfer Protocol
CSS	Cascading Style Sheets
JS	JavaScript
UX	User Experience
DOM	Document Object Model

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The **Hotel Price Scraper** powered by **UiPath RPA** provides a robust and automated solution for aggregating hotel price data from multiple booking platforms. This project utilizes UiPath's powerful automation tools to simulate human interactions with web pages, enabling the extraction of real-time hotel pricing, availability, and related information. By leveraging UiPath's drag-and-drop workflow design and advanced web scraping capabilities, this application eliminates the need for manual browsing, saving time and enhancing accuracy.

The system includes features such as user-defined search criteria (destination, check-in/check-out dates, and budget range), automated data extraction, and structured storage in formats like Excel or CSV for easy analysis. Built with an emphasis on compliance and scalability, the solution ensures ethical and efficient data collection, catering to the dynamic needs of modern travelers.

This UiPath-based **Hotel Price Scraper** demonstrates how RPA can revolutionize travel planning by providing an intelligent, automated, and user-friendly alternative to traditional hotel search methods.

The **Hotel Price Scraper** is a cutting-edge automation solution developed using **UiPath Robotic Process Automation (RPA)**, aimed at transforming how users search for and compare hotel prices online. With the growing complexity of booking platforms and the time-consuming nature of manual searches, this project offers a highly efficient and automated approach to aggregating hotel pricing and availability data from multiple websites. By leveraging UiPath's capabilities in web automation and data extraction, the scraper simulates human interactions with websites to fetch real-time information accurately and quickly.

This solution is designed to accommodate user-specific requirements such as destination, travel dates, budget constraints, and preferred amenities. Using UiPath's intuitive workflows and robust data scraping tools, the system extracts structured information—such as hotel names, ratings, prices, and room details—and organizes it into easily accessible formats like Excel or CSV for comparison. Moreover, the application ensures compliance with ethical web scraping practices and legal guidelines, providing a secure and reliable tool for travelers.

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1.2 OBJECTIVE

The primary objective of the **Hotel Price Scraper** is to develop an automated and efficient solution that simplifies the process of searching, comparing, and analyzing hotel prices from multiple online booking platforms. This project aims to enhance user convenience, save time, and empower decision-making by providing real-time, accurate, and comprehensive data about hotel pricing, availability, and amenities.

1.3 EXISTING SYSTEM

The current process of searching for and comparing hotel prices is largely manual and time-intensive, relying on users to navigate multiple booking platforms individually. Travelers typically input their search criteria, such as destination, check-in/check-out dates, and room preferences, on each website and then compare results across platforms.

1.4 PROPOSED SYSTEM

The Hotel Price Scraper system using UiPath RPA aims to automate the process of extracting hotel pricing information from various online booking websites. The system will begin with user input where criteria such as destination, check-in/check-out dates, number of guests, and room preferences are specified. UiPath will automate the navigation of booking websites, scraping relevant data like hotel names, locations, prices, ratings, and amenities using data scraping techniques. Once the data is extracted, it will be cleaned, formatted, and stored in a structured format, such as Excel or a database. The system will generate reports or charts summarizing the prices and hotel features, offering users a comparison of different options based on their preferences. This system will improve efficiency by automating repetitive tasks, ensure accurate and consistent data extraction, and provide users with a convenient and customizable way to gather and analyze hotel pricing information. Additionally, future enhancements could include advanced AI/ML techniques for better layout recognition, price trend monitoring, and API integrations with third-party travel platforms.

CHAPTER 2

LITERATURE REVIEW

2.1 Survey on Robotic Process Automation (RPA) in Hotel Price Scraping:

Robotic Process Automation (RPA) is increasingly being adopted in various industries to automate repetitive tasks, and the hospitality sector is no exception. In hotel price scraping, RPA has shown significant promise in automating the process of gathering price data from multiple online booking platforms. By utilizing RPA, the manual tasks of checking, comparing, and reporting prices are streamlined, allowing businesses to make real-time, data-driven decisions. However, the widespread adoption of RPA in this domain faces challenges, such as website integration, handling dynamic page elements, and maintaining accuracy in the face of fluctuating prices. Relevant research papers related to RPA in hotel price scraping include: [1] A study explores how RPA can optimize competitive price monitoring in the hospitality industry, discussing how it automates the process of checking multiple hotel rates and updating internal pricing systems. This research highlights how automation can enhance pricing strategies and increase competitiveness in the market. [2] A paper from the Journal of Hospitality Management discusses RPA's potential in automating pricing data extraction from various hotel booking websites. The study underlines the time-saving and cost-efficiency benefits of RPA, especially for small to medium-sized hotels seeking to stay competitive in a crowded market.

2.2 Survey on Automation in Price Monitoring Systems:

Automation in price monitoring systems, particularly in the hospitality industry, focuses on reducing the effort required for businesses to track hotel prices across various platforms. RPA and web scraping technologies can collect and process price

data automatically, ensuring accuracy and timely updates. Despite its benefits, challenges remain, particularly in ensuring data integrity, dealing with dynamic content, and managing large volumes of data. [1] Research highlights how RPA tools can automate the process of price comparison, enabling businesses to monitor competitor rates and adjust their pricing strategies accordingly. This improves decision-making while reducing the manual effort involved. [2] A study examines how RPA is integrated into hotel price monitoring systems to provide real-time updates and improve the efficiency of pricing processes. It concludes that automation not only increases efficiency but also enhances the accuracy of pricing data collected across various platforms.

2.3 Survey on Challenges in Hotel Price Scraping and Proposed Integration with RPA:

Hotel price scraping continues to pose challenges, such as fluctuating pricing data, dynamic content on websites, and the complexity of integrating data from different sources. These issues can lead to inefficiencies and errors in data collection. Research in this area emphasizes the need for automation to overcome these hurdles by providing a more accurate and scalable solution. [1] A study reviews the challenges associated with traditional hotel price tracking, such as manual data entry and errors in price reporting. It advocates for the use of automated scraping systems to enhance the accuracy and speed of data collection, enabling hotels to stay competitive. [2] A paper explores the limitations of current hotel price monitoring tools and highlights how RPA can address issues like dynamic page elements and fluctuating rates. It emphasizes the role of automation in improving data reliability and ensuring consistent updates for businesses.

2.4 Summary of the Intersection of RPA and Hotel Price Scraping:

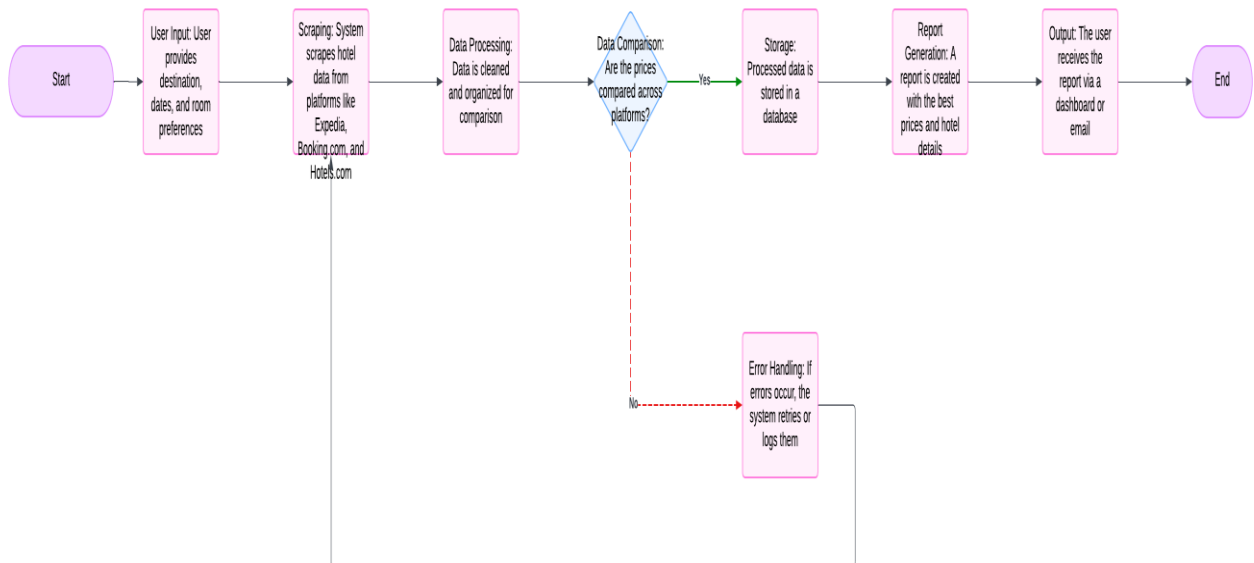
The "Hotel Price Scraper" project integrates RPA technology to automate the process of scraping hotel pricing data from various online booking platforms. This system collects price data, compares rates across different websites, and stores it for further analysis or reporting. The RPA tool also handles the complexities of dynamic web content, ensuring accurate and timely data extraction with minimal human intervention. By bridging the gap between traditional manual methods and modern automation, the project addresses the inefficiencies in price monitoring and provides a robust, scalable, and cost-effective solution for the hospitality industry. This integration of RPA in hotel price scraping highlights the potential for automation to transform the way hotels track pricing and improve their competitive strategies.

CHAPTER 3

SYSTEM DESIGN

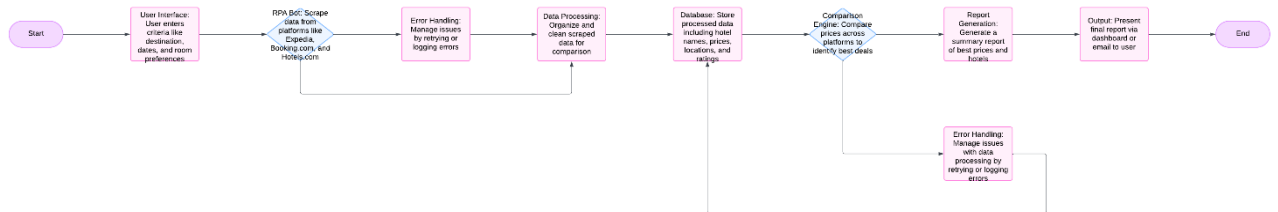
3.1 SYSTEM FLOW DIAGRAM

The hotel price scraper project begins with the user inputting essential criteria, such as the destination, check-in/check-out dates, and room preferences. Using this information, the system scrapes hotel pricing data from various online booking platforms like Expedia, Booking.com, and Hotels.com. The scraped data includes hotel names, prices, locations, and ratings. Once the data is collected, it is processed and organized for comparison. The system then compares the prices from different platforms to identify the best options for the user.



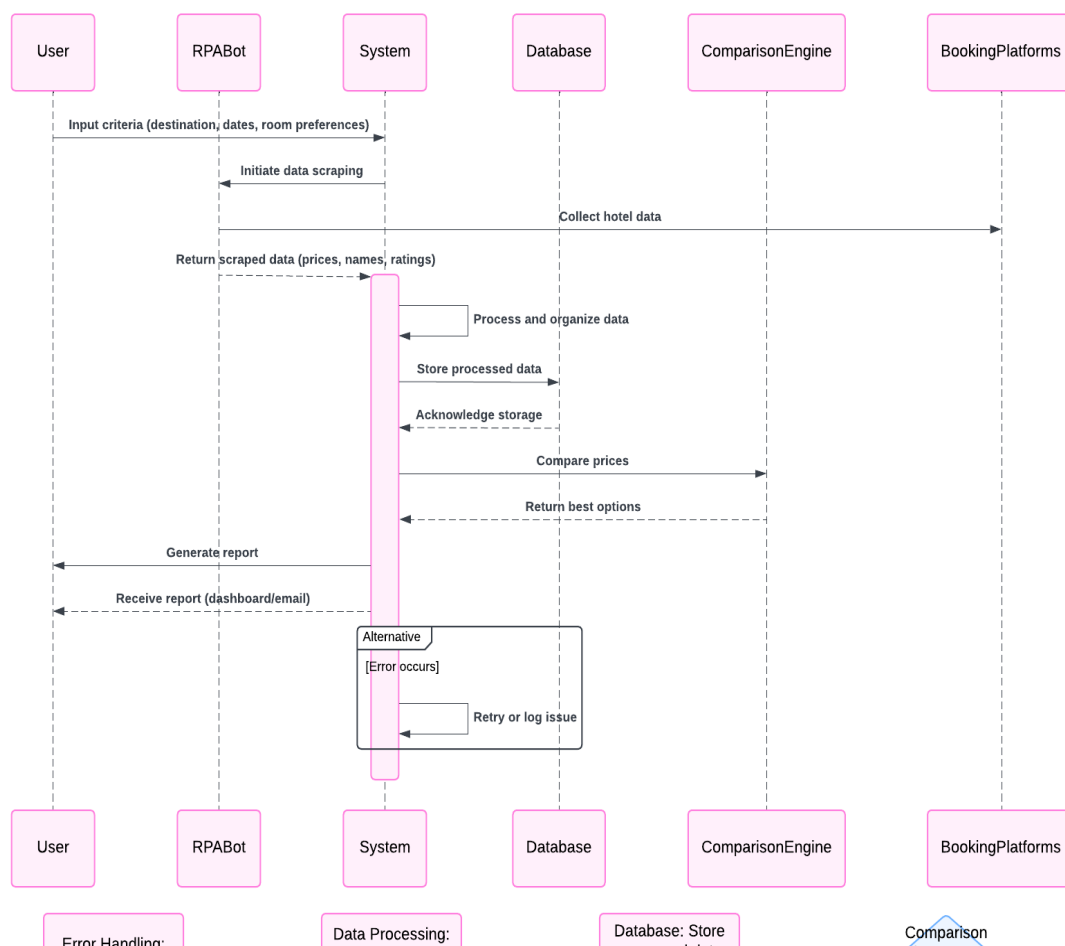
3.2 ARCHITECTURE DIAGRAM

The architecture of the hotel price scraper project consists of several key components. The **User Interface** allows the user to input criteria like destination, dates, and room preferences. The **RPA Bot** is responsible for scraping hotel data from various platforms like Expedia, Booking.com, and Hotels.com. After data is scraped, the **Data Processing** module organizes and cleans the information for comparison. The processed data is then stored in a **Database**, which holds details such as hotel names, prices, locations, and ratings.



3.3 SEQUENCE DIAGRAM

The sequence of operations in the hotel price scraper project begins with the **User Input** phase, where the user provides essential criteria such as destination, check-in/check-out dates, and room preferences through the user interface. Once the input is received, the **RPA Bot** is triggered to scrape data from multiple online booking platforms like Expedia, Booking.com, and Hotels.com. After scraping, the **Data Processing** component organizes and cleans the data, extracting relevant details such as hotel names, prices, locations, and ratings.



CHAPTER 4

PROJECT DESCRIPTION

The **Hotel Price Scraper** project is an automation solution designed to help users find the best hotel prices across multiple online booking platforms using Robotic Process Automation (RPA). The system allows users to input criteria such as destination, check-in/check-out dates, and room preferences. Once the input is provided, an RPA bot scrapes hotel price data from websites like Expedia, Booking.com, and Hotels.com

4.1 MODULES:

4.1.1. INPUT HANDLING AND INITIALIZATION:

4.1.1.1. User Input:

- Receive user input for hotel search criteria, including destination, check-in/check-out dates, and room preferences.

4.1.1.2. Platform Selection:

- Allow the user to select which platforms to scrape (e.g., Expedia, Booking.com, Hotels.com).

4.1.2. SCRAPING AND DATA EXTRACTION:

4.1.2.1. Web Scraping:

- Use RPA bots to scrape hotel data, including prices, hotel names, ratings, and locations from the selected booking platforms.

4.1.2.2. Data Validation:

- Validate the scraped data to ensure that it includes accurate pricing and hotel details.
- Check for missing or incorrect data fields and handle exceptions.

4.1.3. DATA COMPARISON AND ANALYSIS:

4.1.3.1. Price Comparison:

- Compare hotel prices across platforms to identify the best available options based on user input.

4.1.3.2. Filter and Sort Results:

- Filter the data based on user preferences (e.g., price range, hotel rating) and sort the results for easy analysis.

4.1.4. REPORT GENERATION:

4.1.4.1. Report Creation:

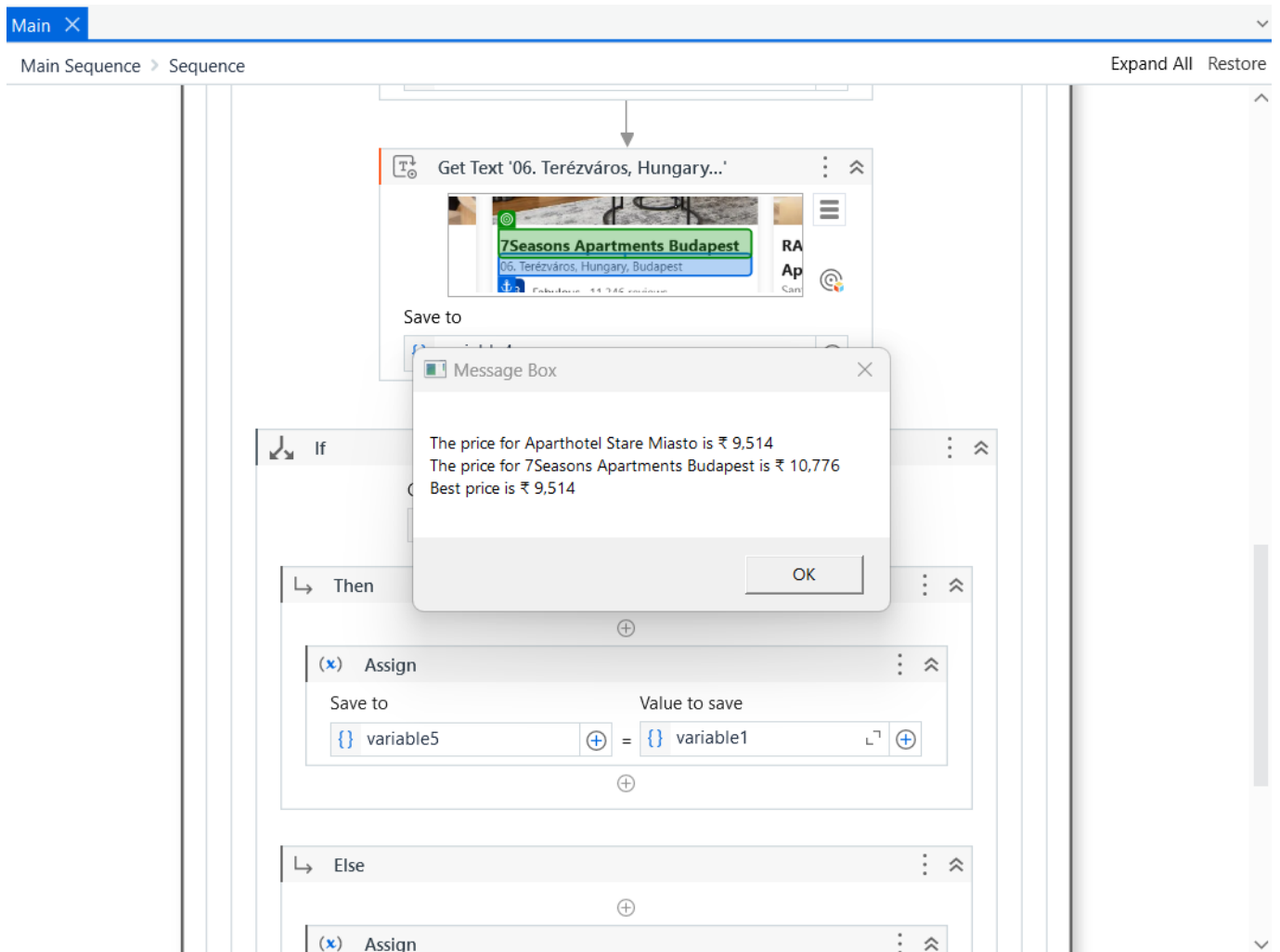
- Generate a summary report that includes the best hotel options, their prices, locations, and ratings.

4.1.4.2. PDF Generation:

- Convert the generated report into a PDF format for easy sharing and viewing

CHAPTER 5

OUTPUT SCREENSHOTS



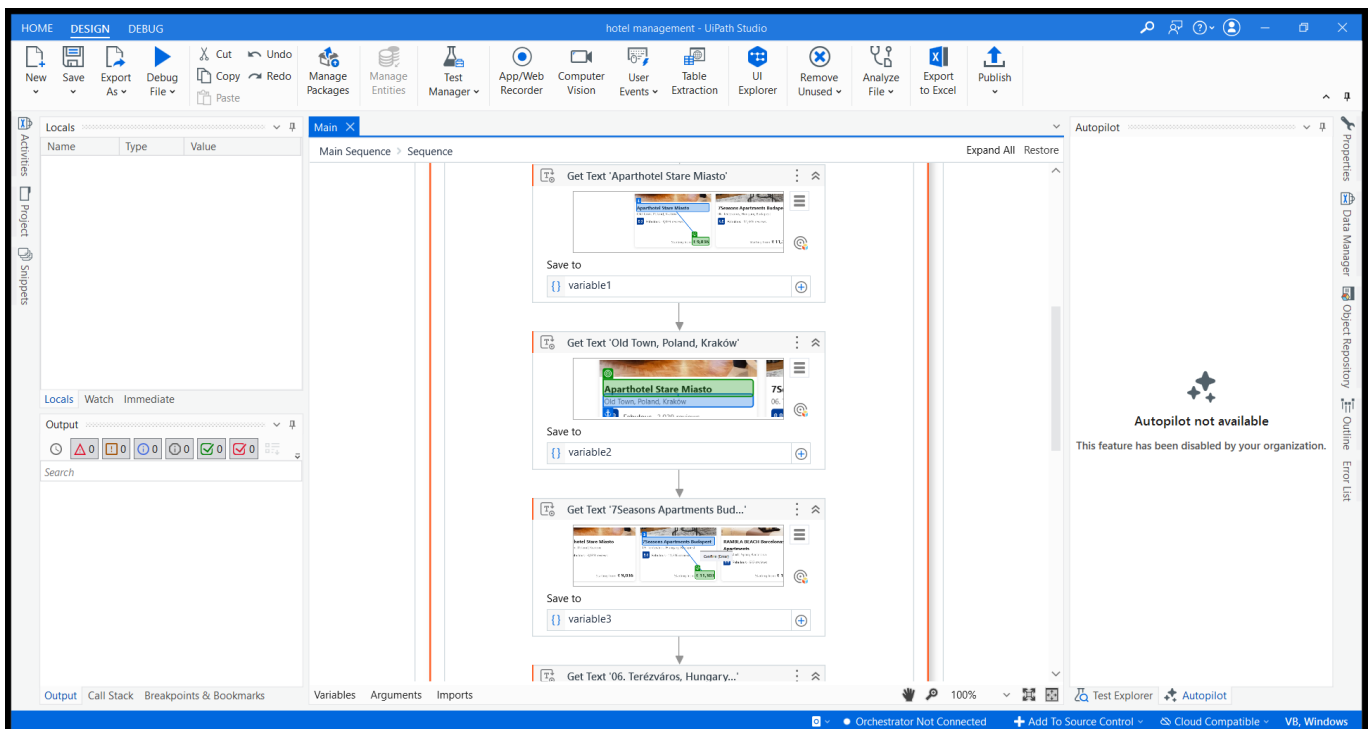
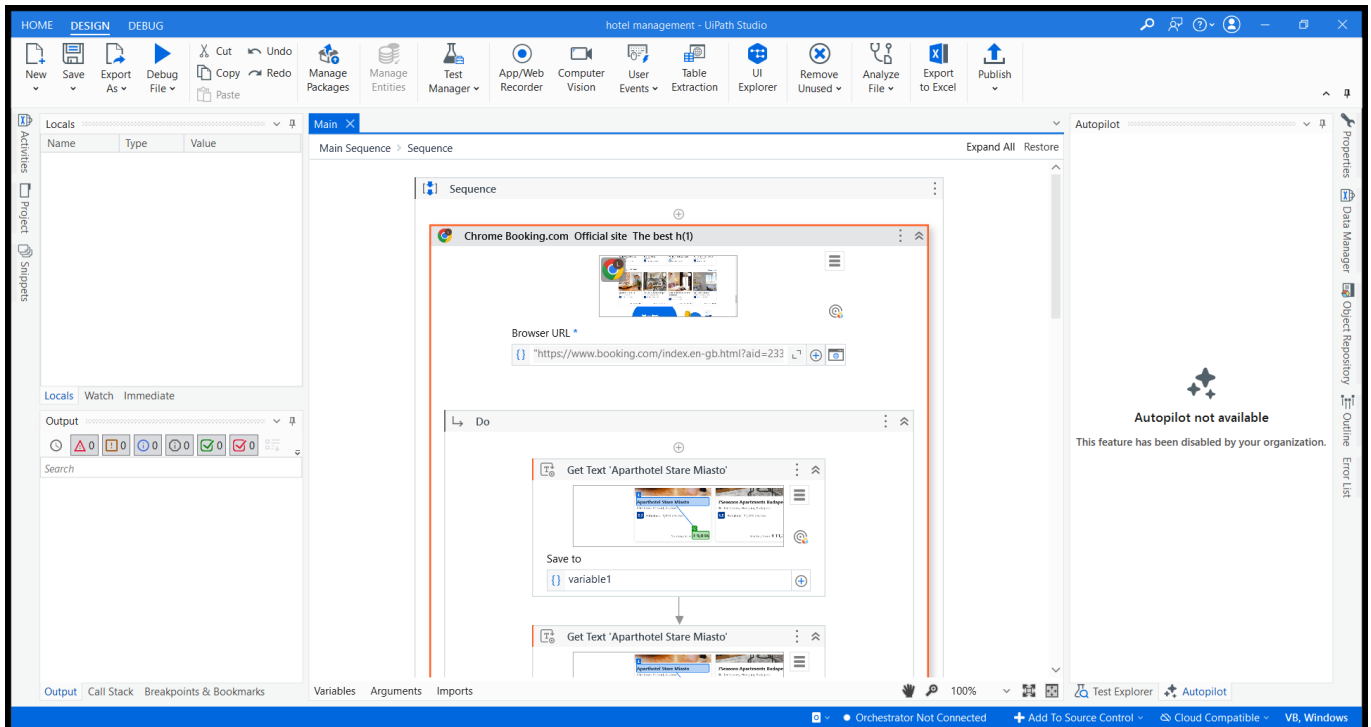
CHAPTER 6

CONCLUSION

In conclusion, the **Hotel Price Scraper** project leverages Robotic Process Automation (RPA) to streamline the process of comparing hotel prices across multiple online booking platforms, offering users an efficient and automated solution for finding the best deals. By scraping data from platforms like Expedia, Booking.com, and Hotels.com, the system provides users with real-time pricing, hotel details, and ratings, all in one place. Through data validation, comparison, and report generation, the project ensures accurate and up-to-date information. The integration of email notifications further enhances user experience, delivering personalized reports directly to their inbox. Ultimately, this project reduces the time and effort traditionally spent manually comparing hotel prices, providing users with a faster, more reliable way to book accommodations. By automating this process, the system not only increases efficiency but also serves as a scalable solution that can easily adapt to future needs and expand to additional platforms or features.

APPENDIX

PROCESS WORK FLOW



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