

MEDICINE PRICE COMPARISON AND AUTOMATION BOT

A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report “**MEDICINE PRICE COMPARISON AND AUTOMATION BOT**” is the bonafide work of “**GOPINATH R (220701076)**” who carried out the project work for the subject OAI1903 - Introduction to Robotic Process Automation under my supervision.

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ABSTRACT

The "Medicine Price Comparison and Automation Bot" is an innovative solution developed using UiPath to automate the extraction and management of medicine prices from a single pharmacy website. The bot begins by retrieving a list of medicines from a pre-saved Excel file, ensuring a structured and organized input process. It then navigates to the pharmacy website and performs a search for each medicine, extracting the corresponding price details. The scraped data is sorted, validated, and stored in a dynamically generated Excel file for easy reference. To enhance usability and convenience, the bot automatically emails the generated price report to the user's specified email account upon completion. This automation not only reduces manual intervention but also minimizes the risk of errors, offering a reliable and efficient way to track medicine prices. The project highlights the capabilities of UiPath in handling repetitive tasks and demonstrates its ability in decision making in medicine price system.

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LIST OF ABBREVIATIONS

ABBREVIATION	ACCRONYM
RPA	Robotic Process Automation
URL	Uniform Resource Locator
MM/dd/yyyy	Excel Application Scope
EPS	Excel Process Scope

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Automation is revolutionizing processes across various domains, enhancing operational efficiency and minimizing manual intervention. The "Medicine Price Comparison and Automation Bot" project leverages Robotic Process Automation (RPA) using UiPath to automate the process of extracting and managing medicine prices from a single pharmacy website. This solution streamlines the task of price analysis by ensuring accuracy, speed, and reliability in obtaining the lowest prices for medicines listed in an Excel file.

Tracking medicine prices is an essential yet time-consuming task in both personal and professional contexts. Traditionally, this process involves manually searching for medicines, recording prices, and organizing the data—a tedious process prone to errors and inefficiencies. By adopting automation, these challenges can be overcome to ensure consistent and error-free results. This project presents an automated approach to reduce manual effort and improve the overall workflow of price comparison and management.

1.2 OBJECTIVE

The primary objective of this project is to automate the extraction, sorting, and email distribution of medicine prices from a single pharmacy website. The bot retrieves medicine names from an Excel sheet, searches for them on the website, scrapes their prices, and organizes the data into a new Excel file. It then automates the process of sending the updated price list to the user's email account, providing a seamless and efficient solution.

1.3 EXISTING SYSTEM

The current approach to tracking medicine prices is manual, requiring users to individually search for medicines on websites, note their prices, and organize them into a document. This method is not only time-intensive but also susceptible to errors and inconsistencies. Moreover, it lacks scalability, making it inefficient for managing a large number of medicines.

1.4 PROPOSED SYSTEM

The proposed system introduces a fully automated solution using UiPath to handle the entire process of price comparison. It reads a list of medicines from an Excel file, performs a search on the pharmacy website, and extracts their prices. The bot organizes the data into a newly generated Excel file and sends it to the user's email account. UiPath's RE Framework ensures reliability, error handling, and scalability, making the system robust and efficient. This project eliminates manual effort, enhances accuracy, and delivers a timely and organized price comparison report.

CHAPTER 2

LITERATURE REVIEW

INTRODUCTION

The healthcare and pharmaceutical sectors are increasingly leveraging automation technologies to streamline operations. This literature review explores existing research and methodologies relevant to automated price comparison systems, focusing specifically on projects that integrate data scraping and automation for efficient and accurate price tracking.

EVOLUTION OF PRICE COMPARISON SYSTEMS

Understanding the evolution of price comparison is essential to appreciate the role of automation. Traditional methods involved manually checking prices on websites, which was time-intensive and error-prone. The emergence of automated price comparison tools enabled faster and more consistent data collection, but initial systems lacked advanced features like sorting, real-time updates, and error handling.

AUTOMATION TECHNOLOGIES IN PRICE COMPARISON

Automation technologies have revolutionized price comparison processes, enabling efficient data extraction and analysis. Tools like UiPath and Selenium facilitate the scraping of real-time data from websites, ensuring accuracy and scalability. Studies highlight the role of automation in reducing processing time .

USER-CENTRIC PRICE MONITORING

Modern price comparison systems prioritize user convenience and data reliability. Research indicates a growing demand for systems that integrate seamlessly with user workflows, such as retrieving input from Excel files and delivering organized reports via email. Systems with features like automatic sorting and filtering enhance usability, aligning with user expectations.

CASE STUDIES IN AUTOMATED PRICE COMPARISON

Examining existing projects in automated price comparison reveals successful implementations and challenges. Case studies demonstrate how leveraging Robotic Process Automation (RPA) for data scraping and processing has improved efficiency and accuracy. For instance, integrating RPA with structured frameworks like UiPath's RE Framework provides robust error handling and scalability, essential for projects involving real-time web data.

USER EXPERIENCE AND INTERFACE DESIGN

Research underscores the importance of intuitive interfaces and seamless workflows in price comparison systems. Simple yet powerful designs that facilitate inputs, display clear outputs, and offer automation insights contribute to user satisfaction. For example, integrating email-based reporting ensures the user has easy access to actionable data without additional steps.

CHALLENGES IN AUTOMATED PRICE COMPARISON

While automated music recommendation systems offer advantages, challenges exist such as algorithmic bias, information overload, and ethical considerations in content scraping. Addressing these challenges is crucial to developing robust systems that prioritize accuracy, fairness, and user satisfaction.

FUTURE DIRECTIONS AND INNOVATIONS

Future advancements in price comparison systems lie in integrating advanced technologies like machine learning for predictive analytics and Natural Language Processing (NLP) for better data interpretation. These innovations can help systems offer deeper insights, such as price trends and optimal purchasing times, ensuring users make informed decisions.

CONCLUSION

This literature review highlights the evolution, benefits, challenges, and future opportunities in automated price comparison systems. By examining existing research and technologies, it lays a foundation for building efficient and innovative systems like the "Medicine Price Comparison and Automation Bot," ensuring accuracy, reliability, and user-centric design in price tracking.

CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

A flowchart is a diagram that visually represents an algorithm, workflow, or process. It depicts steps as various types of boxes, with arrows connecting them to show the order in which these steps occur. This diagrammatic representation serves as a solution model to a specific problem. The system flow diagram for the "Medicine Price Comparison Bot" project is shown 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.

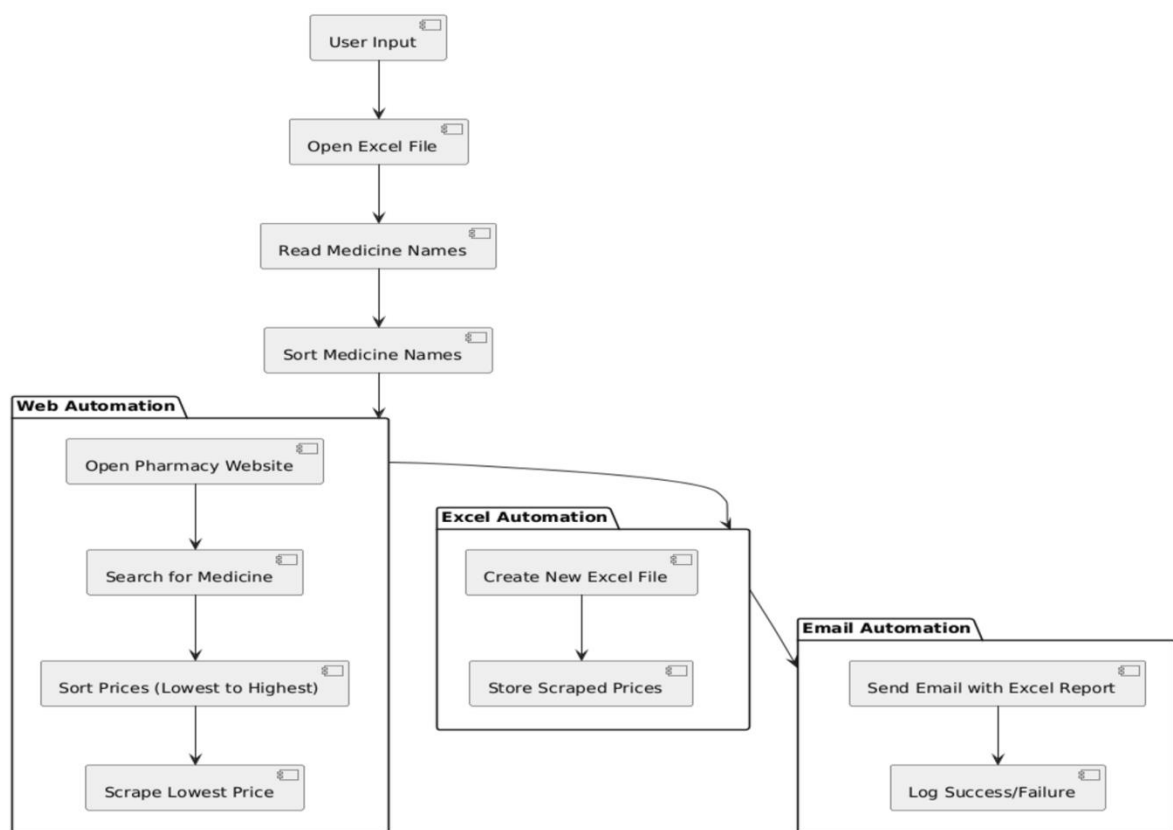


Fig 3.2 Architecture Diagram

3.3. SEQUENCE DIAGRAM

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

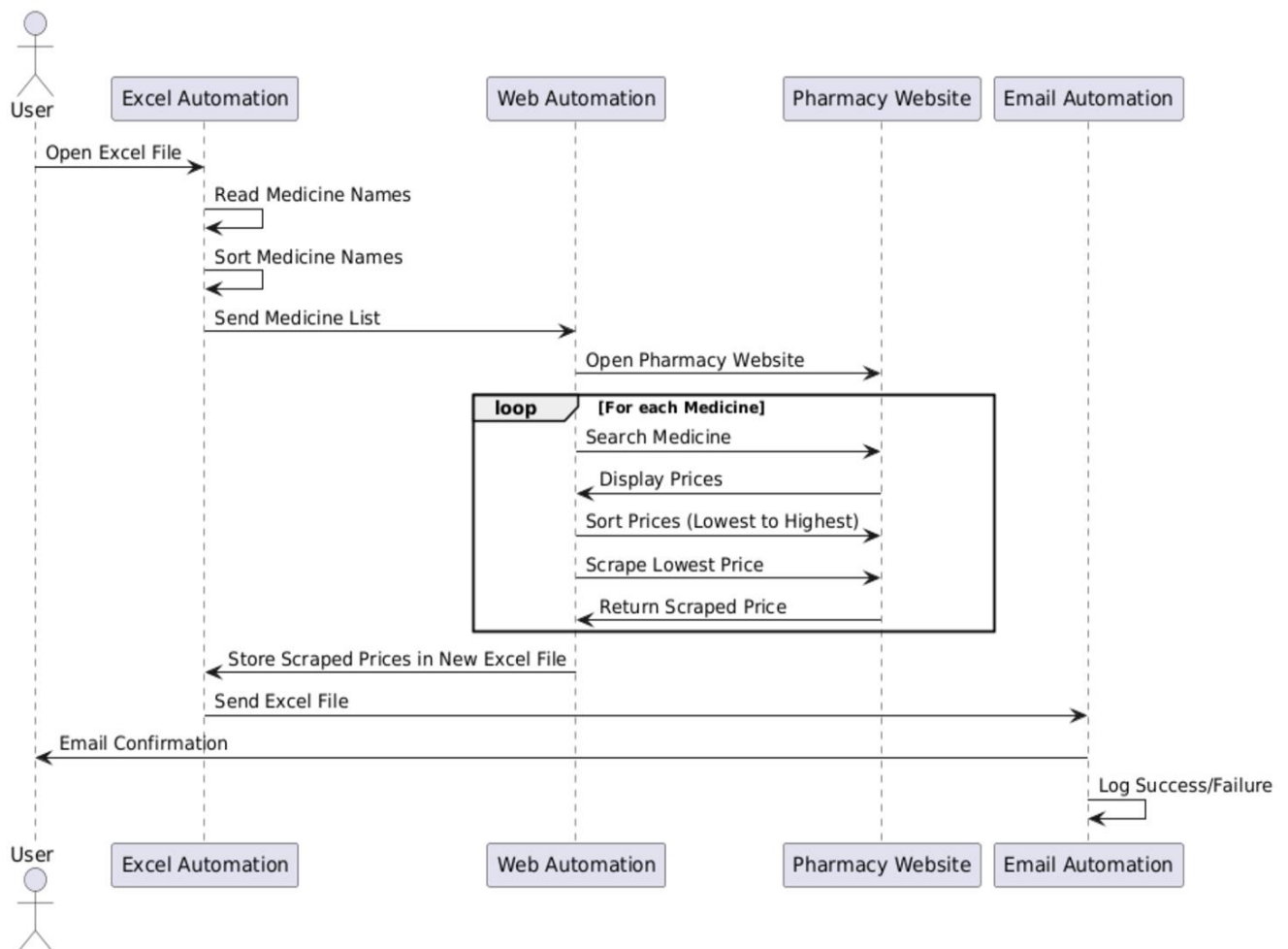


Fig 3.3 Sequence Diagram

CHAPTER 4

PROJECT DESCRIPTION

"The Medicine Price Comparison and Automation Bot" is an innovative Robotic Process Automation (RPA) project developed using UiPath to streamline the process of comparing medicine prices across online pharmacies. The bot automates the extraction, validation, and management of medicine price data, providing users with accurate and up-to-date pricing information. By leveraging automation, this bot minimizes manual intervention and enhances decision-making in pharmaceutical price management.

4.1. MODULES:

4.1.1. INPUT HANDLING AND INITIALIZATION:

4.1.1.1. Medicine List Input:

- Accept a list of medicines from a pre-saved Excel file to be processed.

4.1.1.2. Website Selection:

- Specify the pharmacy website for price extraction.

4.1.2 WEBSITE INTERACTION:

4.1.2.1 Medicine Search and Price Extraction:

- Search for each medicine from the list on the selected pharmacy website.
- Automatically extract the price.

4.1.3 RESULT MANAGEMENT:

4.1.3.1 Data sorting and Storage:

- Sort the price and stores in excel
- Automatically email the generated price report to the user.

4.1.3.2 History Maintenance:

- Maintains record of past price comparisons.

CHAPTER 5

OUTPUT SCREENSHOTS

Name	Status	Date modified	Type	Size
.entities	✓	18-11-2024 06:05 PM	File folder	
.local	☁	19-11-2024 01:29 PM	File folder	
.objects	✓	18-11-2024 10:49 PM	File folder	
.project	✓	19-11-2024 01:05 PM	File folder	
.screenshots	✓	19-11-2024 09:48 AM	File folder	
.settings	✓	18-11-2024 06:05 PM	File folder	
.storage	✓	18-11-2024 10:53 PM	File folder	
.templates	✓	18-11-2024 06:05 PM	File folder	
.tmh	✓	18-11-2024 06:05 PM	File folder	
ChromeOnlinePharmacyIndiaBuyMedicinesf	✓	19-11-2024 12:30 PM	Windows.XamlDocu...	32 KB
Main	✓	19-11-2024 01:22 PM	Windows.XamlDocu...	14 KB
project	✓	18-11-2024 06:05 PM	JSON Source File	2 KB
Medicine_list	🔄	19-11-2024 01:23 PM	Microsoft Excel Work...	10 KB

Fig 5.1 Project Folder

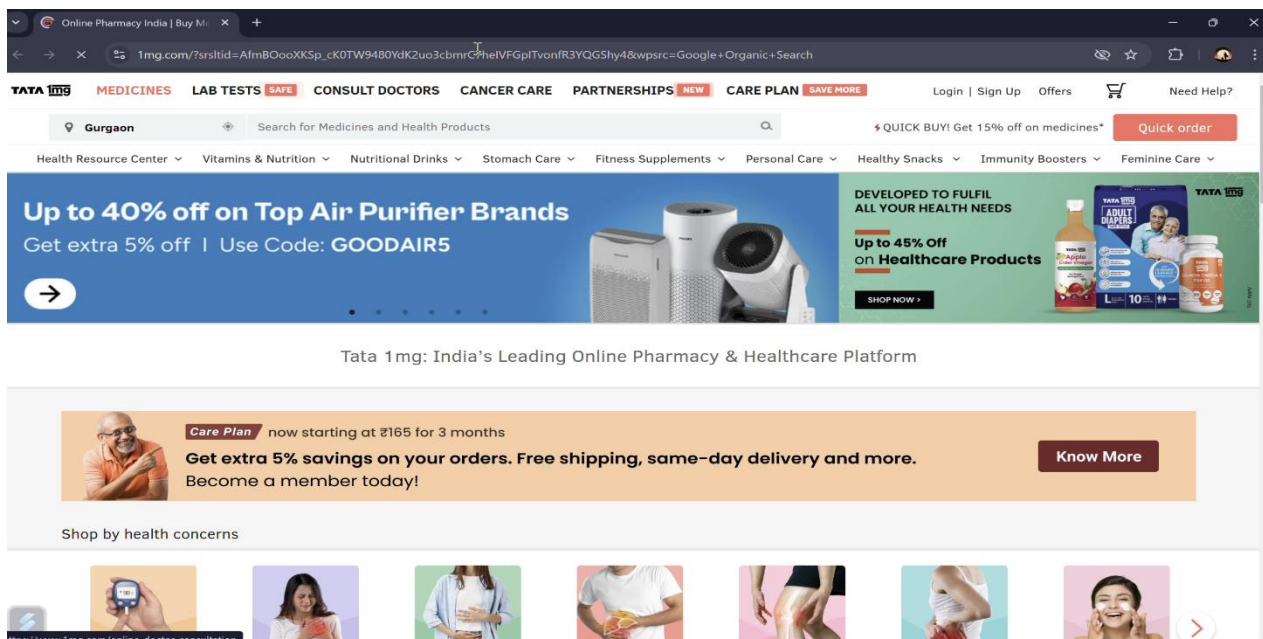


Fig 5.2. Opens Pharmacy website

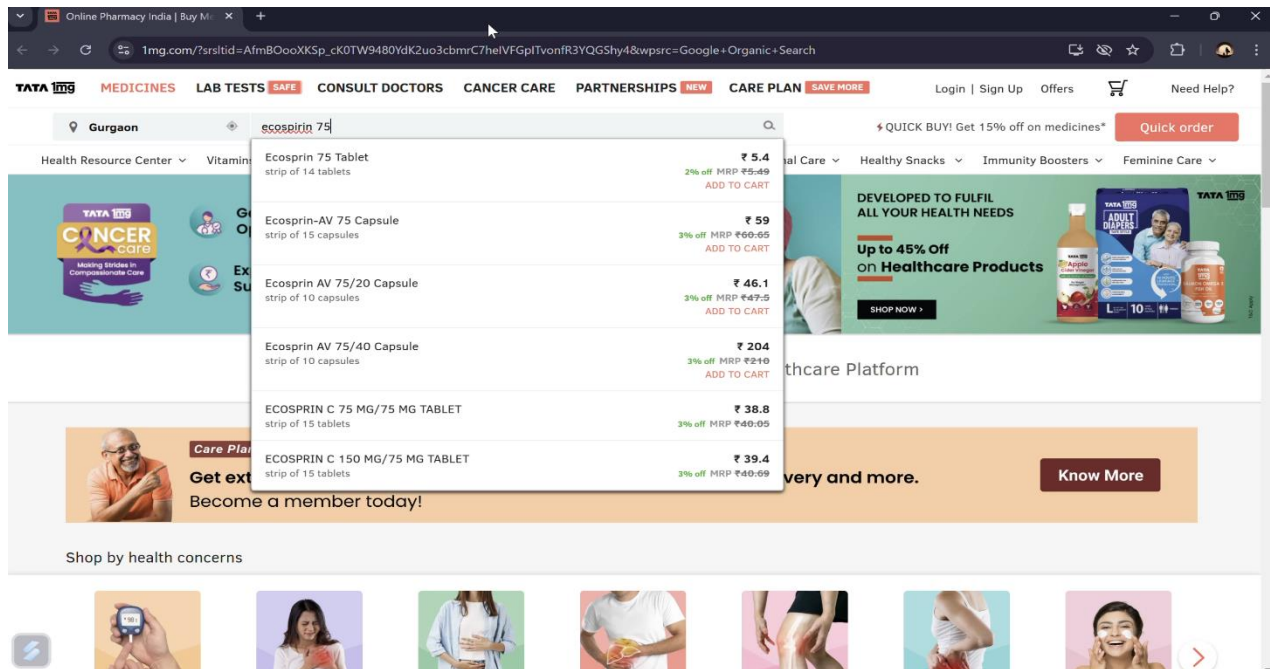


Fig 5.3. Medicine names search

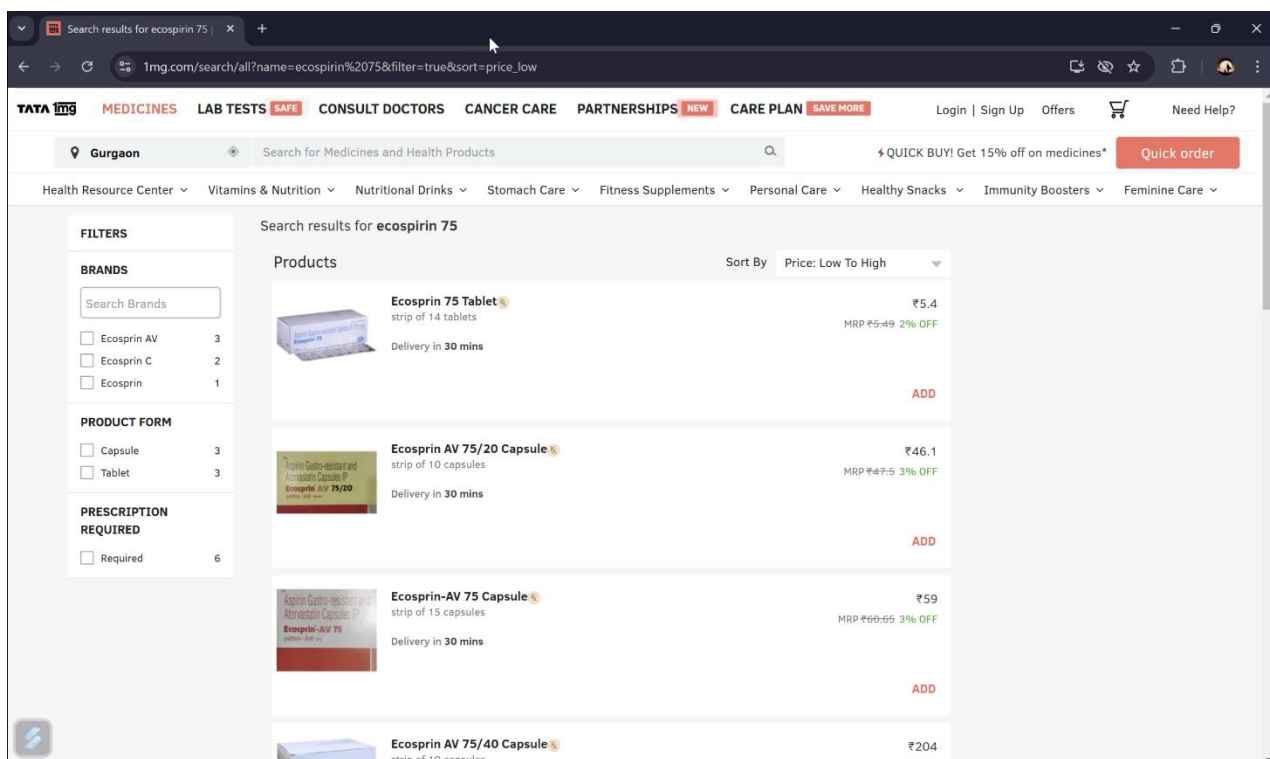


Fig 5.4 Price sorting from low to high

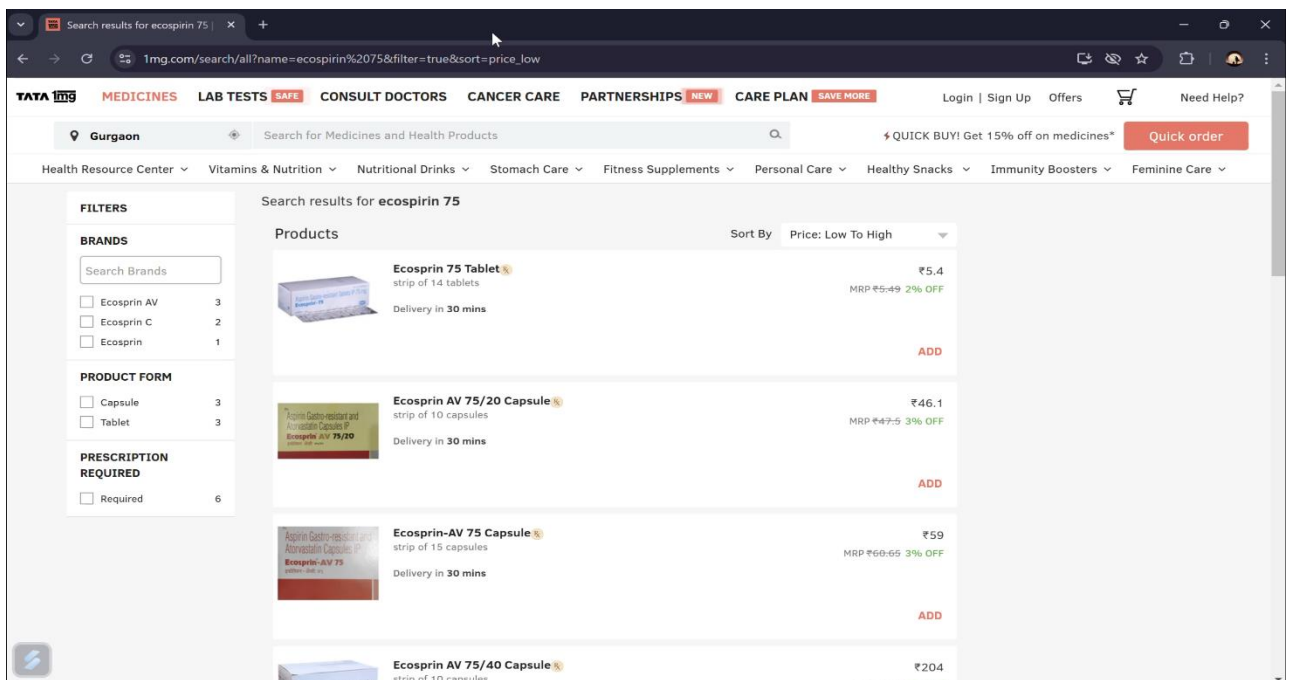


Fig 5.5 Low Price scraping

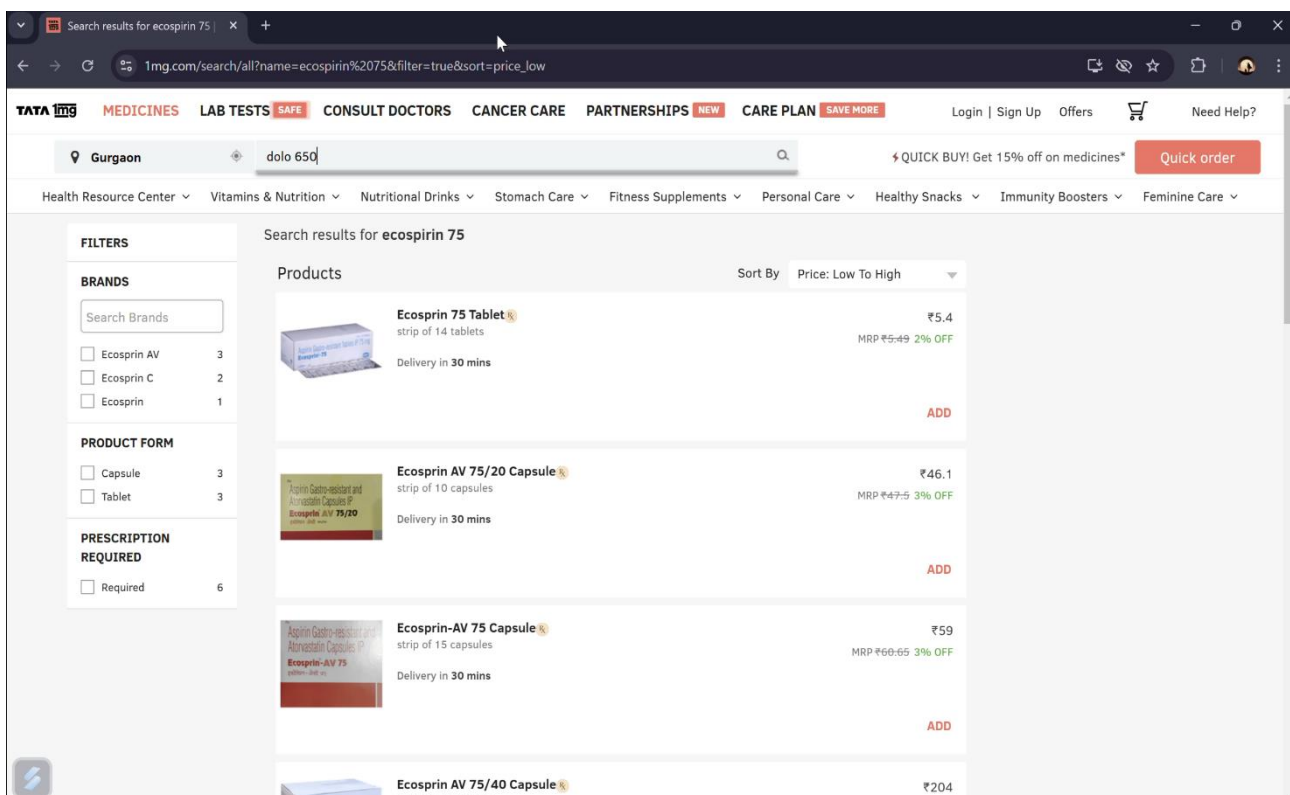


Fig 5.6 Next Medicine search from an excel

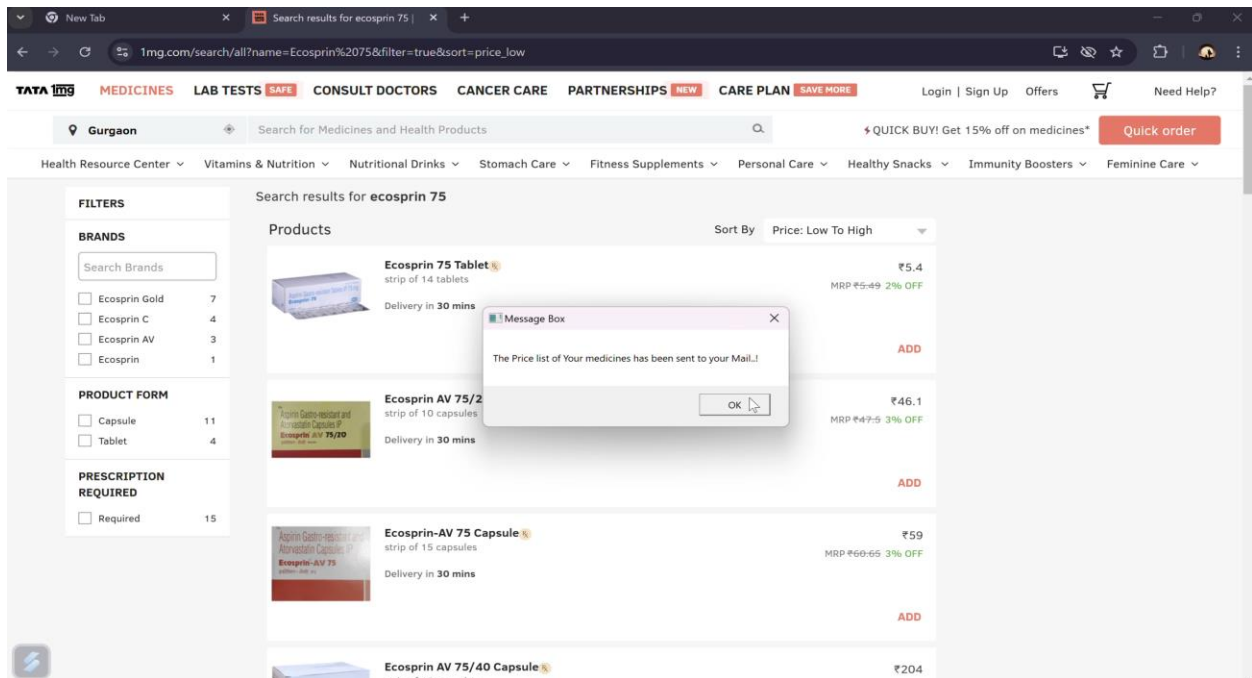
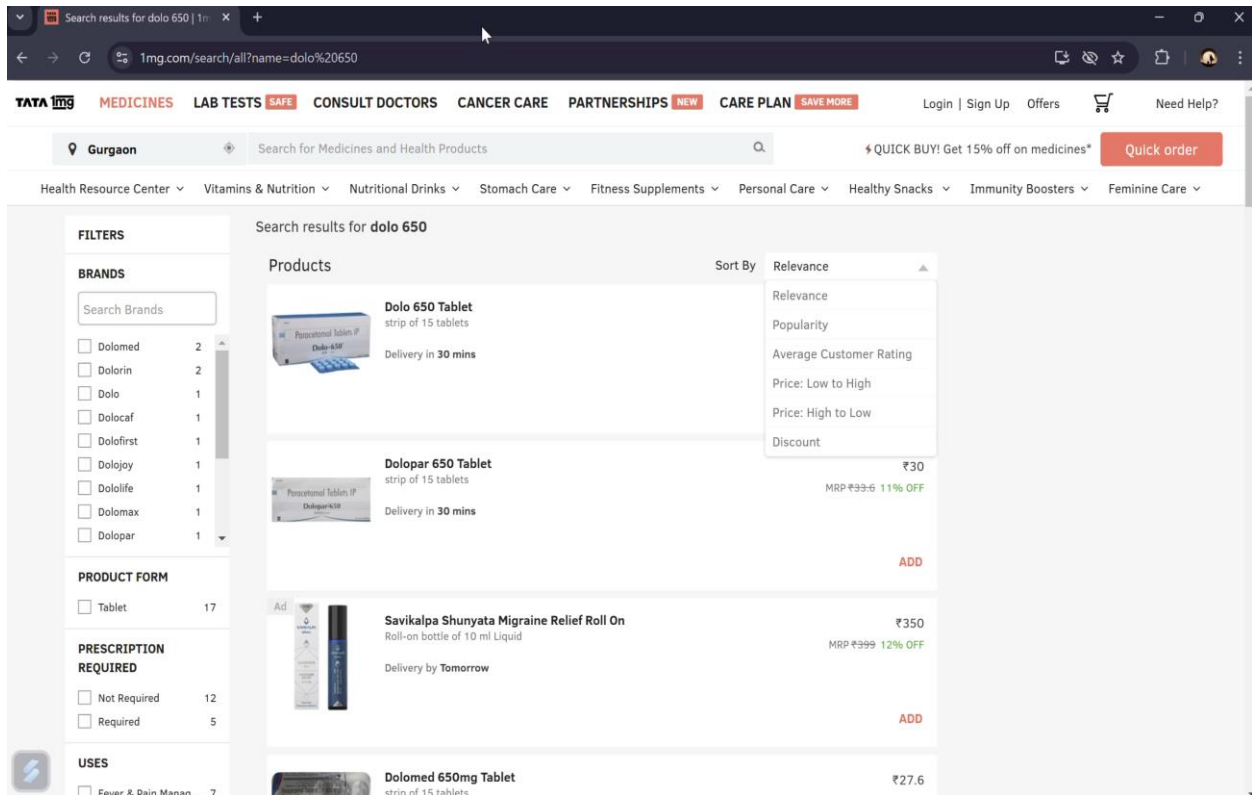
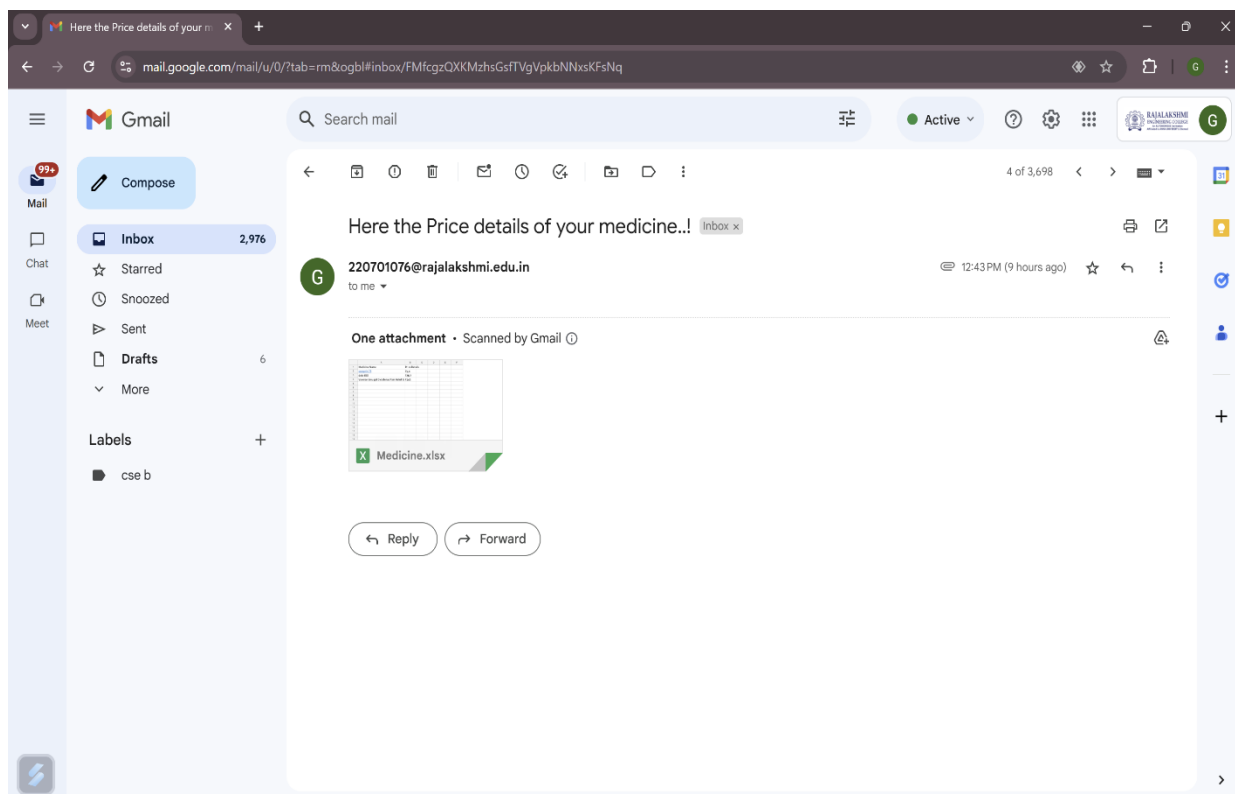


Fig 5.7 Message Box of mail sent to user.



X Medicine.xlsx						
	A	B	C	D	E	F
1	Medicine Name	Price Details				
2	ecosprin 75	₹5.4				
3	dolo 650	₹28.7				
4	Voveran Emulgel Diclofenac Pain Relief Gel	₹145				
5						
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Fig 5.8 Excel sheet Sent and its detail

CHAPTER 6

CONCLUSION

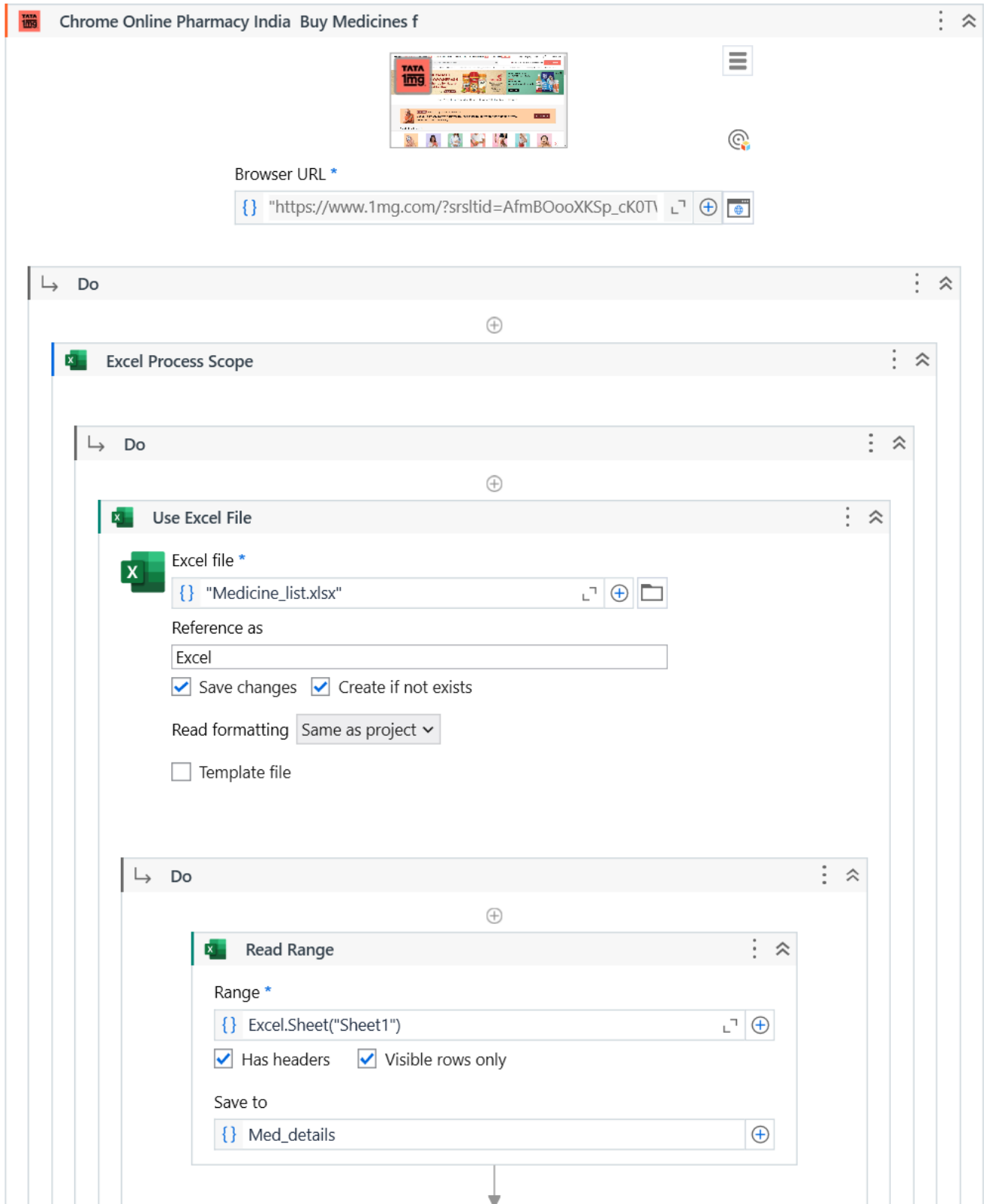
"The Medicine Price Comparison and Automation Bot" enhances pharmaceutical price management by leveraging UiPath's Robotic Process Automation (RPA) to automate the extraction and comparison of medicine prices across online pharmacy websites. This innovative solution streamlines the process of retrieving accurate and up-to-date pricing information, reducing manual effort and improving decision-making for users.

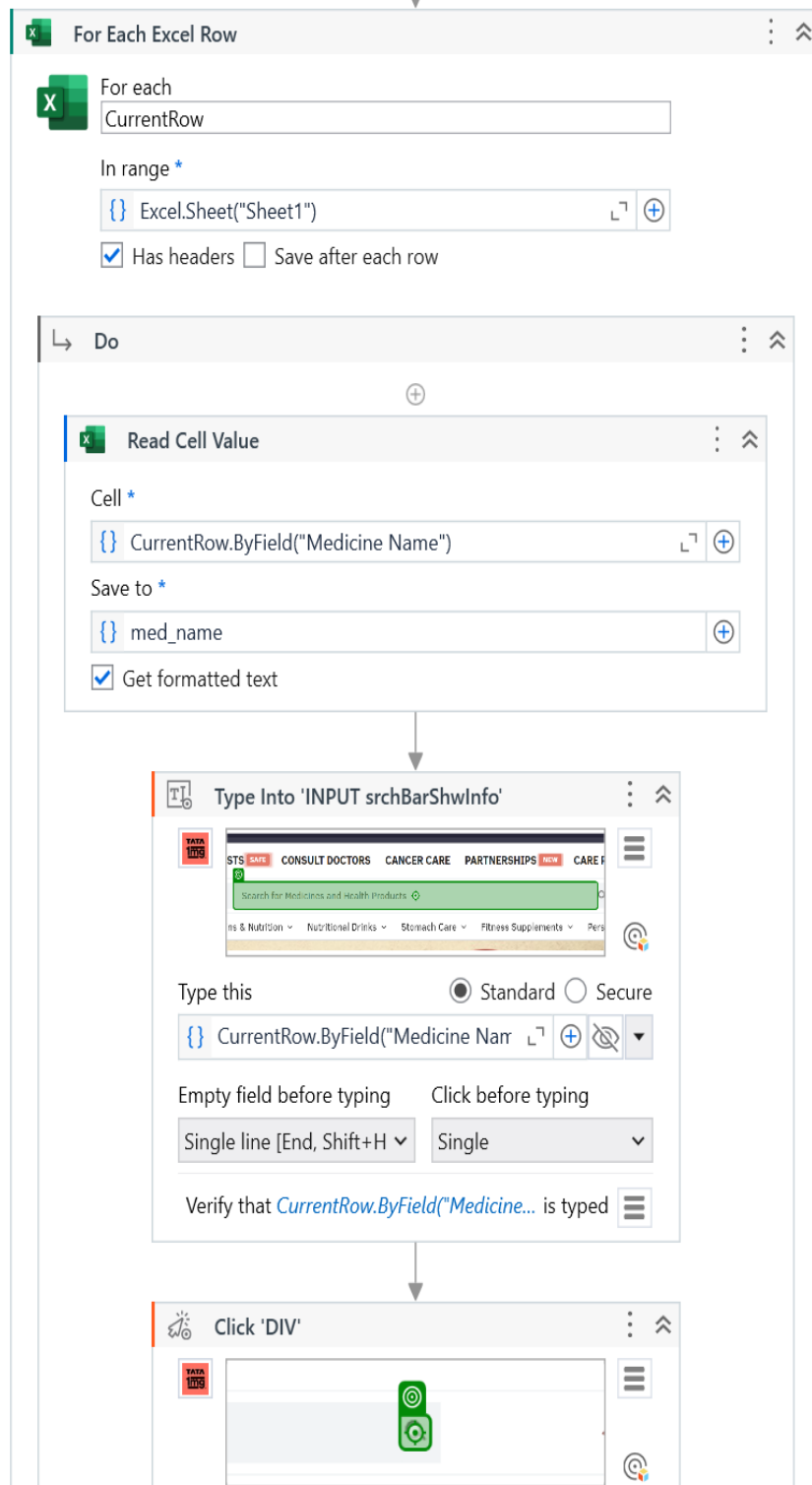
The bot's ability to automatically search, validate, and store price data, followed by generating and emailing reports, ensures a reliable and efficient process. While it excels in automating repetitive tasks, challenges may arise in handling inconsistencies in website formats or data extraction errors. Regular updates and improvements to data validation methods will be essential to maintain its accuracy and reliability.

The successful implementation of this bot highlights the potential of RPA in transforming how pharmaceutical pricing is managed and monitored. This sets a strong foundation for further advancements in automating and optimizing price comparison systems in the future.

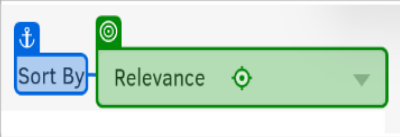
APPENDIX

PROCESS WORK FLOW





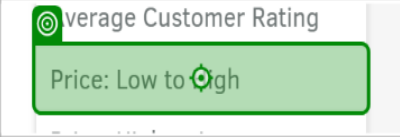
Click 'Relevance'



Click type: Single
Mouse button: Left

Indicate verification target on screen

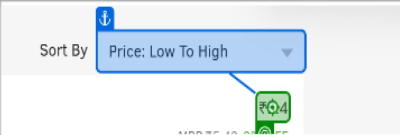
Click 'Price Low to High'



Click type: Single
Mouse button: Left




Indicate verification target on screen

Get Text '₹28'






Save to: `CurrentRow.ByField("Price Details").StringValue`



↓

 **Log Message**  




Message *


 "Medicine name supplied"  


Log Level

Info  

↓



 **Use Gmail**  


 Account




rajagokul231@gmail.com 

Reference as




Gmail

↳ Do  






 **Send Email**  




Account

 Gmail  




To

 "220701076@rajalakshmi.edu.in"  




Cc

 Cc  

Subject






 "Price details"  


Body ☐ HTML ☒ Text ☐ Word Document

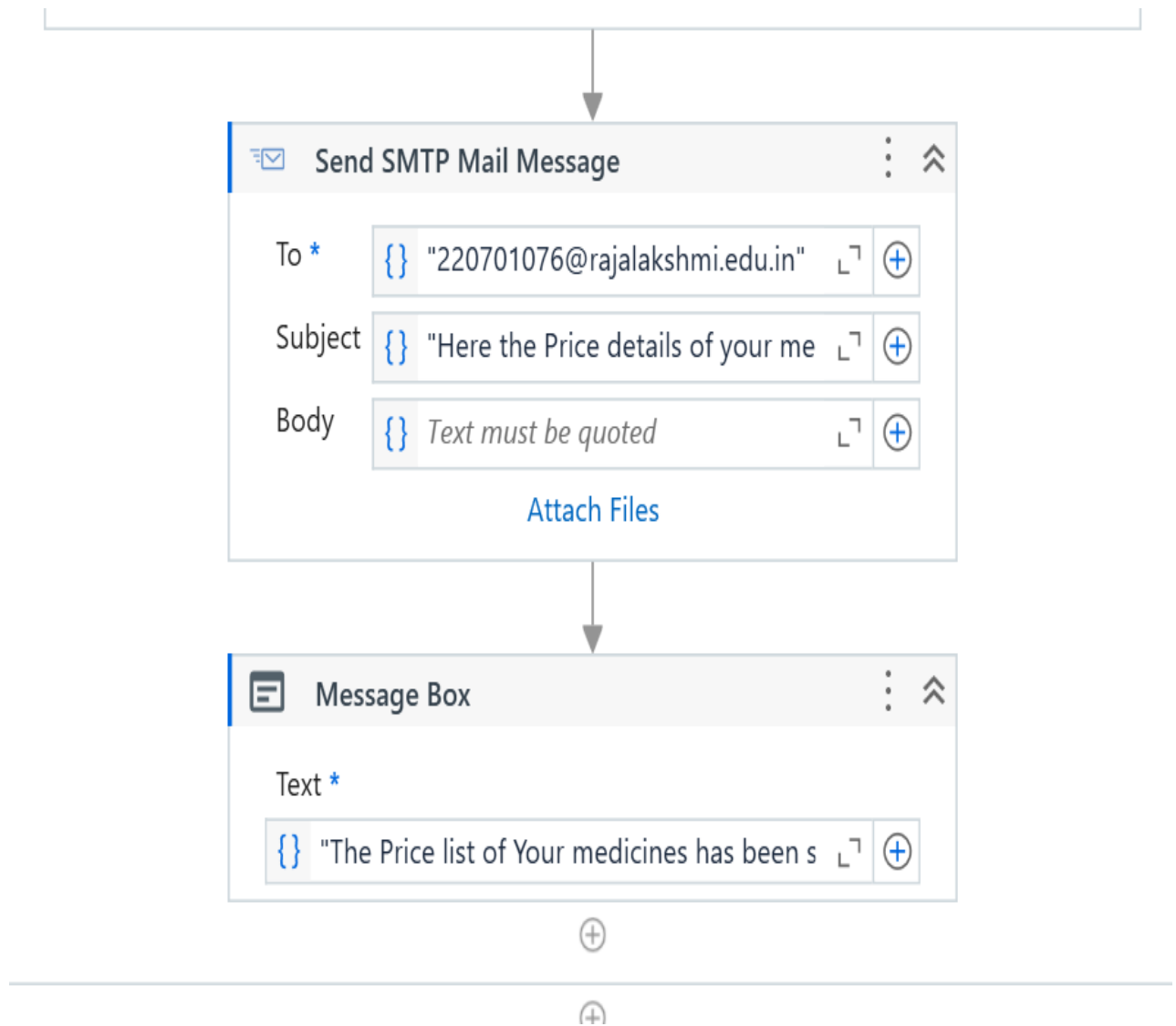
 Text  

☒ Save as draft

Attachments ☒ Files ☐ Folder

 File    





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2. Data scraping: [Studio - About Data Scraping \(uipath.com\)](https://uipath.com/about-data-scraping)
3. Email activity: [Activities - Send SMTP Mail Message \(uipath.com\)](https://uipath.com/activities/send-smtp-mail-message)
4. Email activity: <https://youtu.be/8vLVsyCO3Q>