Customer Support Automation of Ticket Creation (RPA)

A PROJECT REPORT

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Under the guidance of,

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in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

INFORMATION SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE AND ROBOTICS)
At

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

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PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report **"CUSTOMER SUPPORT AUTOMATION OF TICKET CREATION"** being submitted by "G SUPRITHA, VAISHNAVI, LEKHANA M, SAMBAVI B" bearing roll number "20211ISR0089, 20211ISR0074, 20211ISR0092, 20211ISR0004" in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Information Science and Engineering (AI and Robotics) is a bonafide work carried out under my supervision.

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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **CUSTOMER SUPPORT AUTOMATION OF TICKET CREATION** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Information Science and Engineering**, is a record of our own investigations carried under the guidance of **Ms. Deepthi S, Assistant Professor, School of Computer Science and Engineering, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

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ABSTRACT

The Ticket Creation Automation project is an innovative solution designed to streamline the customer support process by automating the creation of support tickets using UiPath Robotic Process Automation (RPA). This project addresses the critical need for efficiency and accuracy in managing customer inquiries, particularly in high-demand environments where timely responses are essential. By automating the workflow associated with ticket creation, the project minimizes manual effort and reduces response times, ultimately enhancing customer satisfaction. At the core of the automation is a strong workflow that checks the customer support email inbox for incoming requests, specifically filtering emails whose subjects contain the keyword "Ticket." The system efficiently extracts vital information, such as the sender's email address, the body of the message, and the subject line, enabling quick access to necessary data. Validation checks ensure that all required fields—name, email ID, and subject—are populated, and in cases of missing information, automated notifications prompt 2customers to provide the necessary details. The automation uses a simple trigger mechanism where customer support agents can easily activate the automation. Reading and processing stored data through Excel integration are used at the conclusion of the workflow. It involves creating tickets in the Zoho Desk system, as the automation is used to input all necessary information, which will be submitted in the form of a ticket for easy and hassle-free processes between the customers and support agents. Comprehensive error handling is integrated all through the workflow to manage such potential issues with robust operation under challenging scenarios. This project transforms how tickets are generated, streamlines workflows, but also enhances customers' overall experiences by allowing teams to focus more on complex requests while ensuring those inquiries are done in a prompt and accurate fashion. In essence, the Ticket Creation Automation project epitomizes how RPA can improve customer support operations. This project focuses on the needs of users and leverages advanced technology to enhance decision-making, optimize resource allocation, and eventually ensure better customer service outcomes. It has potential for future enhancements that position it as a sustainable solution, adaptable to the dynamic nature of changing demands in customer support.

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CHAPTER-1
INTRODUCTION

Customer Support Automation of Ticket Creation (RPA)

In the modern world, businesses are using automation technology to improve productivity, decrease human error, and streamline operations while raising consumer satisfaction. The creation of support tickets from consumer complaints is one area where automation may be quite helpful. Traditionally, customer service representatives have handled incoming complaints via email, gathering the relevant information, opening tickets, and monitoring the status of each case. For many years, this has been the standard procedure; however, the method is labor-intensive, time-consuming, and prone to human error.

The goal of this project is to create an automated solution for ticket creation using UiPath, the industry-leading robotic process automation platform. Efficiency, mistake minimization, and the abolition of manual intervention are the primary objectives. In order to handle incomplete or missing information, automated follow-up emails are sent to the customers, tickets are created, pertinent data is extracted from the complaint email, and details are stored in an Excel sheet. Through email parsing, data extraction, external system communication, and response generation, UiPath will be able to manage such duties.

1.1Automating the process of creating tickets

Because it takes a lot of human labor to extract information from emails, create tickets, and track them through the system, the conventional process of creating tickets for customer complaints or service requests has been a very labor-intensive operation. The manual approach is frequently ineffective, sluggish, and prone to mistakes, particularly in high-volume settings. Using Robotic Process Automation (RPA) solutions like UiPath to automate this process presents a big chance to increase speed, accuracy, and efficiency. Key information from incoming complaint emails is extracted, automatically entered into an Excel sheet or ticketing system, and a unique ticket ID is created for every complaint as part of the automation of ticket creation process. Support workers won't have to manually parse every email this way. thus saving time on administrative tasks and allowing them to focus more on resolving customer issues. Furthermore, automated ticket creation ensures that data is captured and

stored consistently with fewer errors, which means more effective tracking of customer complaints.

1.2 Handling Customer Complaints with Missing or Incomplete Data

The inaccuracy and absence of information on client complaints can occasionally be a challenge for support personnel when addressing them via tickets. Emails from customers will often leave out important details like their name, phone number, and a description of the problem. This delays the support team's ability to resolve tickets because they must personally contact the consumer to obtain clarity. To find any missing or insufficient information, the data taken from complaint emails will be analysed using UiPath in the suggested automated solution. UiPath will automatically send the customer an email if any necessary information is missing.

Information, in case of missing information that is required, UiPath will automatically send an email to the customer asking for the missing information. Businesses can reduce delays, improve the accuracy of data, and ensure customer issues are addressed in a more efficient manner by automating the process of identifying and requesting missing details. This step optimizes the supportprocess and reduces the gathering time of all necessary information in order to enhance the overall customer experience.

1.3 Utilizing UiPath Automation for Integration and Reporting

An automated system should offer helpful information to monitor performance and be properly connected with the current corporate systems. To guarantee a seamless data flow when automating ticket creation, UiPath can be coupled with the company's email system (such as Outlook or Gmail) and Excel (or any other pertinent ticketing systems). As a result, after gathering information and generating tickets, the automation system can generate real-time reports for monitoring ticket status, response times, and resolution effectiveness. By integrating these systems, tickets may be created automatically, status updates can be made, and actions can be recorded without human interaction. Additionally, UiPath's built-in reporting capabilities will allow management to keep the amount of time needed to address each problem and the degree of client satisfaction. With this degree of automation and

reporting, companies will be able to optimize resource allocation, improve customer satisfaction through quicker and more accurate responses, and continuously improve their support procedures.

1.4 ZOHO DESK

Zoho Desk is a cloud-based customer support software designed to manage and streamline customer service operations in a business. Customer interactions from multiple channels are collected together from emails, phone, chats, social media, and other areas in a single platform, such as Zoho Desk. Some features that improve efficiency and even shorten response times include ticket management, automation, self-service portals, and AI-powered assistance. The platform is highly customizable to allow businesses to tailor their workflows and automate repetitive tasks, while its integration with other Zoho products and third-party applications further strengthens its capabilities. Zoho Desk is a product that helps organizations deliver exceptional customer support and improve overall customer satisfaction.

CHAPTER-2
LITERATURE SURVEY

2.1 Customer service using RPA

Because RPA can automate tedious and repetitive processes, it has been widely embraced throughout industries, particularly in customer care. RPA systems like UiPath allow businesses to automate customer care duties including managing complaints, creating tickets, and following up with customers (Tata et al., 2020). According to these results, automation will significantly cut down on processing times and increase operational effectiveness because it requires fewer human intervention. This automation also eliminates the consistency issues that come with hand entry.

2.2 Employing Data Extraction and Email Parsing

The ability to parse emails is a crucial component of automating the customer support process, and UiPath is the best solution available in RPA. Chaurasia and Garg (2019) claim that the UiPath application makes it possible for a business to automatically extract both structured and unstructured data from emails containing customer complaints. In order to extract client information, such as name, complaint description, and complaint kind, UiPath has used machine learning, natural language processing, and regular expression.

Furthermore, RPA systems like UiPath can automatically extract crucial information from unstructured data, such email text, according to Agarwal et al. (2018). In order to increase the accuracy of data extraction from emails and documents, they discuss integrating AI-driven capabilities like natural language processing (NLP) into UiPath. Automating the production of service tickets and inserting complaint data into databases or ticketing systems is made possible by its ability to extract structured data from email and PDF formats.

2.3 Automation of Follow-up and Handling Incomplete Data

In automating the process of ticket creation, handling incomplete or missing data can be one of the problems. Iyer et al. (2021) describe the use of RPA in the sending of automated follow-up emails to customers who are unable to provide all the necessary details to create tickets. This paper covers how UiPath can generate automated follow-up emails for incomplete data, thus enabling timely addressal of customer inquiries and complaints.

Automated process for follow-up increases a company's response to their customers, hence raising customers' satisfaction levels.

Further, Fiorani et al. (2019) detail how the process will be improved in case follow-up automation occurs by enhancing the customer experience. Automated requests for missing information ensure that customers do not have to wait long for their tickets to be processed, as the system can immediately prompt customers to provide missing details. This aspect of automation not only speeds up the ticketing process but also reduces the burden on customer service agents, allowing them to focus on resolving issues rather than collecting missing data.

2.4 How Automation Affects Operating Expenses

The decrease in operating expenses is among the biggest advantages of using RPA to automate ticket production. Automation can lower expenses related to administrative work, repetitive follow-ups, and manual data entry, according to Sullivan (2021). Organizations can do away with the requirement for human resources to do the repetitive duties of reading emails, extracting data, and sending follow-up communications by automating the ticket creation process with UiPath.

According to a study by Chaurasia et al. (2019), businesses who integrated RPA into their customer support processes reported a notable decrease in personnel expenses related to creating tickets and resolving issues. Organizations can reallocate their resources to more strategic and client-facing activities, like solving complex problems and improving the customer experience, by automating repetitive processes. In large firms that handle a lot of complaints, this operational cost reduction is very crucial.

2.5 RPA Solutions' Scalability and Flexibility

The scalability of RPA is another crucial feature. One of the main advantages of utilizing RPA solutions like UiPath, according to Willcocks et al. (2017), is their capacity to grow with the organization's expanding needs. UiPath can be set up to manage a greater volume of emails, data extraction jobs, and ticket generation procedures when customer complaints rise without the need for more staff. Because of its scalability, RPA is a desirable option for businesses with varying complaint quantities.

Furthermore, Fiorani et al. (2019) point out that UiPath's adaptability enables companies to swiftly modify their automation procedures to account for modifications in the customer

support workflow. For example, UiPath can be modified to accommodate extra follow-up activities or new information that has to be included in the tickets without requiring a lot of effort or delay.

2.6 Automation of Ticket Management Systems

Several researchers have also examined the combination of RPA with current ticket management systems. Sullivan (2021) talks about how UiPath can connect with widely used ticketing applications such as Zendesk, ServiceNow, and Freshdesk. This connection can be done with the integration of automation processes where customer information extracted from the emails is directly fed into such systems to create tickets and assign priorities and track complaints status.

Agarwal et al. (2018) elaborate on how RPA can enhance the functionality of existing customer service tools by automating manual data entry, reducing delays in ticket creation, and improving the accuracy of customer information stored in ticketing systems. By automating the end-to-end process of complaint handling—from email receipt to ticket generation—organizations can streamline their workflows and provide quicker, more accurate responses to customer complaints.

CHAPTER-3
RESEARCH GAPS OF EXISTING METHODS

3.1 Managing Contextual Ambiguities in Complaint Data Gap:

When emails contain contextual ambiguity, particularly when the complaints are indirect or only partially complete, current systems usually fall short. NLP models that are better at contextual understanding, like Devlin et al. (2018)'s BERT, might not be able to capture the subtleties of the domain or implicit customer needs.

Prospect for Extension: Create pre-trained language models tailored to a particular domain and refined using customer complaint datasets to improve the system's capacity to extract implicit information.

3.2 Automated Systems' Scalability for High-Volume Data Gap:

Many systems are only workable for small data sets; they cannot grow to handle thousands of real-time complaints. Therefore, a company that handles a lot of customer interactions every day will be hesitant to use them.

Extension Opportunity: To facilitate real-time processing and integration with extensive ticketing platforms, introduce distributed computing frameworks like Apache Kafka or Spark.

3.3 Addressing Incomplete Complaint Data Effectively Gap:

Automated email responses for incompleteness data are already in place, but they typically don't ensure high response rates or resolve ambiguity. Systems such as those developed by Shum et al. (2018) react with generations, but they do not have the means to verify that the follow-up data is comprehensive.

Possibility of Extension: Create processes that allow email content to be dynamically adjusted to shifting customer engagement trends and offer multi-channel support channels, like chatbots and SMS, for the collection of missing data.

3.4 Restrictions in Domain-Specific Data Gap Entity Extraction:

Domain-specific information, like complaint IDs or technical terms specific to a given company, is frequently overlooked by generalized . Workflows for creating tickets become less accurate as a result.

Possibility of Extension: boosting entity extraction accuracy in the pipeline by utilizing domain-specific embeddings, like GloVe or fastText embeddings trained on industry-specific corpora.

3.5 Automated Responses Don't Personalize gap:

The generic responses produced by the current email automation systems might not resonate with customers or even sound appropriate for their tone. Although there aren't many applications in ticketing, research on transformer-based models has shown that responses must be customized (Raffel et al., 2020).

Extension Possibility: Transformer models adjusted for variations in tone and style according to organizational branding or customer preferences.

CHAPTER-4
PROPOSED METHODOLOGY

To guarantee the efficient and error-free completion of duties pertaining to email data extraction, processing, and ticket generation in Zoho Desk, the automated ticket creation system using UiPath follows this methodology. The goal of the procedure is to automate the creation of tickets from complaint emails while minimizing human participation.

1.Email Processing and Data Extraction:

Outlook setup: Using the "Use Desktop Outlook App" activity, the automation starts by configuring the Outlook program. This phase allows UiPath to access and process emails by connecting to the user's Outlook account.

Email Retrieval: To obtain emails from the Inbox folder, utilize the "For Each Mail" activity. To prevent needless data retrieval, a limit of five emails is established.

Transporting Pertinent Emails: A criterion is established to determine whether the email's subject line includes the phrase "Ticket." If the requirement is met, the email is transferred to the "Ticket" folder for additional processing.

2.Data Extraction and Validation:

Email Data Extraction: To loop through the emails in the Ticket folder, another "For Each Mail" activity is utilized. Using Assign actions, the email body and the sender's email ID are recovered.

Parsing Data: From the email content, the customer's name, email address, and subject are extracted using text manipulation techniques. These specifics are kept in variables like TicketSubject, CustomerName, and SenderEmail.

In order to handle missing data, the automation determines whether any of the extracted details—like the name or subject—are absent. An automatic email is sent to the sender asking for the missing information if any necessary details are missing.

3.Excel Data Storage:

To ensure effective information organization, the extracted data is saved in a DataTable.

In order to process the name, email, and subject further, a new Excel file is created in the "Request" folder.

4. User Trigger for Processing:

The user can manually start the main process by hitting ALT+S. The UiPath Trigger activity is used to implement this trigger. As a result, the user can initiate the automated process just when necessary.

Additionally, the automation verifies that the Excel file with the ticket data that was extracted is located in the "Request" folder. When the file is located, the automation starts processing the ticket information.

5. Reading and Processing Excel Data:

The "Request" folder contains an Excel sheet from which the data (name, email, and subject) may be extracted using the Read Excel activity.

Variables are assigned the extracted values for additional processing.

6. Ticket Creation in Zoho Desk:

The Attach Browser action opens the browser and directs it to the ticket creation page in Zoho Desk, triggering the ZohoAutomation workflow.

Using the Type Into action, the extracted ticket data (name, email, and subject) is input into the Zoho Desk form.

Clicking to create a new support ticket in Zoho Desk is how the ticket is sent.

7. Verifying Ticket Creation and File Movement:

An If condition after the ticket creation attempt determines whether the ticket was generated in Zoho Desk successfully.

To show successful processing, the Excel file with the request is transferred from the "Request" folder to the "Processed" folder if the ticket is successfully created.

The file stays in the "Request" folder for further processing in the event that the ticket creation attempt fails, and a notification is shown.

8. Taking Care of Missing Requests:

A notification alerting the user that there are no requests available for processing is shown if no files are located in the "Request" folder.

CHAPTER-5

OBJECTIVES

Goals: Consist of Based on receiving complaint emails, the system seeks to automate the ticket creation process. From customer emails, the system will extract pertinent data, like the customer's identity, the nature of the problem, and the product or service being used. It will then save this data in an Excel sheet or other structured format. The system will automatically send a follow-up email to the client asking for the missing information if any crucial details, such as the customer's name, are absent from the complaint email.

Automated Complaint Detail Extraction: Using UiPath studio, this should automatically extract all pertinent information from incoming complaint emails, including the customer's name, the complaint description, and other pertinent details, and store it in an Excel sheet format.

Data Validation and Follow-Up: The system will confirm that the information that was extracted is complete. An automated follow-up email will be created and sent to the customer requesting the missing information if any information is missing, such as the client's name or the specifics of the complaint.

Efficient Ticket Administration: To facilitate monitoring and analysis, the retrieved data will be stored in an easily accessible format, such as an Excel file. Because they have all the information, the customer service personnel would be able to handle issues with ease.

Reducing Manual Labor: Save the customer support agent's working hours and allow them to concentrate on more complicated tasks by avoiding the manual entry and follow-up processes.

Faster Response and Resolution Times: By automating the ticket creation and follow-up procedures, the system guarantees a quicker response to consumers, Better efficiency, fewer process errors, and effective customer service through automation .

CHAPTER-6

SYSTEM DESIGN & IMPLEMENTATION

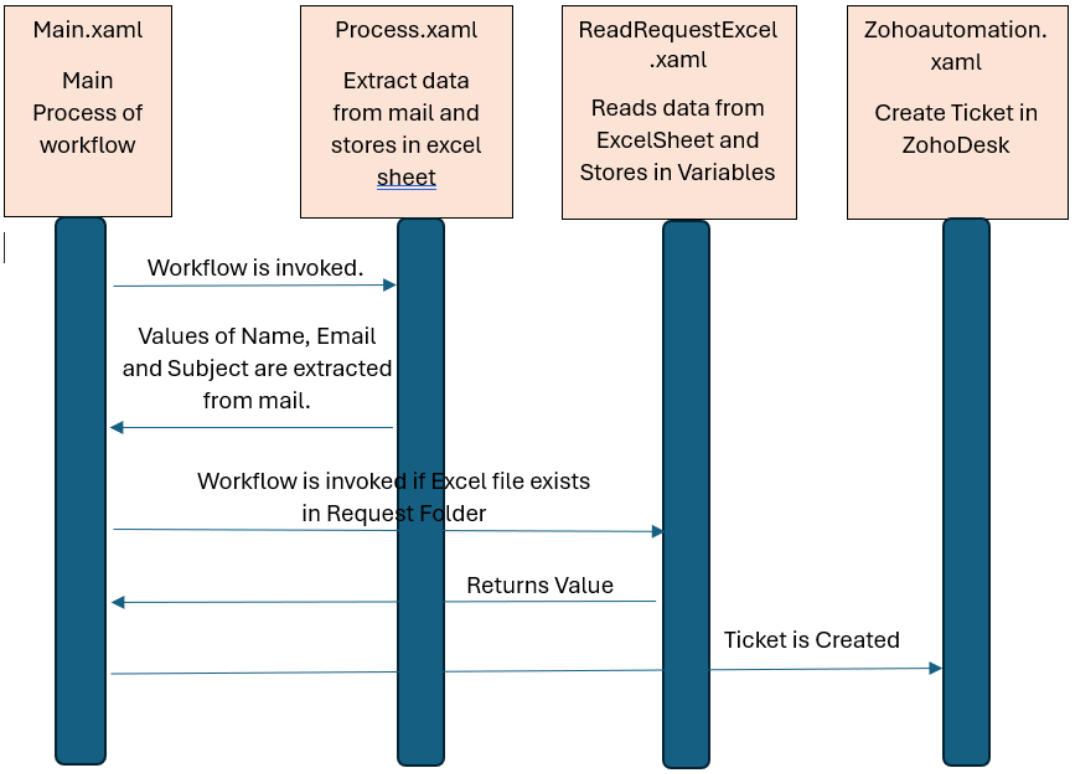

Fig 1.1 helpdesk ticket creation sequence flow

An RPA-driven helpdesk ticket generating procedure is depicted in the diagram. An agent updates an Excel file to start the process. After reading the file and extracting the ticket details, the RPA bot uses the API to open a new ticket in Zoho Desk. This automation minimizes manual labor and expedites the ticket production process.

CHAPTER-7

TIMELINE FOR EXECUTION OF PROJECT

(GANTT CHART)

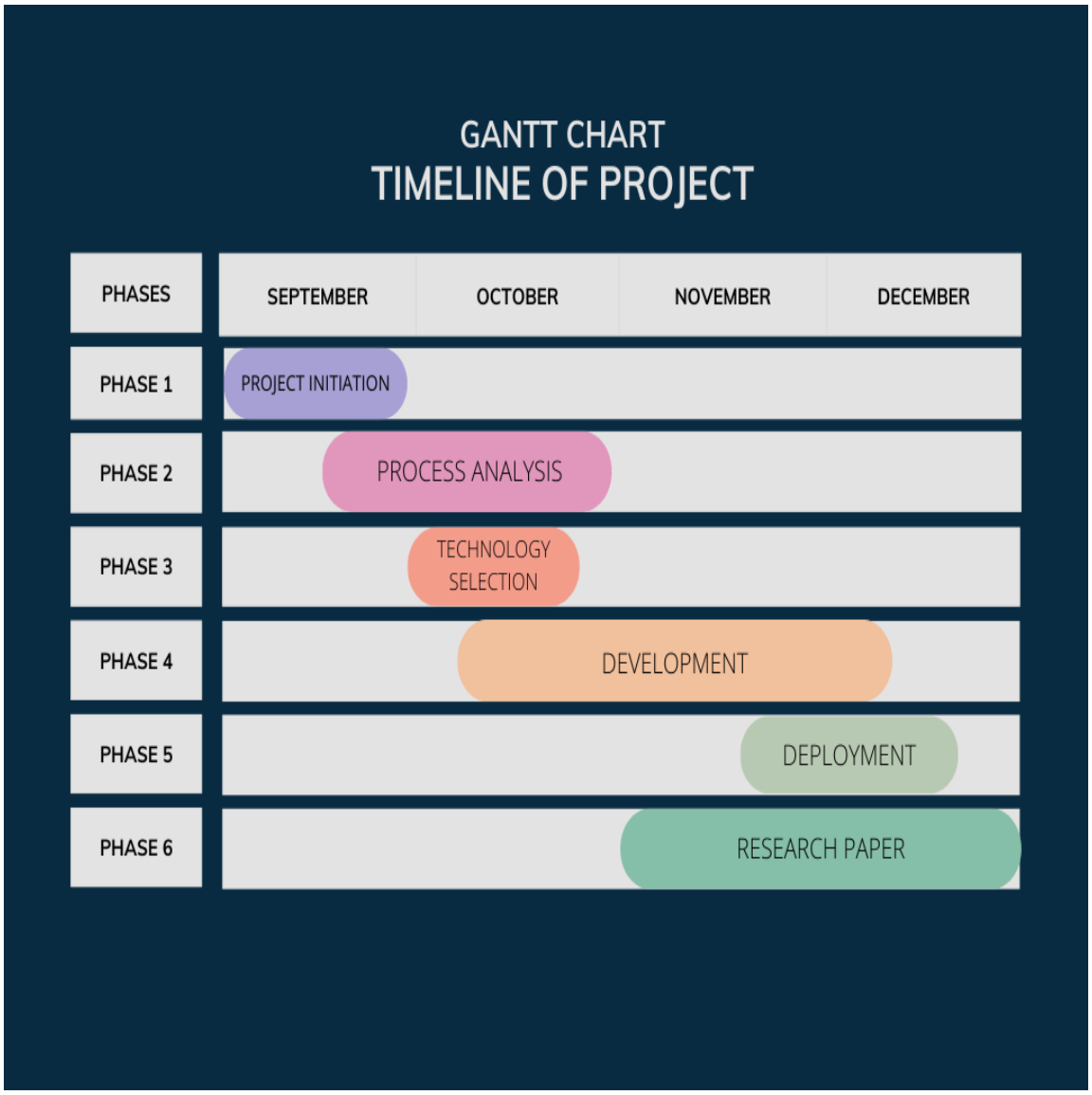

Fig 1.2 Gantt chart

CHAPTER-8
OUTCOMES

For businesses that handle customer complaints, the deployment of an automated ticket creation system employing RPA solutions like UiPath is anticipated to produce a number of significant results. These results are essential for raising customer happiness, decreasing manual errors, and increasing operational efficiency.

Decrease in Manual Effort:

By automatically extracting complaint details from incoming emails and storing them in an Excel sheet, the system does away with the need for human interaction. It cuts down on the time and effort needed to create tickets manually. Automating repetitive, low-value operations like data input and email processing will free up customer support agents' time so they can concentrate on more difficult work.

Increased Data Accuracy:

When tickets are created automatically, human mistake is eliminated. The system extracts the required information, such as the customer's name and issue description, from the email using Natural Language Processing and pre-established extraction rules, then saves it in an Excel sheet. Human data entry errors and inconsistencies, such as incorrect or missing customer information, are totally removed.

Enhanced Customer Response Time:

The system can easily identify missing information and instantly produce follow-up emails to customers who request such details because it automatically extracts and validates complaint information. This results in significantly quicker responses and prompt communication regarding their tickets, which enhances response times and boosts customer satisfaction.

Minimal Operating Costs:

Since automation does not require additional staff to manually create tickets, it lowers operating costs. With the system in place, the cost of managing the ticketing process is reduced

because fewer workers are needed. Additionally, because the follow-up emails are sent automatically, the time saved can be used to better address customer concerns.

CHAPTER-9

RESULTS AND DISCUSSIONS

RESULTS

Saving Time:

Because it reduces the lead time needed to produce a ticket from a complaint email, the automated system saves time. With the new system, a customer support agent may now extract, enter a system, and locate information in a matter of seconds instead of several minutes. The new technology can save 80 percent on ticketing time in preliminary testing because it can process many emails at once.

Enhanced Precision:

More accuracy has been demonstrated by the system in handling all consumer complaint data. Crucial information such as the customer's name, contact details, and a description of their complaint are precisely recorded by the system, preventing any errors that would have happened.

Customer satisfaction:

Automated follow-up emails that ask for information that is lacking guarantee that customer grievances are addressed faster. Customers are happier now that they can send prompt, accurate requests for missing data instead of having to wait for phone calls or manual intervention. Customer satisfaction with response speed and communication clarity has increased.

Reporting and Analytics:

It is simple to track the creation of tickets, their response timeframes, and the types of complaints thanks to the automated system. Management can create real-time reports with the Excel sheet that provide insightful information on customer pain areas, reoccurring problems, and the effectiveness of ticket handling in general. Finding trends in this data and using it to inform decisions can help to raise the calibre of services.

DISCUSSIONS

There are various advantages that RPA tools, such as UiPath, offer when it comes to automating ticket creation. First, it ensures the process is faster, more accurate, and less prone to human errors. For industries dealing with large volumes of customer complaints on a daily basis, such as telecommunications, e-commerce, or service industries, this level of automation is a game-changer.

However, such a system involves complexity in handling unstructured content of emails. Text extraction capabilities of UiPath are robust, but many customers' emails contain ambiguously worded or obscure text that requires human judgment for proper processing. The have a fallback where an issue is escalated to the human agent.

Another challenge is how the follow-up emails seeking missing information should be effectively worded and personalized. Any automated email has to be clear, concise, polite, and so forth. An integration with AI-based systems helps UiPath to enhance the tone and relevance of its follow-up emails based on customer complaints, thus adapting dynamically to their needs.

Lastly, while automation provides savings on cost and efficiency, technology over-reliance risk exists, which might imply a negative impact on services if not closely watched regarding service quality. To hold high standards of customer care, there must be equilibration between the proportions of automation and human judgment.

CHAPTER-10

CONCLUSION

Using RPA tools like UiPath, this can further improve the efficiency, accuracy, scalability, and cost-effectiveness of the ticket generating process from complaint emails. The technology can respond to consumers quickly and allows for higher customer satisfaction ratings while drastically reducing the amount of manual labour and process errors. Additionally, companies that are expanding quickly or have a lot of consumer interaction benefit from having the capacity to manage large numbers of complaints.

Overall, the impact is very favourable, although there is clearly potential for development given the obstacles it offers, such as when working with particularly complicated and unstructured data. It makes a big difference in making sure that the customer service process is streamlined and easy to handle for the convenience and delight of the customers. NLP and AI are always being improved, which guarantees that capabilities in handling client complaints for prompt resolution will continue to advance. Thus, this kind of automation can be viewed as the start of a revolutionary phase in which a business can better optimize complaint management and, as a result, provide dependable, quick services.

REFERENCES

1. Meyer, T., & Stewart, R. (2021). *Automation in Customer Service: Challenges and Opportunities*. Journal of Business Process Automation, 12(3), 234-250
2. Nguyen, D., & Choi, H. (2021). *AI and Automation in Customer Service: The Next Frontier*. Journal of Service Management, 28(2), 325-341..
3. Avasarala, A., & Avasarala, J. B. (2020). Robotic Process Automation: A Guide for the Business and Technology Professional. Springer.
4. Tata, S., & Vyas, M. (2020). *Improving customer service through Robotic Process Automation*. Service Management & Automation.
5. Gupta, A., & Rana, A. (2020). *Automated customer service workflows in the digital age*. Journal of Service Automation, 15(2), 80-95.
6. Iyer, M., & Shah, P. (2021). *Automation of customer service ticketing systems: The role of follow-up emails*. Business Process Automation Review.
7. Chaurasia, P., & Garg, N. (2019). *Email parsing and data extraction using UiPath: A case study*. International Journal of Computer Science & Technology.
8. Willcocks, L., & Lacity, M. (2017). *Robotic Process Automation: The next wave of automation in business operations*. Journal of Business Automation.
9. Sullivan, K. (2021). *Automation in service desk operations: UiPath's role in ticket creation*. Journal of Service Automation & RPA.

APPENDIX-A

PSUEDOCODE

```
START
   Initialize Email Client
   while (Emails exist in inbox)
      Move to 'ticket' folder
      Read Email
      Extract name, mail id and subject from body
      Save it to a excel sheet in request folder
    End while
   While excel in request folder (if exist)
       Extract value from excel
      Create Ticket in Zoho Desk with extracted information
  End WHILE
END
```

APPENDIX-B

SCREENSHOTS

Open UiPath and create a process named "Ticket Creation" and perform the following steps given below

Step 1-

Inside the process a workflow named "ProcessMail" is created.

- An activity called "Use Desktop Outlook App" is added into the workflow. And the account is configured.
- In the Do sequence add "For Each Mail" activity, The mails are retrieved from inbox folder and limit is set to 5.
- a "if" condition is added in the Do sequence of "For Each Mail" activity, the condition is given as to check whether Subject of mail contain "Ticket". If so then it moves the particular mail to "Ticket" folder in outlook.

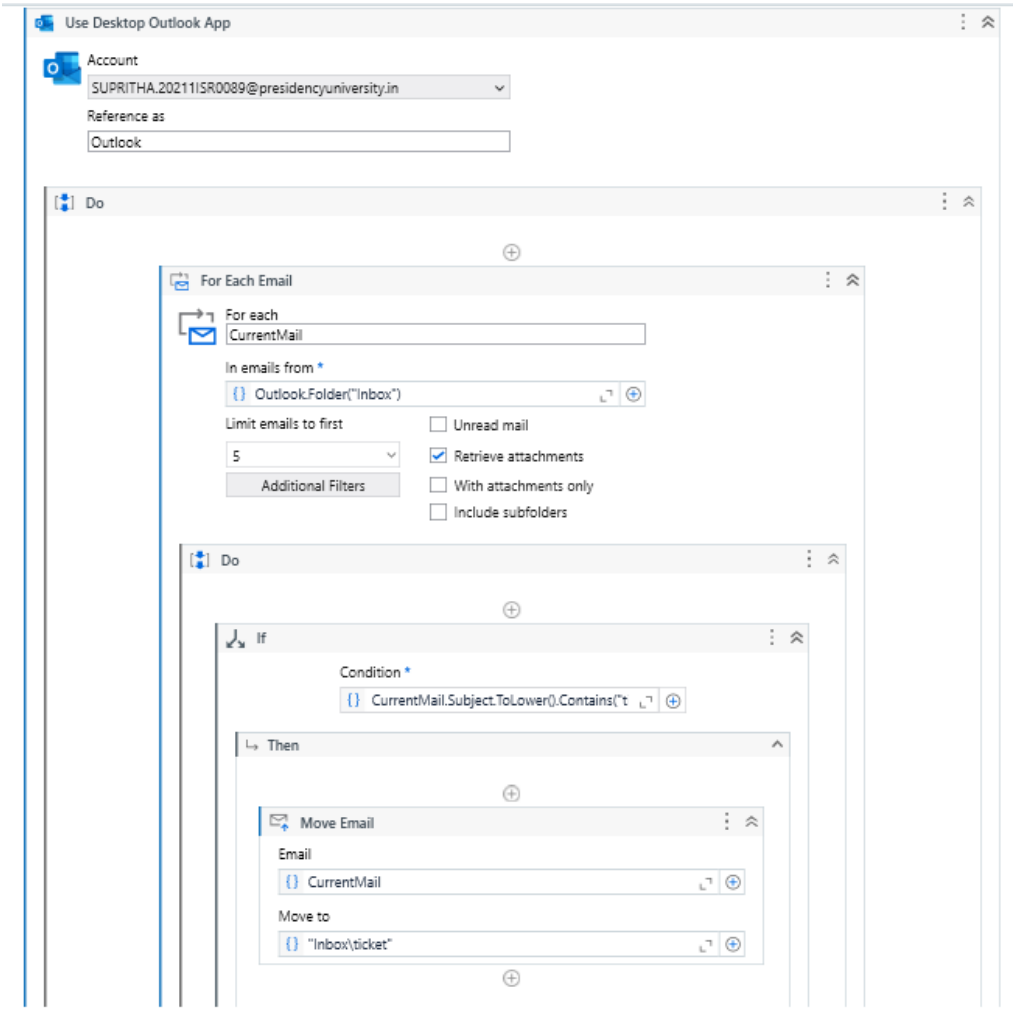

Fig 1.3 Outlook Configuration

Step 2 –

- Another “For Each Mail” activity is used after the first one To Retrieve the data from “Ticket” folder setting the limit to 5.
- An Assign activity is added to store the value of the sender’s email ID in a variable.
- Another assign activity is added to store the body of the mail in variable.

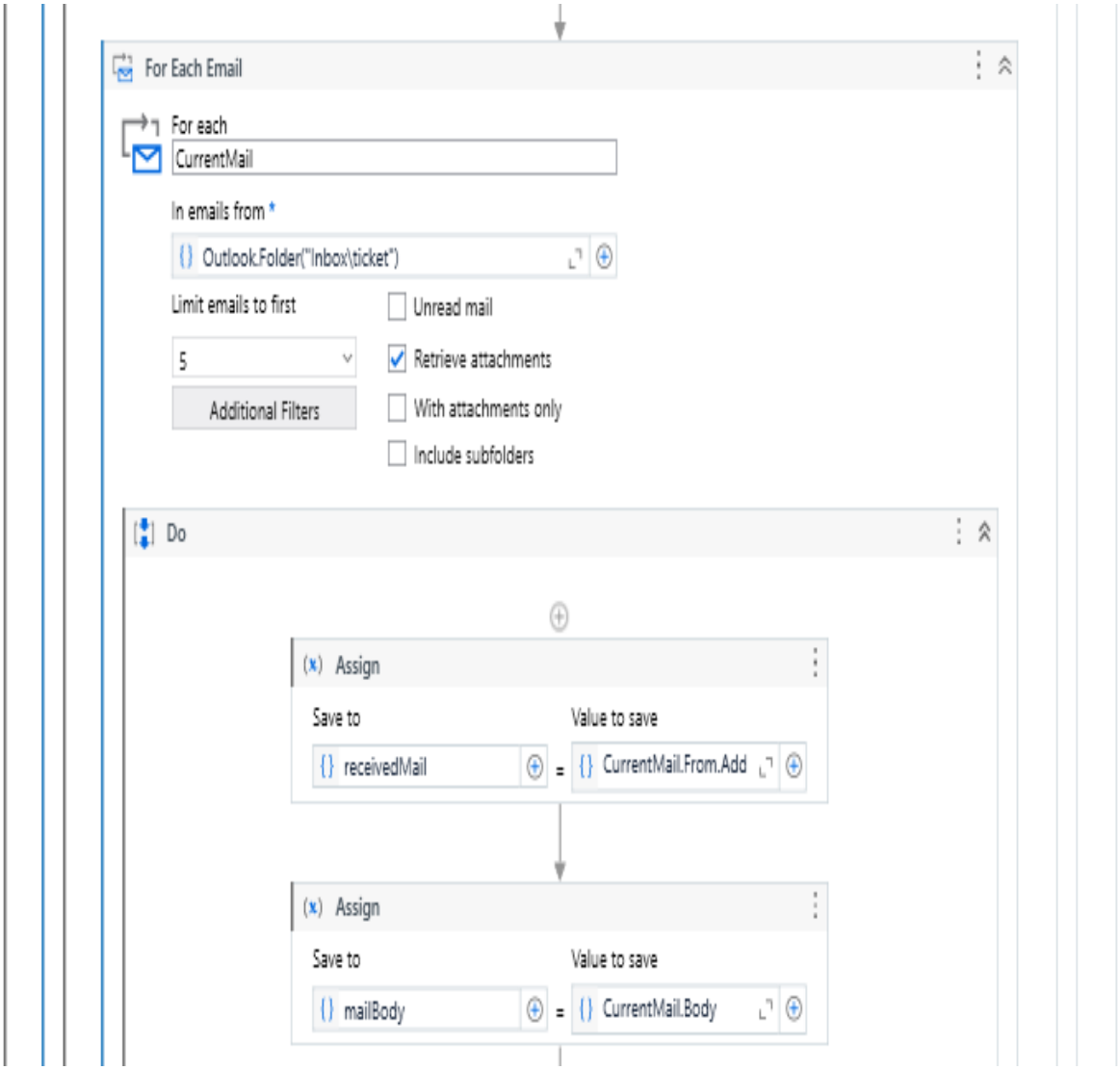

Fig 1.4 Data retrieved from Ticket folder.

Step 3 -

- a assign activity is added with a variable "ExtractedMail" to store the name of the sender from the body of mail.
- a "if" condition to check whether name is empty or not, if empty it assign nothing value in NameVariable else it assigns the extracted value to the NameVariable.
- The same steps are performed to store Mail and subject in respective variables called MailVariable and SubjectVariable.

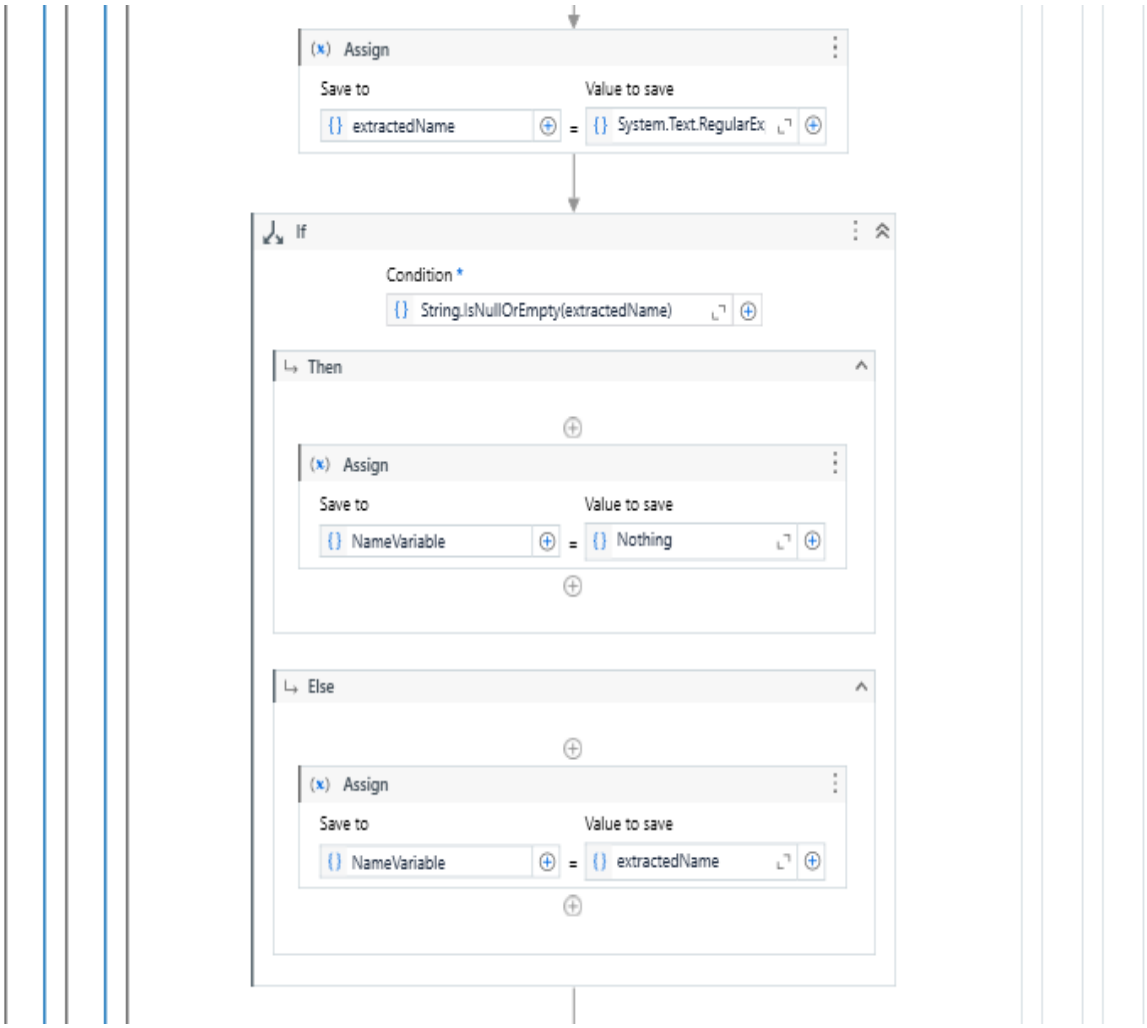

Fig 1.5 Data Validation

Step 4 – A message box is added to check wheatear the values are stored properly for all the variables Created.

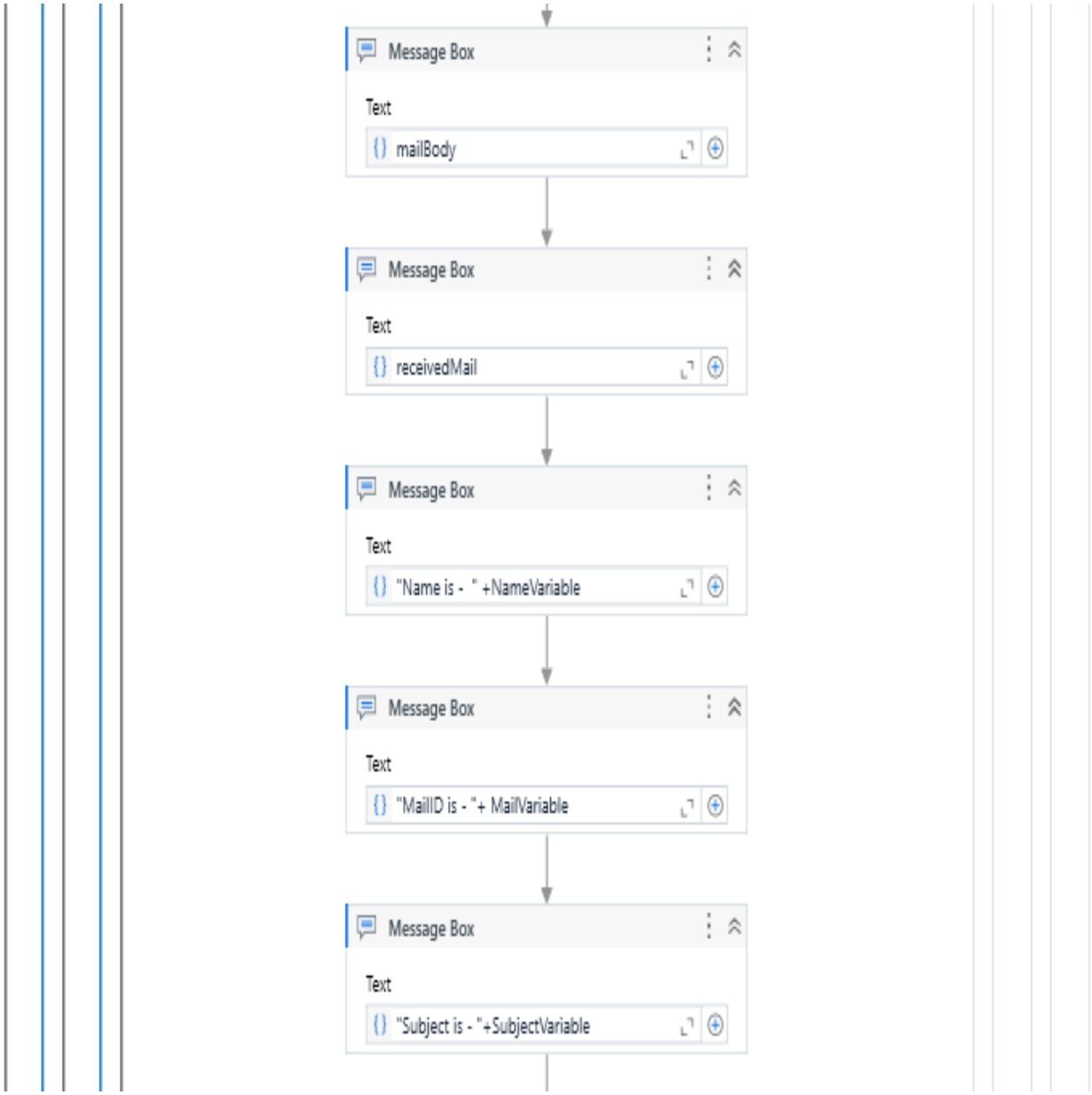

Fig 1.6 Displaying Extracted data.

Step5- An "Else If" condition is applied such that it would notify the sender with an email when he fails to provide a required value -Name, emailID or subject.

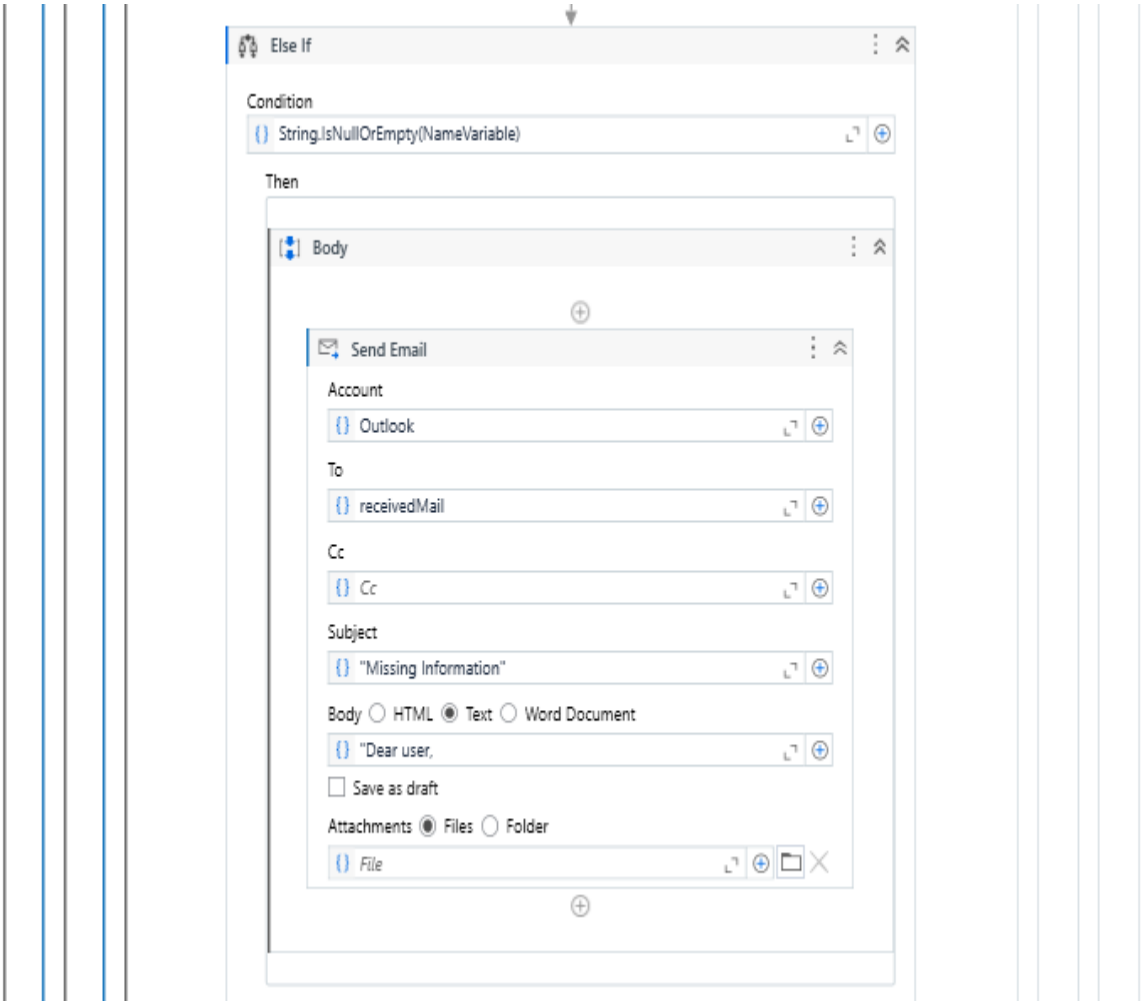

Fig 1.7 Notifying Sender for Missing Information

Step 6 - With the values a data table is created and stored in a folder called "Request"

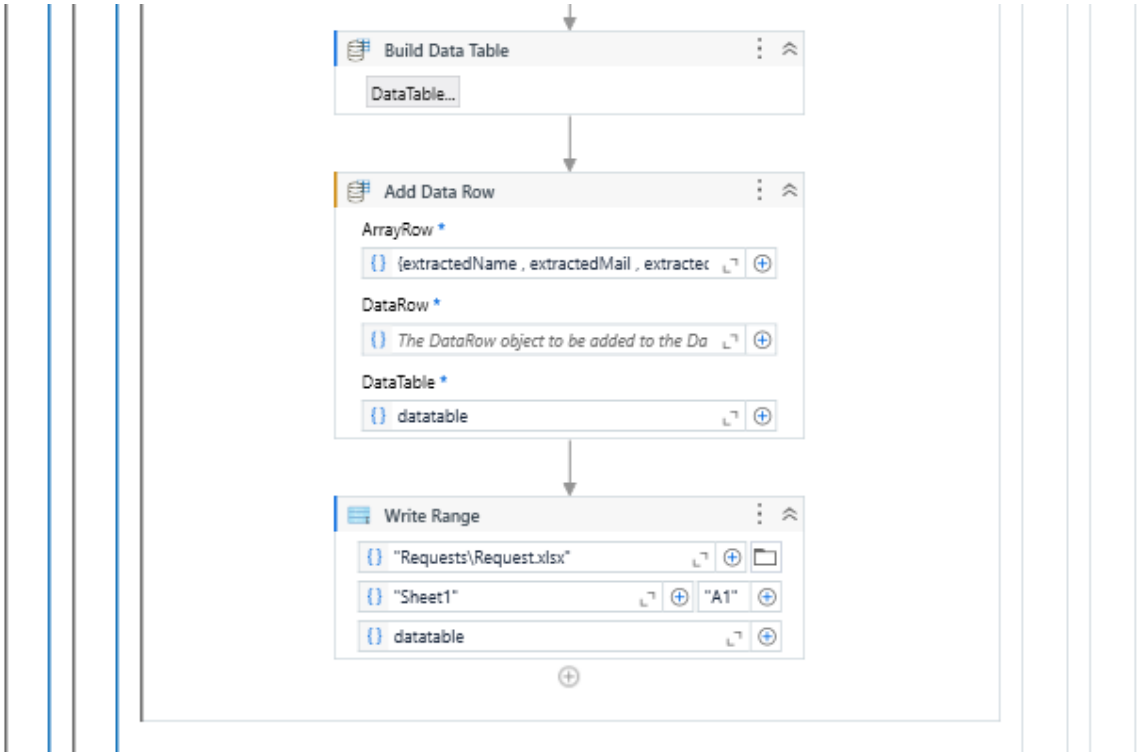

Fig 1.8 Storing Data in Excel sheet

Step 7 - Now, The "Process Mail" workflow is invoked in the main workflow , and a message box displays "Agent Ready. Please use ALT+S to trigger the Automation." after the invoked workflow.

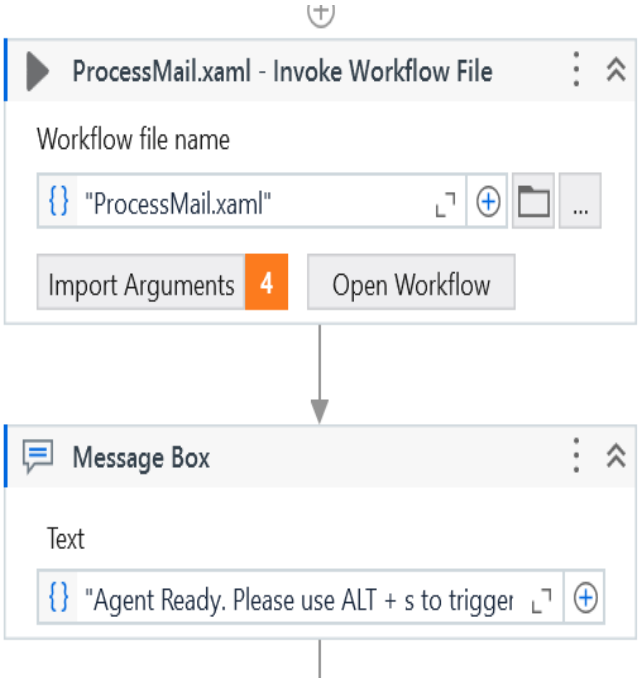

Fig 1.9 Invoke Process Mail workflow

Step 8 –

- The workflow is started by adding a trigger activity that can only be accessed by concurrently pressing the "Alt+S" keys.
- A activity called "pathExist" is added to check whether the excel sheet in which the values stored is present in the folder "Request"

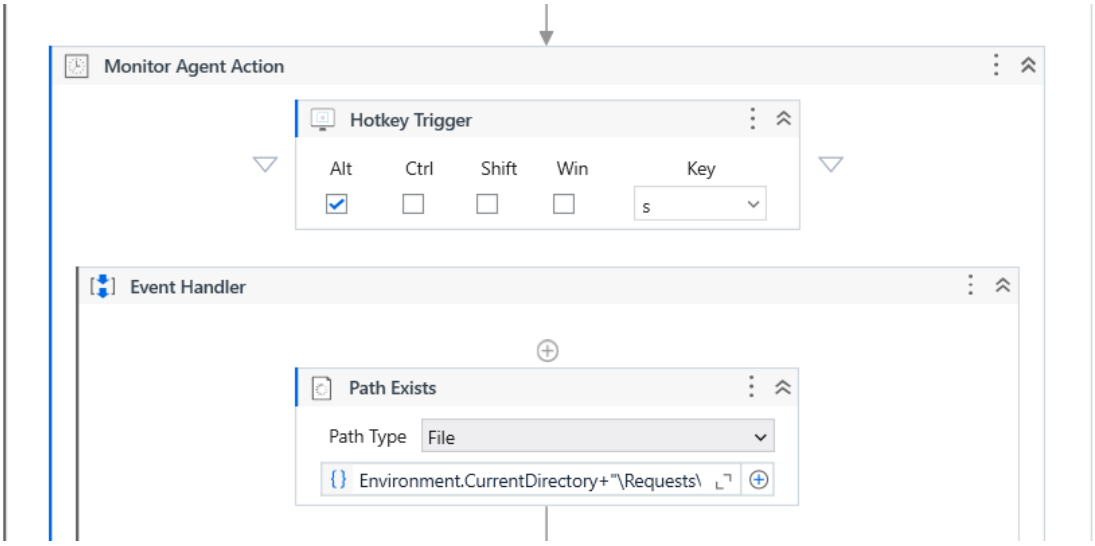

Fig 1.10 Trigger

Step 9 –

- If the file exists, a message box displays "Request available; will start to create the ticket."
- Create a new workflow called "ReadExcelRequest" and invoke it in main workflow.
- A message box which it displays the value i.e. name, email and subject.

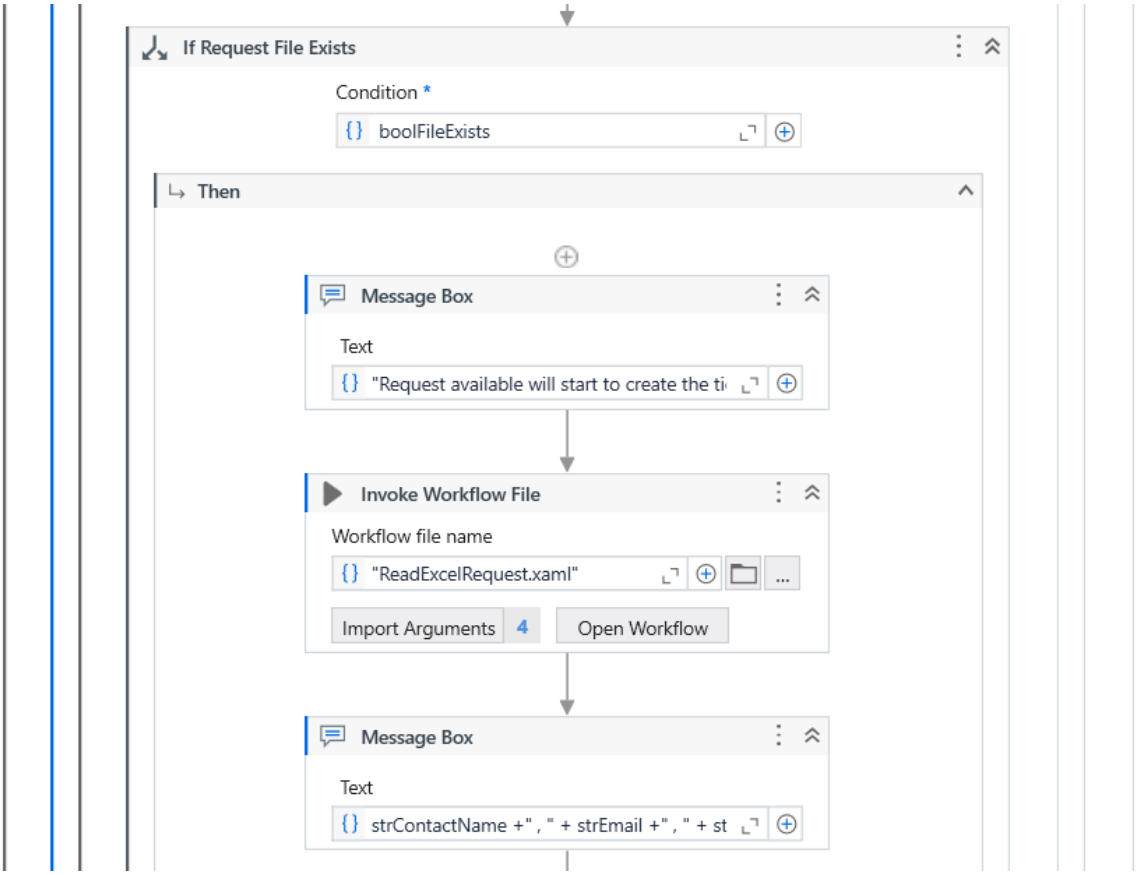

Fig 1.11 Condition to check file existence and invoke ReadExcel workflow.

Step 10 - In the ReadExcelRequest workflow it reads the excel sheet using ReadRange activity and assigns the value name, mailid and syubject to respective variables

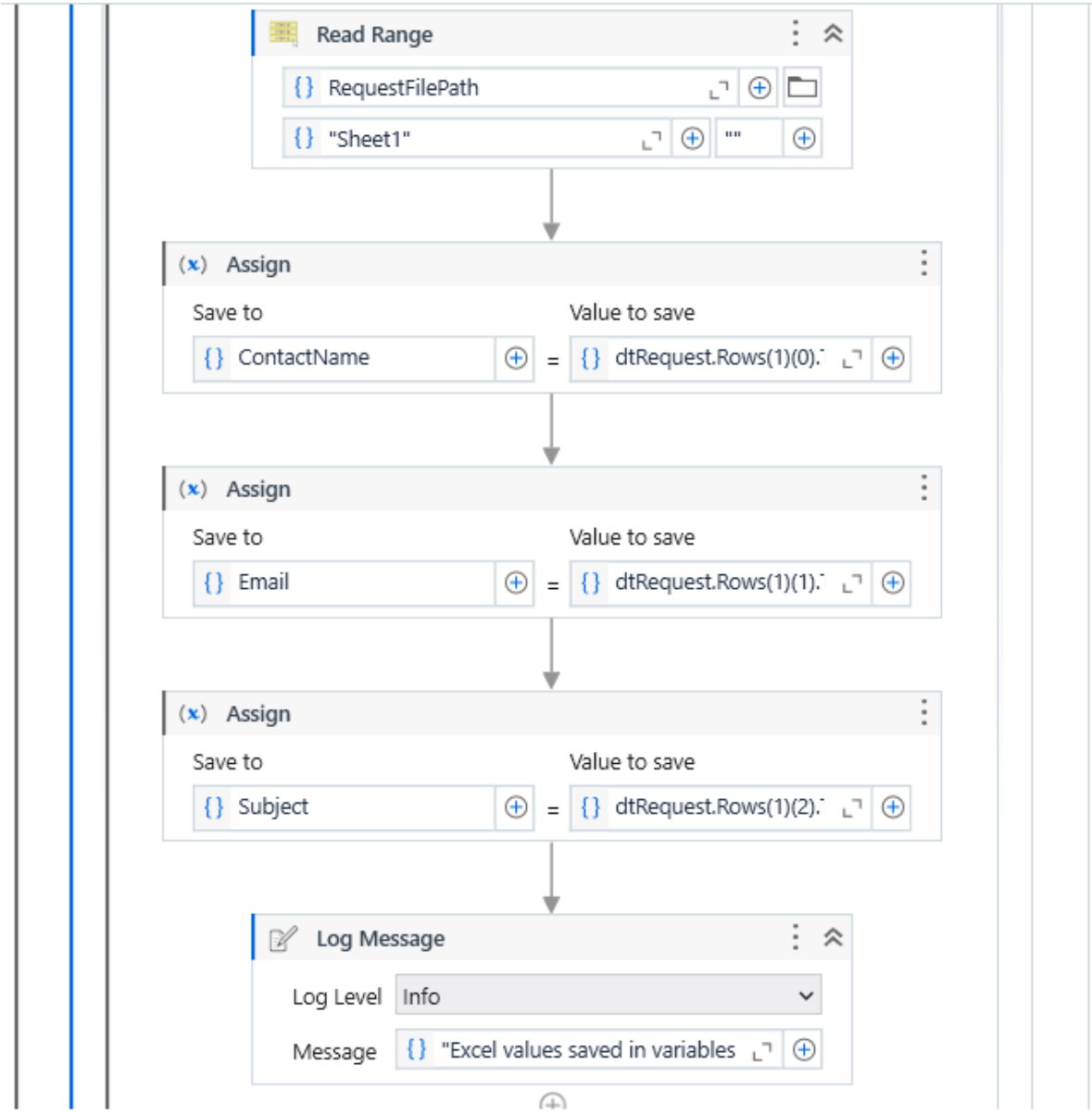

Fig 1.12 Assigning Value to respected variable.

Step 11 - now in the main workflow add an if condition checking if any of the details is missing. If so a message is displays telling "A value is missing Cannot create zoho desk ticket Thank You". Else the "ZohoAutomation" workflow is invoked.

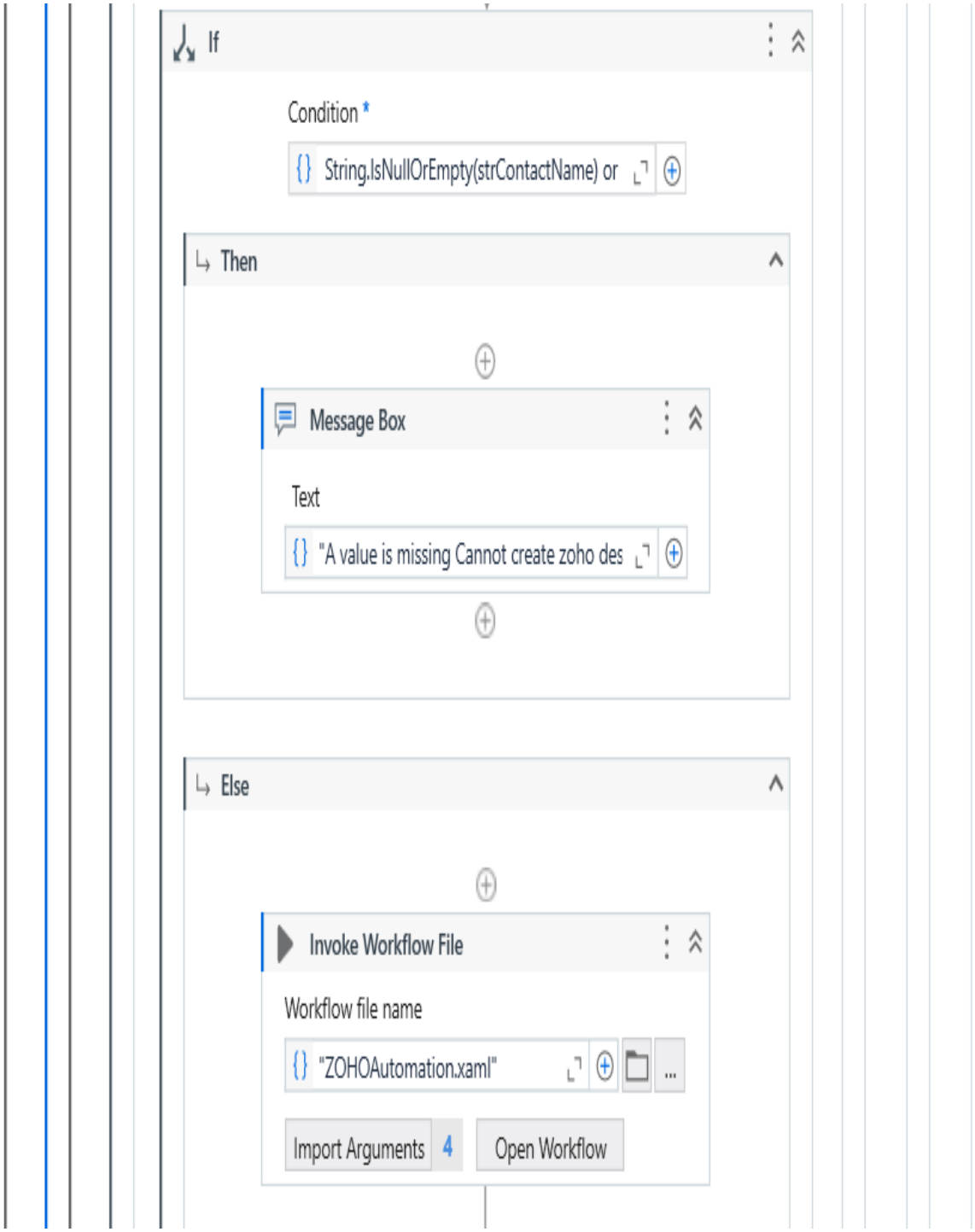

Fig 1.13 Validating details before ticket Creation

Step 12-

In the "ZohoAutomation" workflow use attach browse activity which indicates the zoho desk website. Later a Click activity is used to indicate "+" symbol and respective name, mailId and subject is typed in specified places in the page as indicated in "Type into" activity. And then after adding values submit option is clicked using "Click" activity.

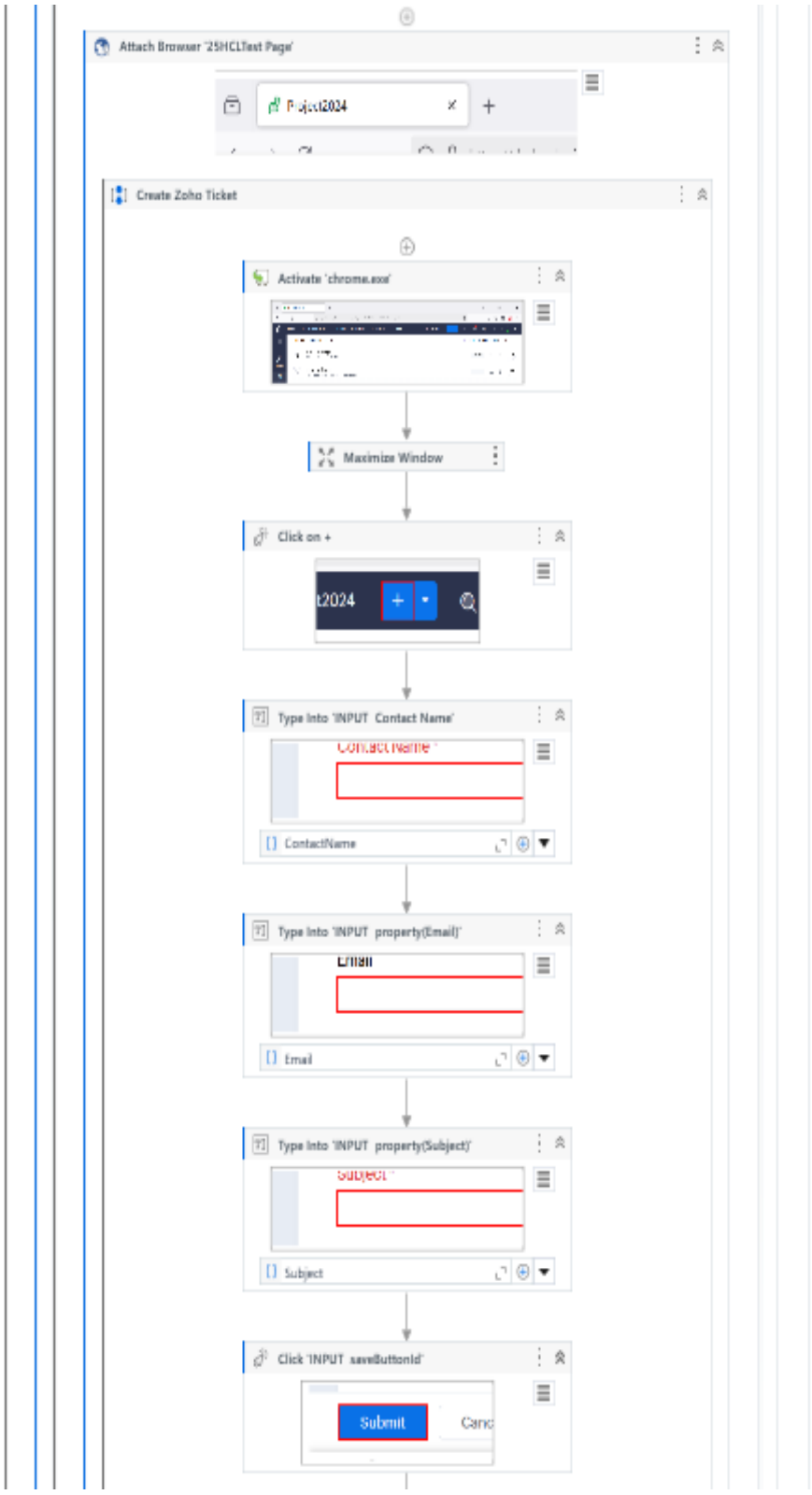

Fig 1.14 Automating Ticket Creation in ZohoAutomation.

Step 13 – If Condition is added to check wheather zoho desk ticket is created or not. If created the excel sheet present in "Request" folder is moved to "Processed" folder and a message is displayed as "Zoho Ticket Created and File Moved to the Processed Folder. Use ALT+S to check for new requests to process."

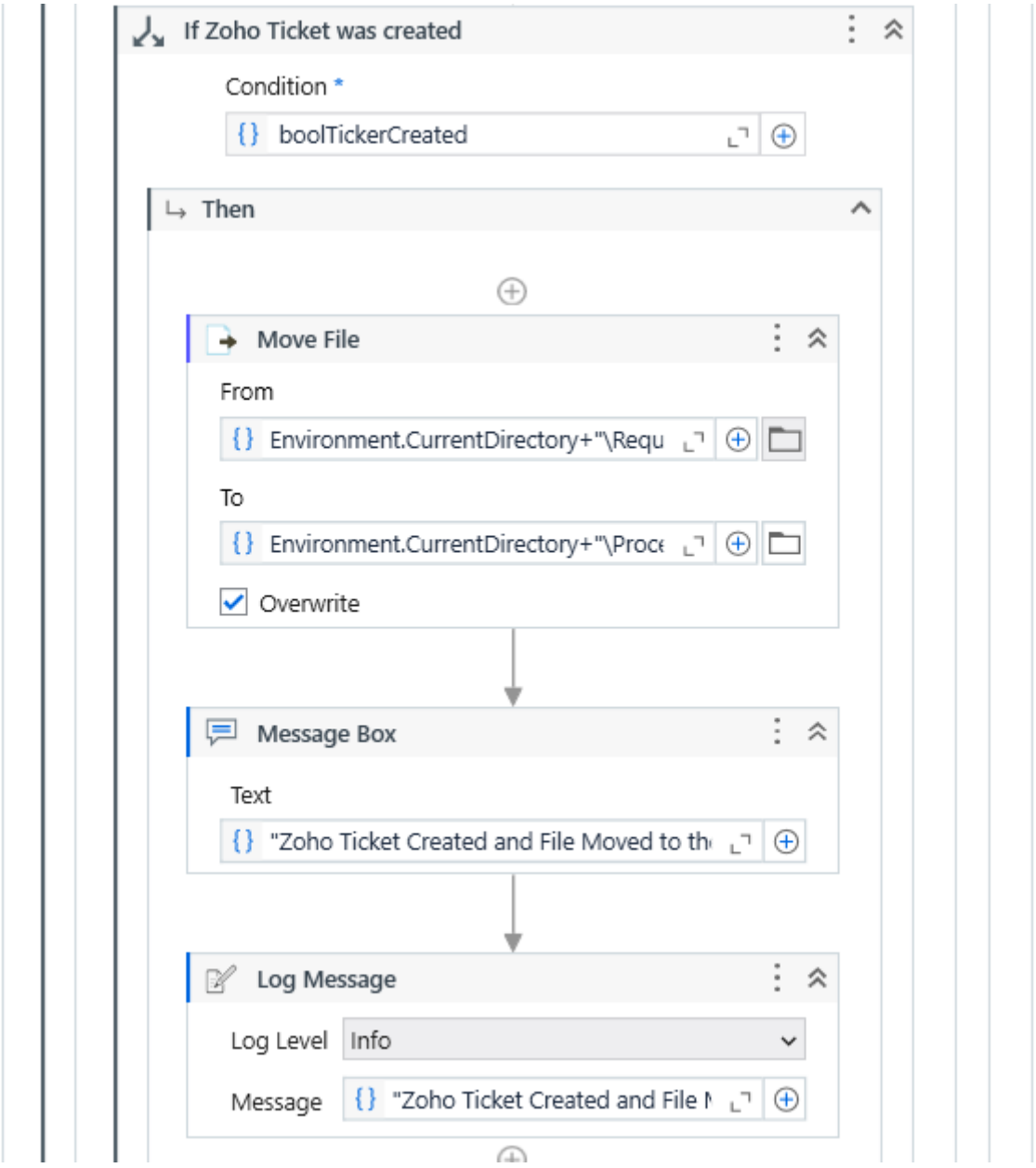

Fig 1.15 Checking Ticket Creation Status.

Step 14 - In the else part if Zoho desk ticket not created then a message is displayed as "Zoho Ticket not created and file is not processed yet. Please check the input request file and Use ALT+S to reprocess the same request."

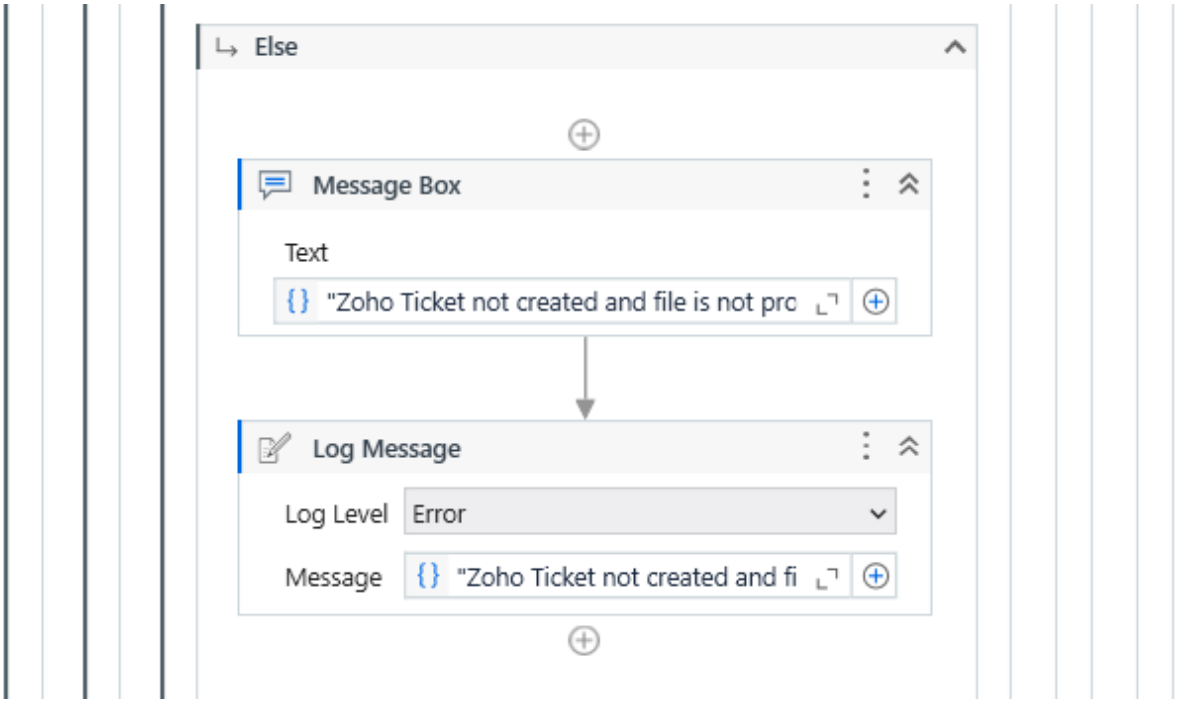

Fig 1.16 Text to display if Ticket not Created.

Step 15 – If there is no file found in the file exist activity a message box is added displaying "No Requests available to process."

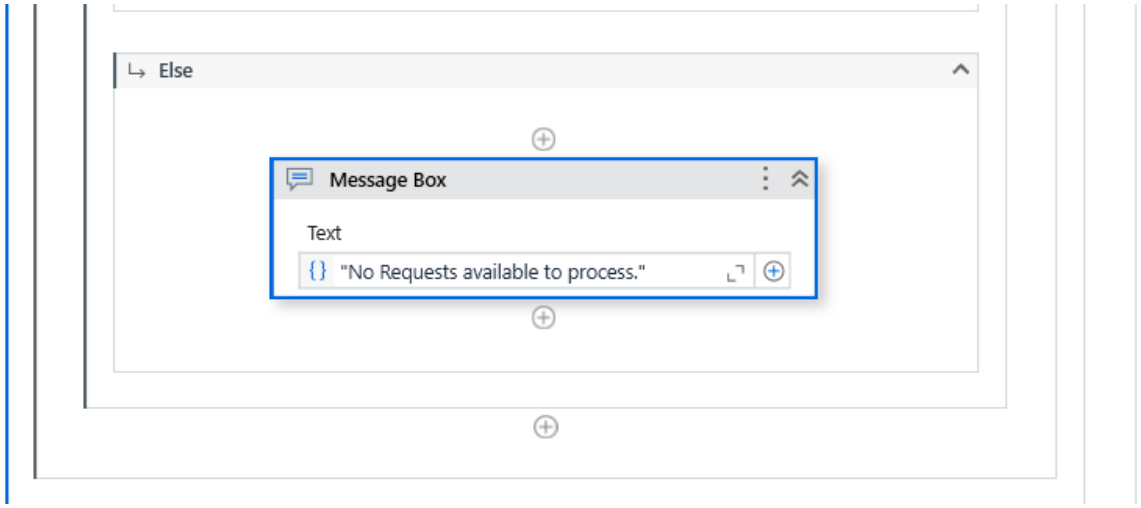

Fig 1.17 Text to display if data not found

OUTPUT:

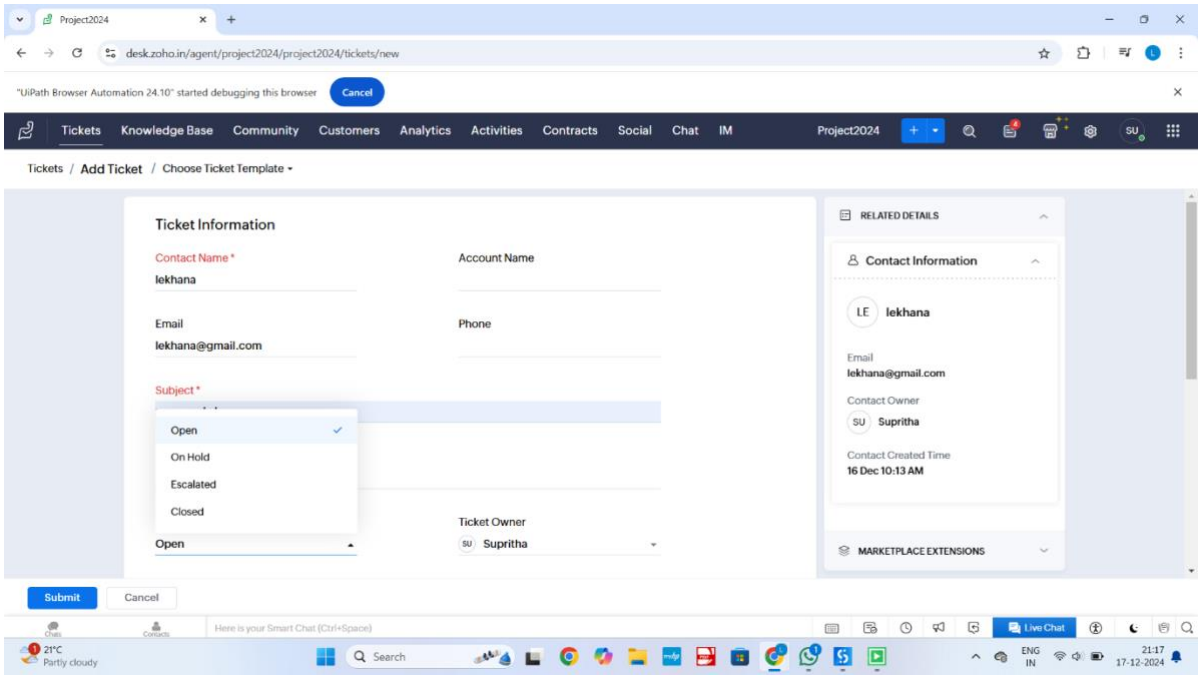

Fig 1.18 Data Entry in Zoho Desk

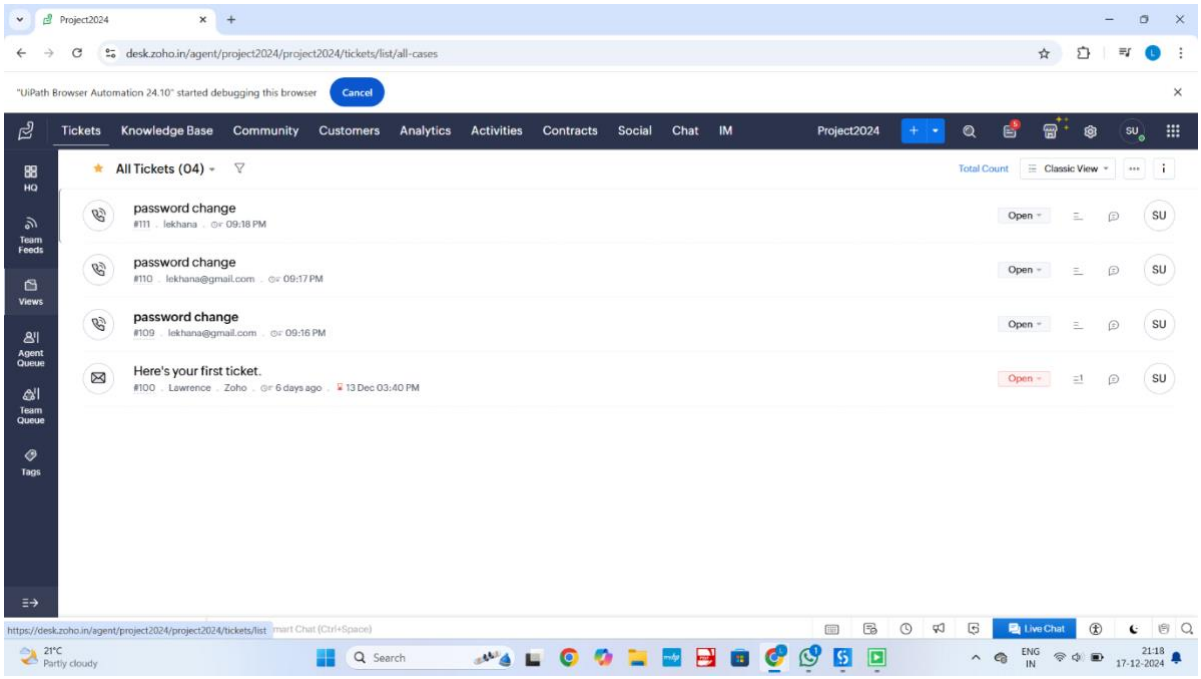

Fig 1.19 Ticket Created in Zoho Desk

APPENDIX-C

ENCLOSURES

1. Journal publication/Conference Paper Presented Certificates of all students.

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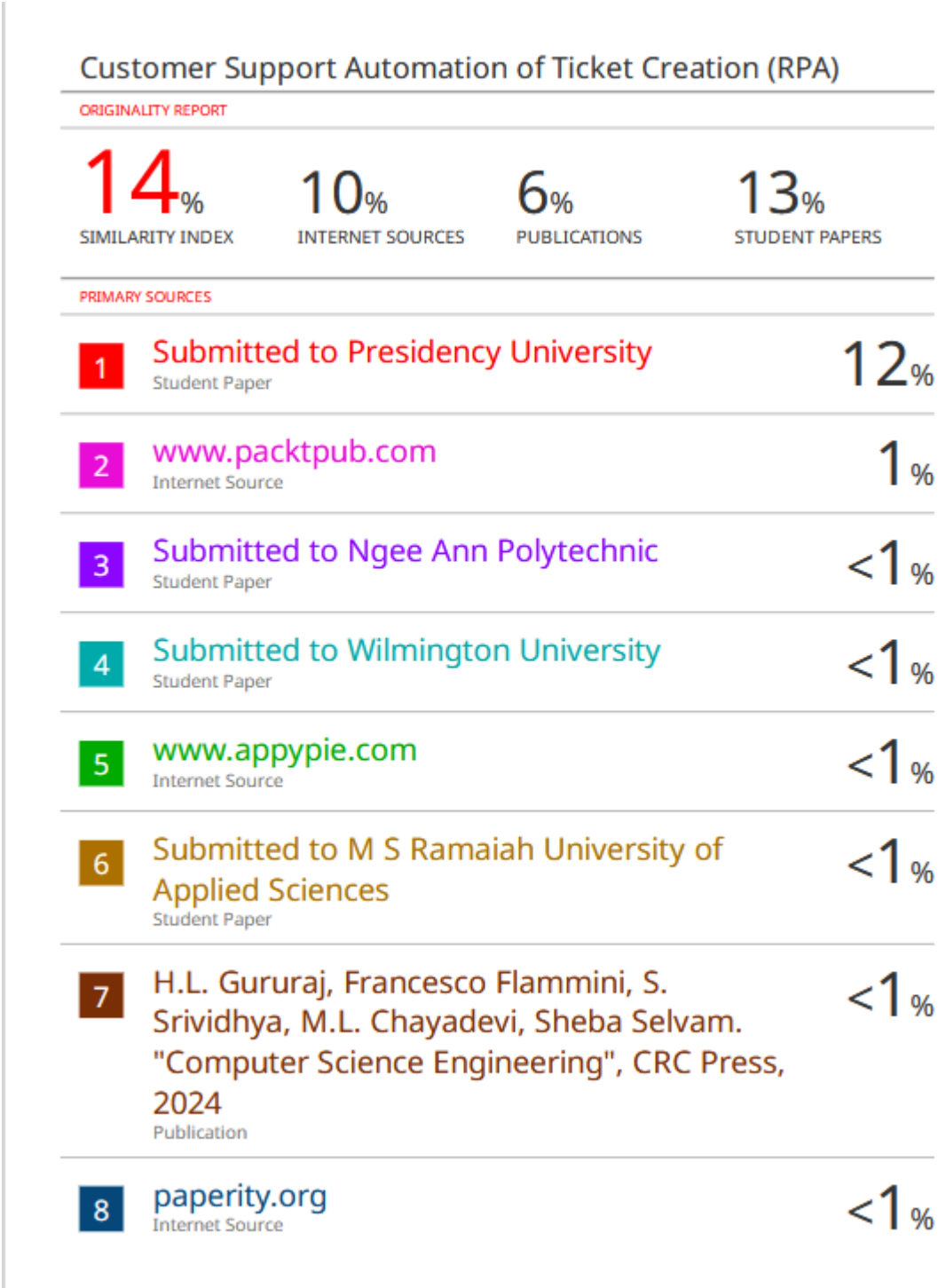

Customer Support Automation of Ticket Creation (RPA)

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4. Details of mapping the project with the Sustainable Development Goals (SDGs).

SDG 8: Decent Work and Economic Growth:

- **Increased Efficiency:** Automation can lead to increased efficiency in customer support, which can create more jobs in higher-skilled roles and promote economic growth.
- **Reduced Labor Costs:** Automating repetitive tasks can reduce labor costs for businesses, which can allow them to invest more in employee development or other areas.

SDG 9: Industry, Innovation, and Infrastructure:

- **Technological Advancement:** The idea utilizes technology- RPA to achieve business process change, thereby assisting in the advancements of technology.

SDG 11. Sustainable Cities and Communities

- Improved Service Delivery for the city and community is seen as business offers better service if it increases their customer service efficacy.

SDG 12 Responsible Consumption and Production

- **Resource Efficiency:** Automation can reduce the consumption of resources (time, labor) in customer support processes.