VIRTUAL HR ASSISTANT BOT

A PROJECT REPORT

Submitted by

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CHENNAI – 602105

BONAFIDE CERTIFICATE

Certified that this project report **"Virtual HR Assistant Bot"** is the bonafide work of **"SHAJINA A (220701257)"** who carried out the project work for the project work for the subject **OAI1903 – INTRODUCTION TO ROBOTIC PROCESS AUTOMATION** under my supervision.

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ABSTRACT

The Virtual HR Assistant Bot is an innovative Robotic Process Automation (RPA) solution developed using UiPath, designed to automate and streamline HR process, enhancing efficiency and reducing manual effort. The bot helps in RPA to perform tasks such as employee onboarding, leave management and responds to employee queries. By integrating with HR management systems and employing tools like SMTP mail receiver and AI capabilities for intelligent decision making, the bot ensures seamless operations. It automates routine tasks like a self-service portal for instant query resolution using Natural Language Processing (NLP), and maintains compliance by automating policy checks. It supports better decision-making. This solution not only reduces errors and saves time but also enhances the experience to focus on strategic initiatives. The project demonstrates the transformative potential of RPA in modern HR management.

ACKNOWLEDGEMENT

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

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LIST OF FIGURES

LIST OF ABBREVATIONS

ABBREVATION	ACCRONYM
RPA	Robotic Process Automation
AI	Artificial Intelligence
UI	User Interface
SMTP	Simple Mail Transfer Protocol

CHAPTER 1

INTRODUCTION

1.1 General

In today's data-driven world, the need for efficient and accurate analysis of large datasets is more critical than ever. Our project, the Virtual HR Assistant Bot, leverages the advanced capabilities of robotic process automation (RPA) to enhance the evaluation of the employees to apply for leave and to responding to the queries. By utilizing UiPath Studios, we have developed an automated process that incorporates SMTP for data input ensuring seamless leave management and query analysis.

This report provides a comprehensive overview of Virtual HR Assistant Bot detailing its design, functionality, and the innovative solutions implemented to address various challenges. By integrating automation with data analysis, our system is able to swiftly process and interpret extensive mail with application and query responses, offering valuable insights into the employees work preferences. Through this project, we aim to demonstrate the transformative potential of RPA in the domain of Virtual HR Assistant Bot.

1.2 Objective

The primary objective of the Virtual HR Assistant Bot is to reduce the manual effort by automating routine processes such as:

1. Provide a self-service platform for employees to access leave application, resolve queries, and perform routine tasks quickly and efficiently.
2. Implement natural language processing techniques for clear interpretation of query responses.
3. Streamline HR workflows to save time, optimize resource utilization, and increase overall productivity.
4. Deliver comprehensive and actionable insights through automated reports for informed decision making.

1.3 Existing System

In many organizations the process of maintaing the leave application can be done manually or by using basic tools like spreadsheets. This system has several limitations:

1. Manual Tasks: Repetitive tasks such as employee onboarding, data entry, and query processing required significant time and effort, delaying overall operations.

2. High error rate: Prone to human errors such as misinterpretation of queries.

3. Inefficiency: Consumes significant time and resources to analyze large volumes of datas.

4. Lack of Scalability: Difficult to handle a vast number of reviews efficiently.

This existing system often leads to delays in obtaining insights, affecting the ability to make timely and informed decisions about application and queries.

1.4. Proposed System

The proposed system automates the process of analyzing leave application using UiPath Studios. Key features of the system include:

1. Leave Management: A bot-enabled system to manage employee leave requests, track attendance, update records automatically, and notify managers for approvals or discrepancies.

2. Query Resolution: A self-service portal powered by natural language processing (NLP) to handle employee FAQs, policies, and procedural queries.

3. Dynamic Processing: Automatically schedules and processes queries at regular intervals to ensure up-to-date analysis.

4. Report Generation: Compiles analyzed data into comprehensive reports, providing actionable insights into employee's queries.

This proposed system addresses the inefficiencies of the existing manual application methods, offering a reliable and automated solution to enhance the accuracy and efficiency of queries.

CHAPTER 2

LITERATURE REVIEW

2.1 General

The importance of Virtual HR Assistant Bot in understanding the employee preferences and guiding industry decisions has been extensively documented in the literature. According to RPA in HR offers cost savings, enhances operational efficiency, and minimizes errors. Automation tools are particularly effective in tasks requiring high-volume data processing, such as employee leave management and query responses, which are otherwise prone to human errors in manual system. Traditional approaches to apply leave, while functional, often struggle to keep up with the sheer volume of records, especially in an era of instant online feedback and social media influence. Robotic Process Automation (RPA) has emerged as a transformative technology in recent years, revolutionizing industries by automating repetitive and rule-based tasks. By leveraging RPA tools like UiPath Studios, can reduce manual intervention, improve accuracy, and enhance efficiency in various domains, including query analysis.

Key studies and articles on query analysis and RPA emphasize:

1. Challenges of Manual Systems: Literature highlights challenges in traditional HR practices, including the inefficiency of manual processes, data silos, and high operational costs.

2. Impact of Automation: Studies demonstrate that automated systems lead to significant improvements in accuracy, operational speed, and resource allocation.

3. RPA in HR Assistant: Case studies illustrate the effective use of RPA in processing HR Assistant Bot, generating reports, and ensuring timely analysis of viewer feedback.

The Virtual HR Assistant Bot is a practical application of these insights. By automating the query process, the system aligns with research advocating the use of RPA for enhanced productivity and streamlined workflows in the corporate industry.

CHAPTER 3

SYSTEM DESIGN

3.1 General

The system design section outlines the structural and functional components of the Virtual HR Assistant Bot. It provides a detailed description of the system's architecture, the flow of operations, and the sequence of activities that ensure timely application of a leave. The system design ensures that the bot operates efficiently, accurately, and reliably, leveraging UiPath Studio's capabilities.

3.1.1 System Flow Diagram

The System Flow Diagram represents the overall workflow of the Virtual HR Assistant Bot illustrating the key steps involved from data input to query response.

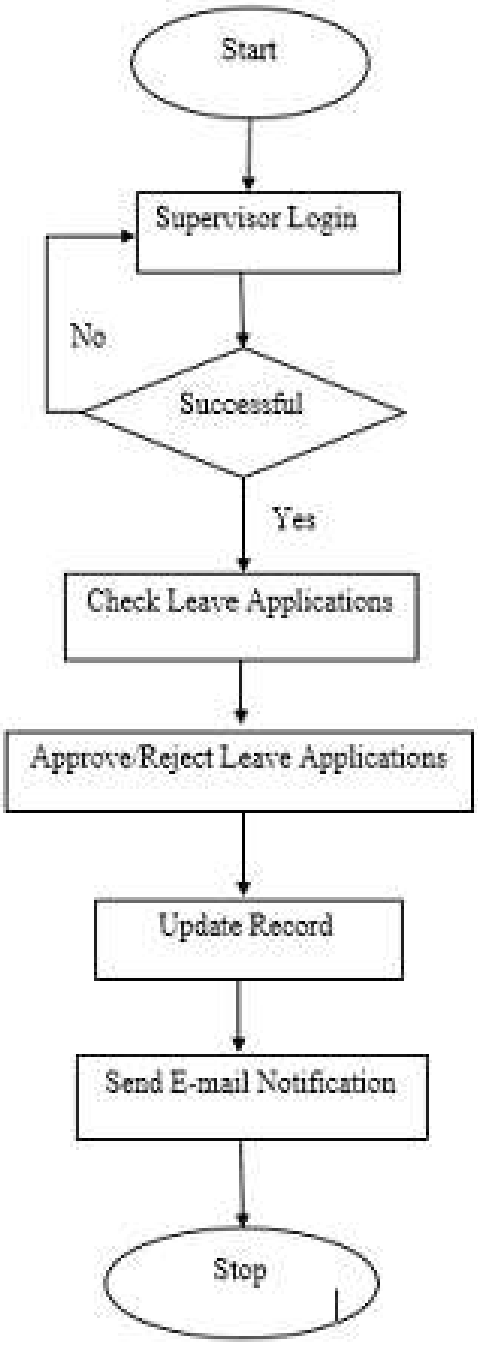
1. Data Input: The process begins with reading the application for leave from the Email.

2. Data Processing: The bot automatically writes the leave application and process to the queries of the employees.

3. Query Analysis: The freshers may don't know much about the company so if there is any query the bot automatically clarifies it by sending an Email.

4. Classify the Responses: The bot automatically sends an email to the freshers to clarify their queries.

5. Status Update: The bot updates the result in the form of an Email and the status of each processed queries.


Start
Supervisor Login
No
Successful
Yes
Check Leave Applications
Approve/Reject Leave Applications
Update Record
Send E-mail Notification
Stop

3.1.2 Architecture Diagram

The Architecture Diagram provides a high-level view of the system components and their interactions. It showcases the integration of UiPath Studio and Excel for data management.

1.User Interface Layer: Central platform for developing and managing the automation workflow.

2. SMTP mail: Sends mail to the HR for leave requests.

3. Query response: The bot will send mail to the freshers responding to the query.

4. Report Generation: Compiles the analyzed data into comprehensive reports

5. Triggers and Scheduler: Configured in UiPath Orchestrator to run the automation at specified intervals.

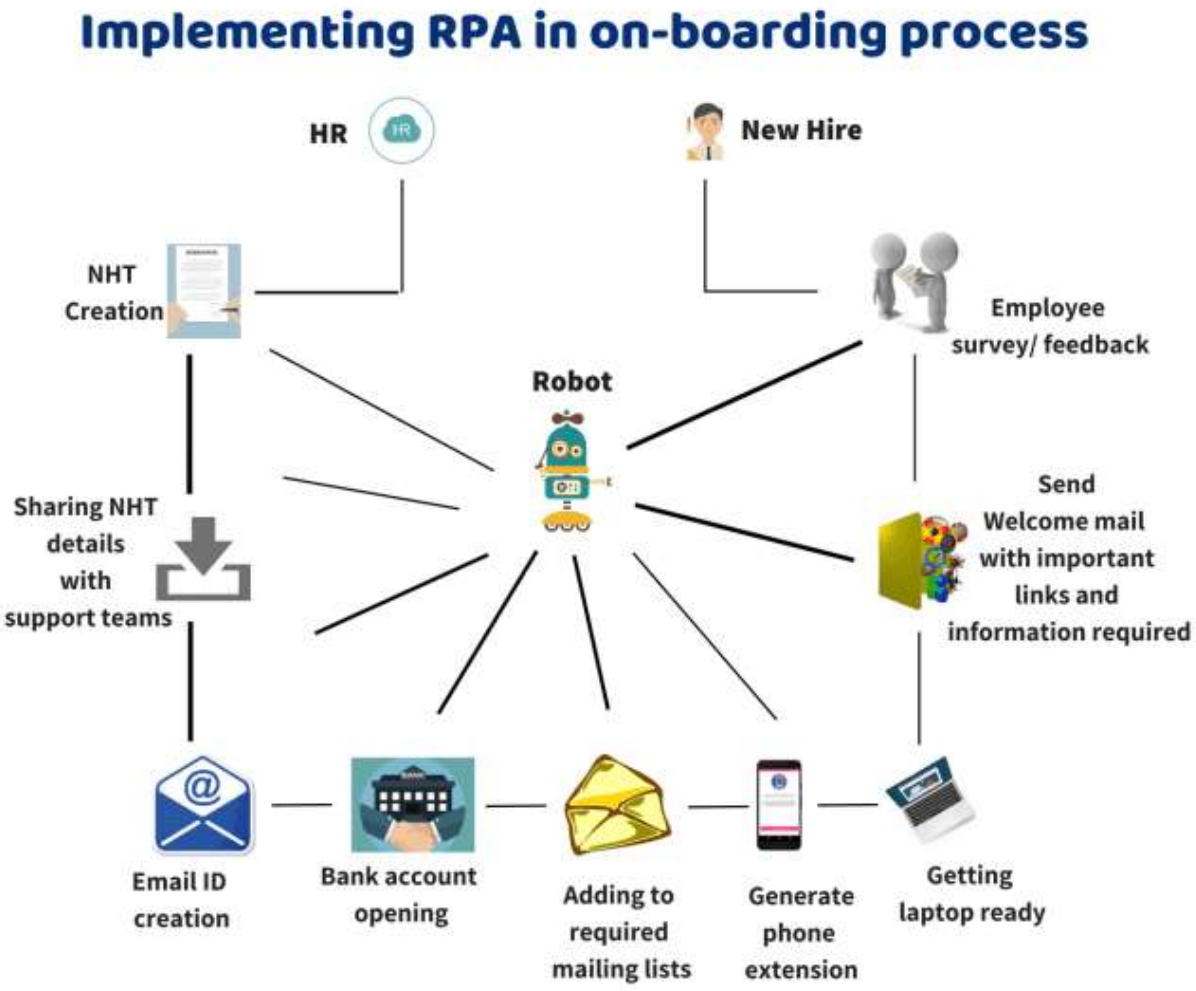
6. Error Handling: Ensures the system logs errors and continues processing the next review.

7. Chatbot: The bot uses natural language processing (NLP) to understand and respond to queries in real-time.

8. Email Integration: Employees can also interact with the system via email for tasks like submitting documents or asking questions.

9. Workflow:

- **Input**: Employees interact through the interface or submit documents.
- **Processing**: UiPath automates tasks by orchestrating workflows and integrating with systems.
- **Output**: Responses are provided to employees, data is updated in HRMS, and analytics are displayed in dashboards.


Implementing RPA in on-boarding process
HR
New Hire
NHT Creation
Employee survey/ feedback
Robot
Sharing NHT details with support teams
Send Welcome mail with important links and information required
Email ID creation
Bank account opening
Adding to required mailing lists
Generate phone extension
Getting laptop ready

3.1.3 Sequence Diagram

The Sequence Diagram depicts the step-by-step interaction between the bot and the system components for analyzing movie reviews.

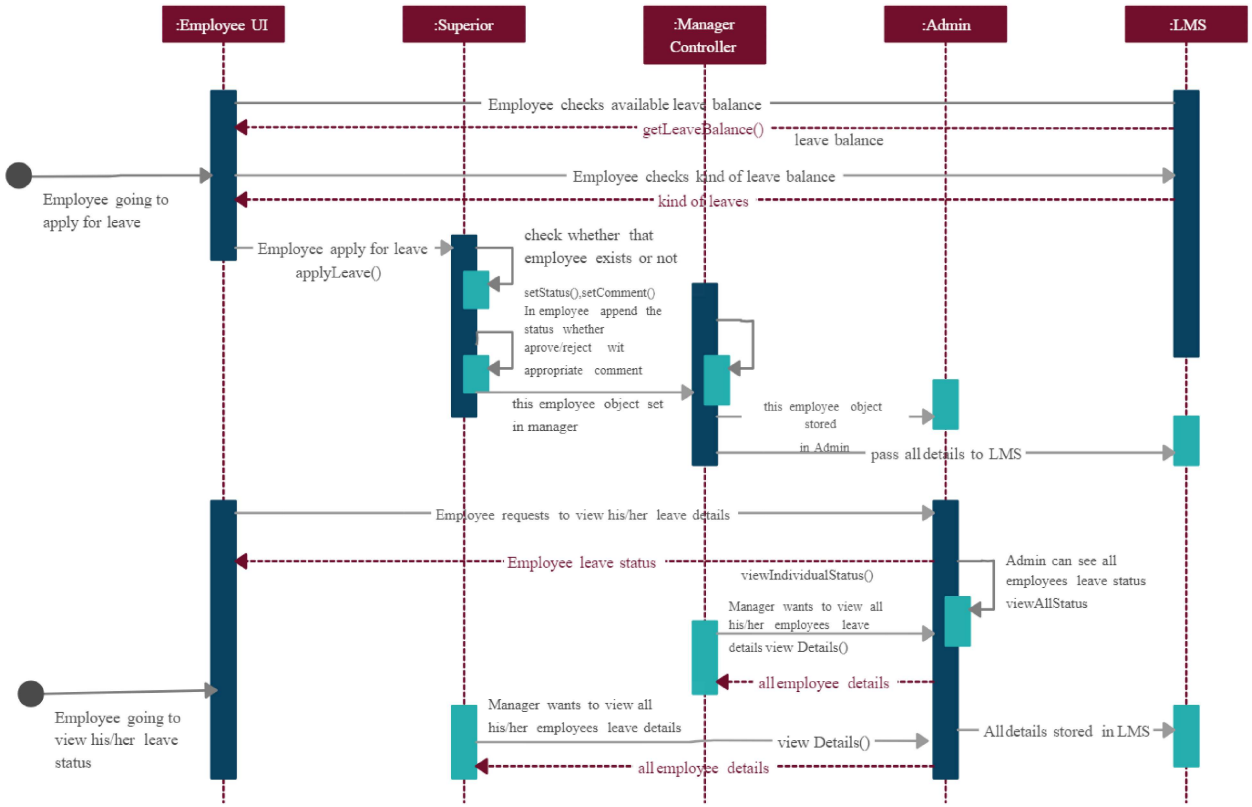
1. UiPath Bot: The automation engine that processes tasks, interacts with other systems, and handles workflow orchestration.

2. HR Management System (HRMS): The central database for storing and managing employee data, policies, and records.

3. Initiating a Request: The employee submits a request (e.g., applying for leave, querying salary details, or updating personal information) via the Self-Service Portal.

4. Generating a Response or Output: After completing the task, the bot generates the required output, such as updating the HRMS, confirming the action, or preparing a response.

5. Returning the Result to the Employee: The output is sent back to the Self-Service Portal, which presents the result (e.g., a confirmation message or requested data) to the employee.


:Employee UI
:Superior
:Manager Controller
:Admin
:LMS
Employee checks available leave balance
getLeaveBalance()
leave balance
Employee checks kind of leave balance
kind of leaves
Employee going to apply for leave
Employee apply for leave
applyLeave()
check whether that employee exists or not
setStatus(),setComment()
In employee append the status whether aprove/reject wit appropriate comment
this employee object set in manager
this employee object stored in Admin
pass all details to LMS
Employee requests to view his/her leave details
Employee leave status
viewIndividualStatus()
Admin can see all employees leave status viewAllStatus
Manager wants to view all his/her employees leave details view Details()
all employee details
Employee going to view his/her leave status
Manager wants to view all his/her employees leave details
view Details()
All details stored in LMS
all employee details

CHAPTER 4

PROJECT DESCRIPTION

4.1 Methodology

The methodology for this project follows a structured approach to ensure efficient development, testing, and deployment of the Virtual HR Assistant Bot using UiPath Studio. The methodology is divided into key phases:

1. Requirement Analysis: Gather and analyze the specific needs of HR operations.

2. Process Mapping and Design: Visualize the workflows for each HR task to be automated. Use process mapping tools to design workflows for tasks like leave management, query resolution, and report generation.

3. Development: Build the Virtual HR Assistant Bot using UiPath Studio. Develop workflows in UiPath for task automation. Integrate Natural Language Processing (NLP) for chatbot functionalities.

4. Testing: Ensure the bot performs accurately and efficiently. Conduct unit testing for individual workflows (e.g., payroll automation, leave approval). Perform integration testing to validate interactions with HRMS and external systems. Test cases, bug reports, and a validated bot ready for deployment.

5. Deployment: Deploy the bot into the live HR environment. Set up the UiPath Orchestrator for scheduling and monitoring workflows. Deploy the bot across HR systems and ensure smooth integration. Train HR teams on how to use and monitor the bot.

6. Maintenance: Ensure long-term functionality and adaptability of the bot. Established monitoring and logging mechanisms to track the system's performance. Periodically updated the system to accommodate changes in the contract data format or new analytical requirements.

4.1.1 Modules

The project is divided into the following modules:

1. Data Input Module

- Purpose: Reads the input from the assign.
- Implementation: Assigns tasks such as equipment setup or training scheduling.

2. Leave Management Module

- Purpose: Handles leave requests, validates them against leave policies, updates attendance records, and notifies managers for approvals.
- Implementation: Leave request processing, Policy validation.

3. Employee Query Resolution Module

- Purpose: Uses Natural Language Processing (NLP) to address employee FAQs, provide information on HR policies, and resolve queries related to leaves, payroll, or policies.
- Implementation: Chatbot interface, FAQ database integration.

4. HR Analytics Module

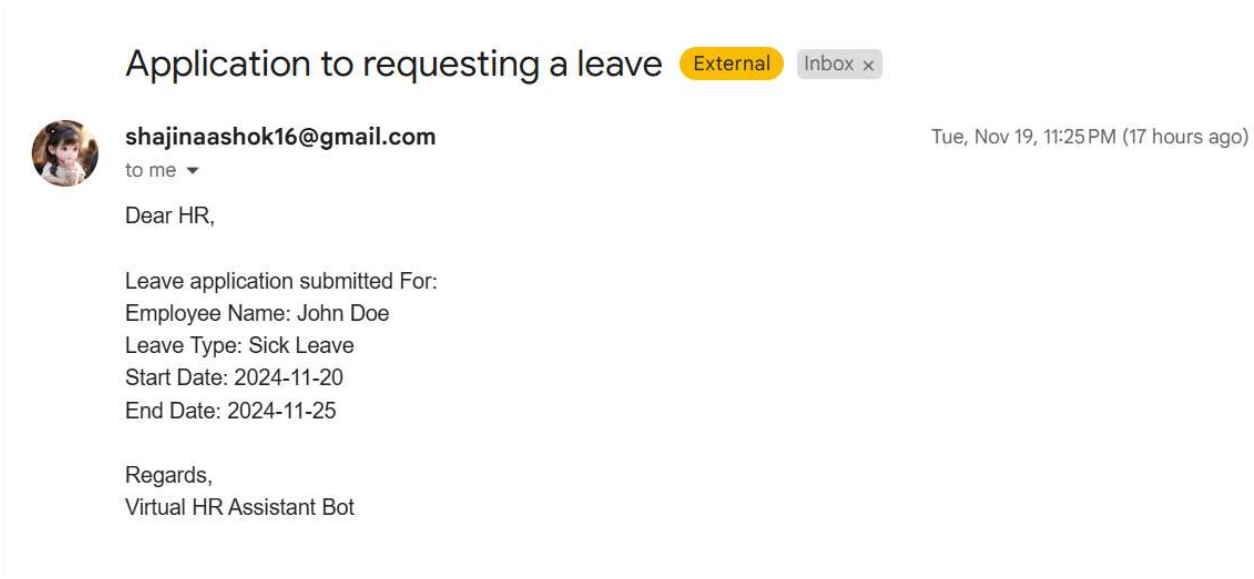
- Purpose: Generates dashboards and reports for key HR metrics such as employee turnover, attendance, and productivity. Provides real-time insights for decision-making.
- Implementation: Interactive dashboards, Trend analysis.

5. Exit Management Module

- Purpose: Automates resignation handling, clearance processes, and exit interviews.
- Implementation: Clearance checklist automation, Feedback collection.

CHAPTER 5

OUTPUT SCREENSHOT



shajinaashok16@gmail.com 12:23 AM (16 hours ago)

to me

Employee Queries

shajinaashok16@gmail.com 12:25 AM (16 hours ago)

to me

Dear Fresher,

You recently asked: How to apply for leave?

Here Is our response:
To apply For leave, log In To the HR portal, navigate To 'Leave Application,' and submit the details.

If you have more questions, feel free To reach Out anytime!

Regards,
Virtual HR Assistant Bot

CHAPTER 6

CONCLUSION

A virtual HR assistant bot is a transformative tool that streamlines HR processes, enhances employee engagement, and boosts organizational efficiency. By automating repetitive tasks, such as answering FAQs, managing leave requests, and facilitating onboarding, it frees HR professionals to focus on strategic initiatives. With features like 24/7 availability, personalized interactions, and seamless integration with HR systems, the bot improves the overall employee experience while ensuring consistent and accurate communication.

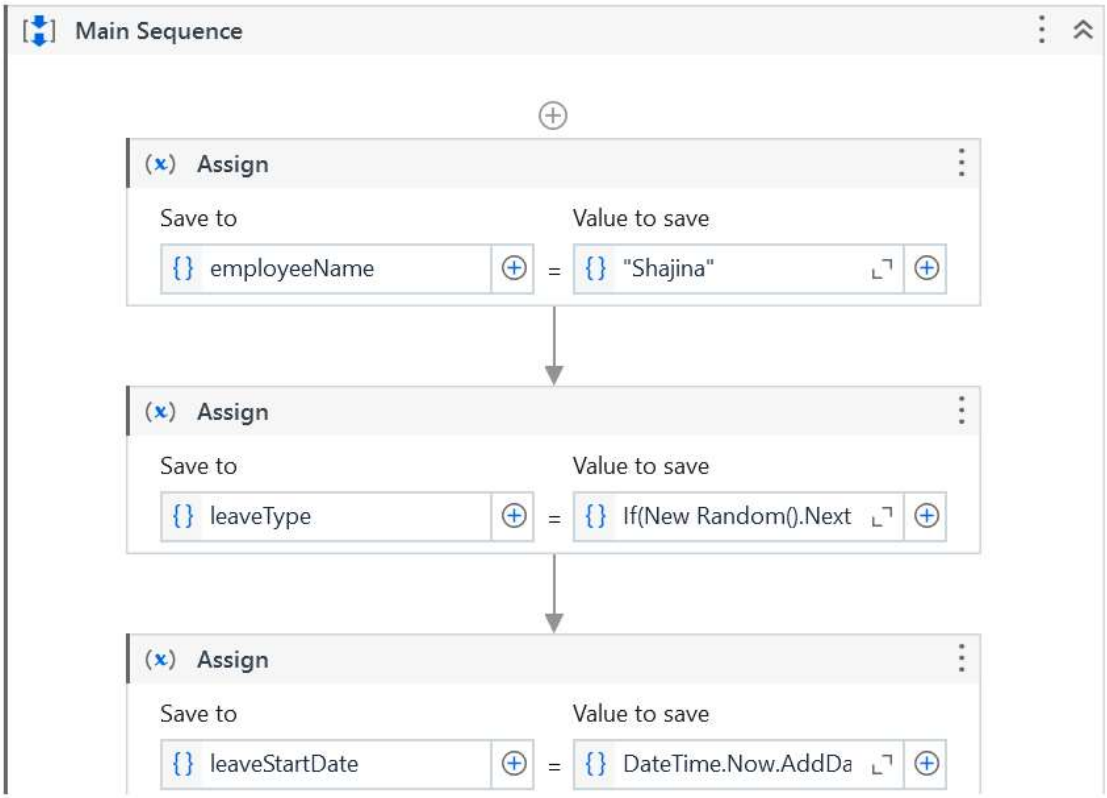
The project's real-time updates enhance transparency during analysis, providing stakeholders with a user-friendly interface for systematic documentation in email reports. By automating repetitive tasks, the analyzer frees stakeholders to focus on more nuanced aspects of review interpretation and decision-making.

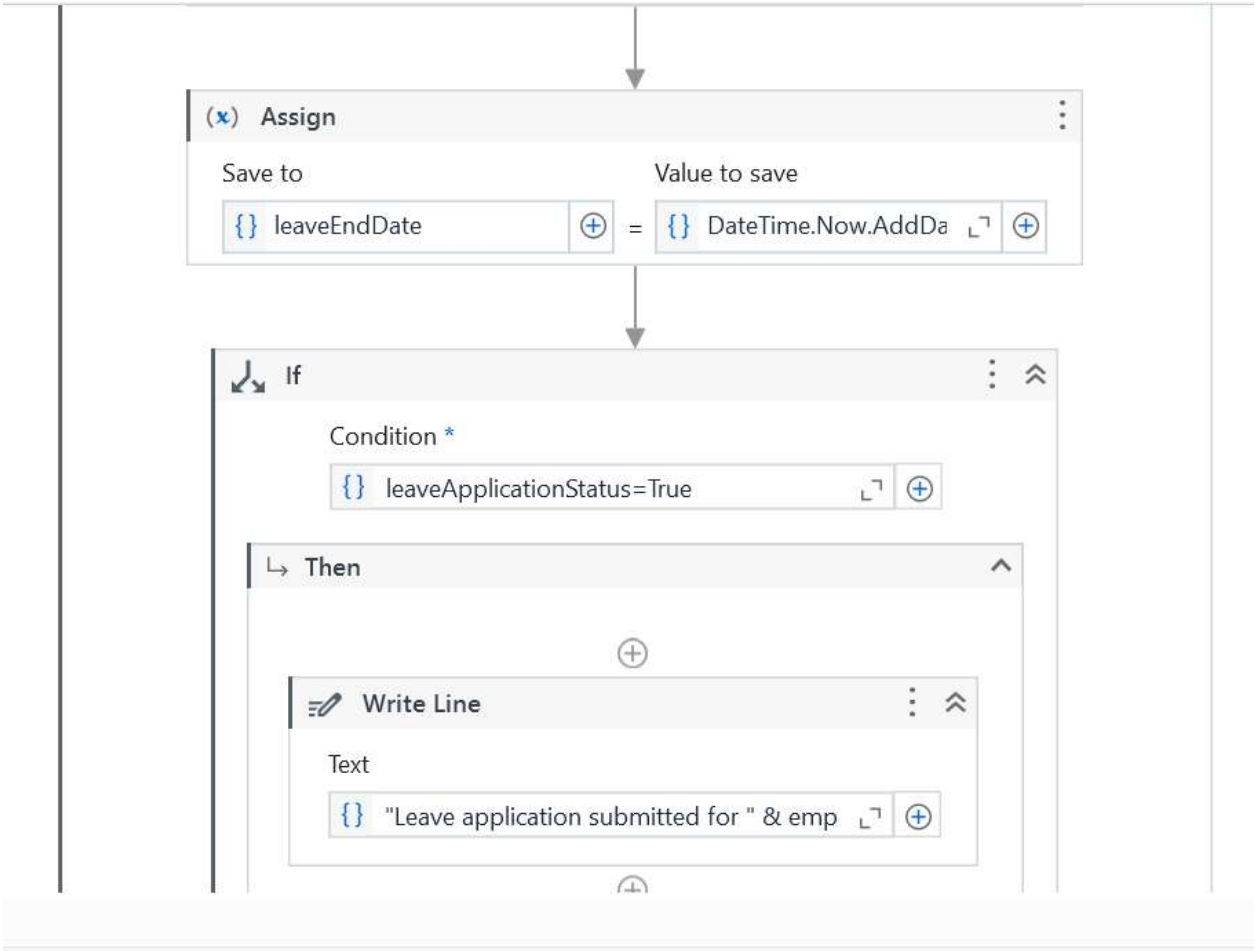
Despite its efficiency, the system may face challenges in contexts requiring leave application and query responses. Ongoing algorithm updates are crucial to keep pace with evolving review trends and employee queries. Nonetheless, the project lays a foundation for automated review analysis, contributing to broader discussions about AI in the entertainment industry. The successful implementation marks a significant advancement in leveraging technology to gain valuable insights and make informed decisions based on the query responses.

In conclusion, adopting a virtual HR assistant not only simplifies workforce management but also sets the stage for a more agile and responsive HR department, driving productivity and employee satisfaction.

The Virtual HR Assistant Bot not only enhances the query analysis process but also contributes to better time management, resource optimization, and effective responsive analysis within the organization. This project showcases the potential of RPA in automating analytical tasks and improving operational efficiency.

APPENDIX
PROCESS WORKFLOW

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{} DateTime.Now.AddDa
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Condition *
{} leaveApplicationStatus=True
Then
Write Line
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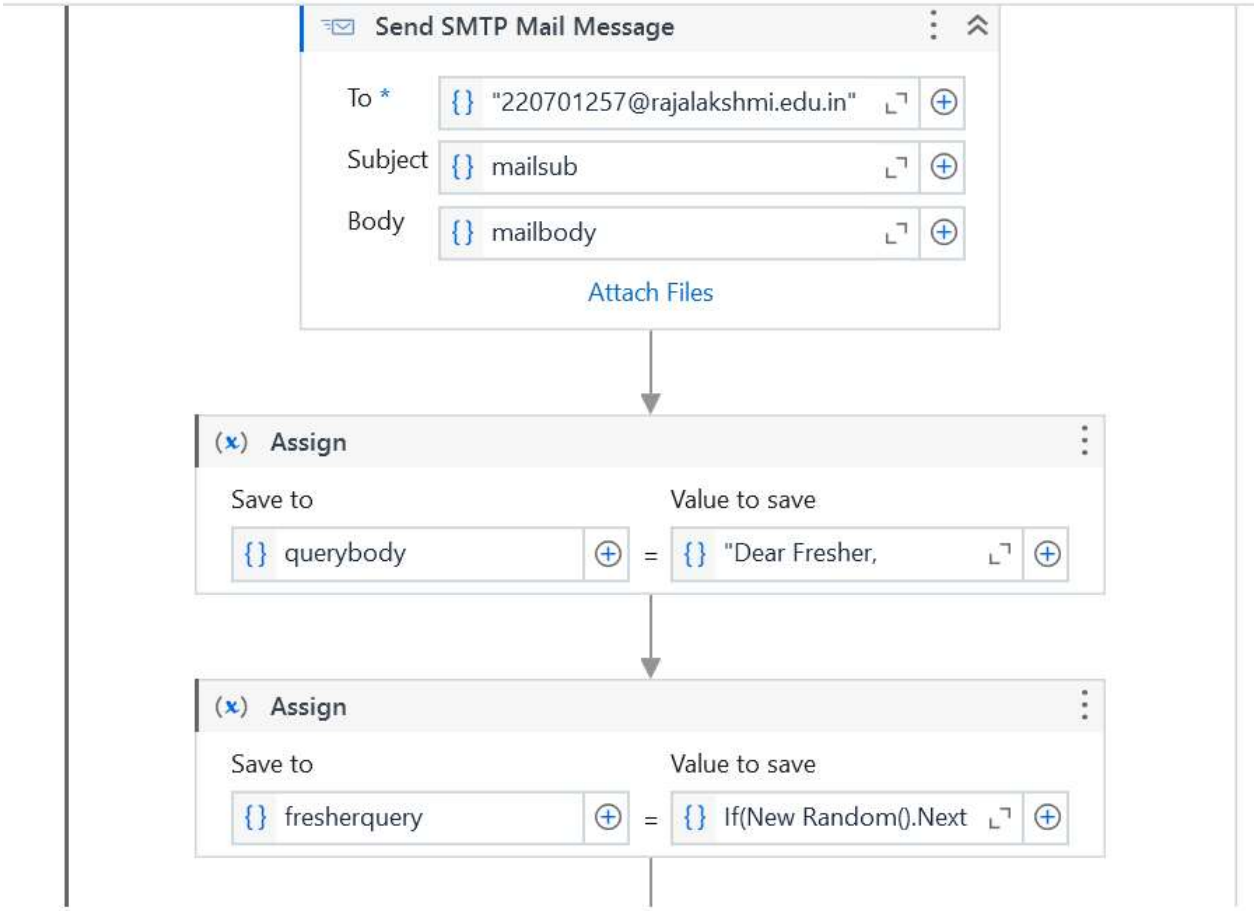
{} "Leave application submitted for " & emp


Send SMTP Mail Message
To *
"220701257@rajalakshmi.edu.in"
Subject
mailsub
Body
mailbody
Attach Files
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=
"Dear Fresher,
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Value to save
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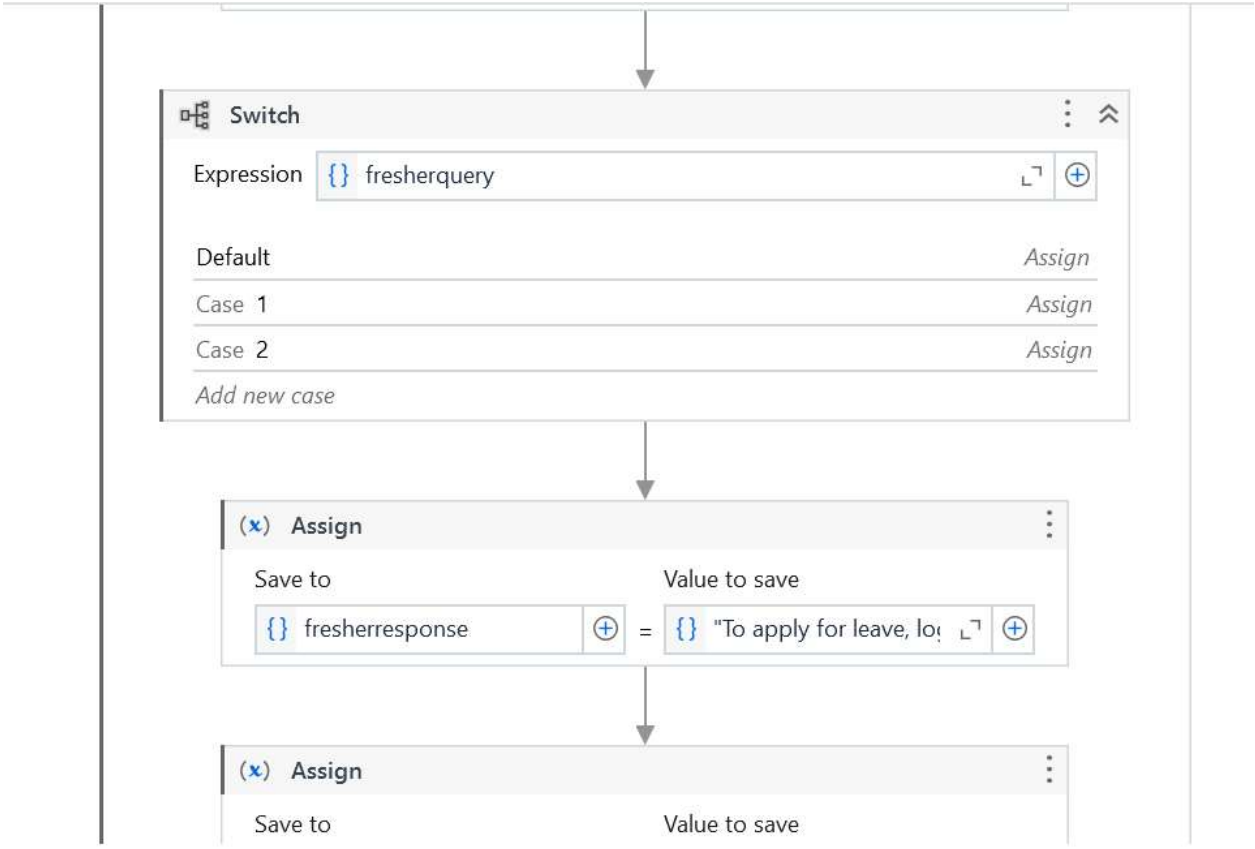
If(New Random().Next


Switch
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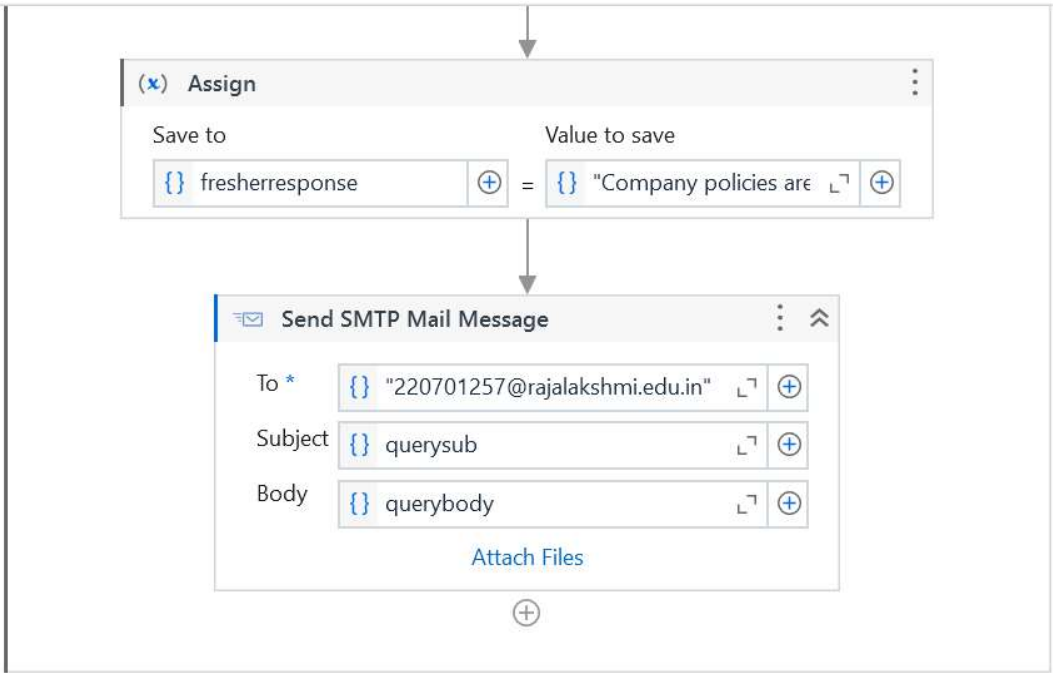
Assign
Save to
Value to save
fresherresponse
=
"Company policies are
Send SMTP Mail Message
To *
"220701257@rajalakshmi.edu.in"
Subject
querysub
Body
querybody
Attach Files

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11. Chandrasekaran, A., & Kandavel, K. (2022). "Impact of Artificial Intelligence in HR Systems." These references should provide a strong foundation for your project, covering both the theoretical aspects of Virtual HR Assistant Bot and practical implementation using UiPath and RPA technologies.