SALARY INCREMENT SYSTEM

A PROJECT REPORT

Submitted by

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in partial fulfillment for the course

OAI1903 - INTRODUCTION TO ROBOTIC PROCESS AUTOMATION

for the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND DESIGN

RAJALAKSHMI ENGINEERING COLLEGE

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NOVEMBER 2024

BONAFIDE CERTIFICATE

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ABSTRACT

The "Automated Salary Increment Notification System Using UiPath" is an innovative project designed to streamline the process of salary updates and employee notifications within organizations. Traditional salary management and communication workflows often involve manual interventions that are time-consuming, error-prone, and inefficient. This project leverages Robotic Process Automation (RPA) to automate the entire workflow, from calculating salary increments based on departmental criteria to notifying employees via personalized emails. By using UiPath as the core automation platform, this system eliminates redundancy and enhances operational efficiency, allowing HR professionals to focus on strategic activities instead of repetitive tasks.

The system operates in three stages: reading employee data from an Excel file, applying department-specific salary increments, and sending automated email notifications to employees. Salary increment percentages are dynamically assigned based on department-specific policies, ensuring flexibility and compliance with organizational standards. The updated salary details are saved into a new Excel sheet for record-keeping, while personalized email notifications are sent to employees, acknowledging their hard work and encouraging them to achieve further milestones. The emails include motivational messages and highlight the new salary, formatted in a professional and engaging manner to foster employee satisfaction and morale.

This project demonstrates the practical application of UiPath's capabilities in automating critical HR processes, offering scalability and accuracy. By integrating tools such as Excel activities and SMTP mail functionalities, it creates a seamless workflow that can be easily customized for different organizations. The solution reduces processing time, minimizes human error, and ensures timely communication, making it an ideal choice for companies looking to modernize their salary management systems. The project not only enhances efficiency but also reinforces an organization’s commitment to recognizing and rewarding its employees' efforts in a meaningful way.

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 **Mr. S. Meganathan, B.E, F.I.E.,** our Vice Chairman **Mr. Abhay Shankar Meganathan, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) Thangam Meganathan, Ph.D.,** for providing us with the requisite infrastructure and sincere endeavoring in educating us in their premier institution.

Our sincere thanks to **Dr. S.N. Murugesan, M.E., Ph.D.,** our beloved Principal for his kind support and facilities provided to complete our work in time. We express our sincere thanks to **Dr. P. Kumar, M.E., Ph.D.,** Professor and Head of the Department of Computer Science for her guidance and encouragement throughout the project work. We convey our sincere and deepest gratitude to our internal guides, **Mrs. G. M. Sasikala, M.E.,** Assistant Professor (SG), Department of Computer Science and Engineering, Rajalakshmi Engineering College for their valuable guidance throughout the course of the project. We are very glad to thank our Project Coordinators, **Dr. N. Durai Murugan, M.E., Ph.D.,** Associate Professor, and **Mr. B. Bhuvaneswaran, M.E.,** Assistant Professor (SG), Department of Computer Science and Engineering for their useful tips during our review to build our project.

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LIST OF ABBREVIATIONS

ABBREVIATION	ACRONYM
RPA	Robotic Process Automation
AI	Artificial Intelligence
API	Application Programming Interface
CV	Computer Vision
OCR	Optical Character Recognition

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In today's fast-paced corporate environment, managing human resource processes efficiently is critical to ensuring employee satisfaction and organizational success. Salary management, a core aspect of HR operations, often involves repetitive and time-consuming tasks that are prone to human errors. These inefficiencies can lead to delays, inconsistencies, and employee dissatisfaction, negatively impacting morale and productivity. The **"Automated Salary Increment Notification System Using UiPath"** addresses these challenges by introducing a streamlined, automated solution for calculating salary increments and notifying employees, thereby transforming traditional workflows into a highly efficient process.

This project leverages the capabilities of Robotic Process Automation (RPA) using UiPath to automate the workflow from data extraction to communication. By reading employee details from an Excel sheet, applying department-specific salary increments, and updating the records seamlessly, the system ensures that salary revisions are calculated accurately and processed efficiently. Furthermore, personalized emails are automatically generated and sent to employees, highlighting their new salaries and including motivational messages to recognize their contributions. These automated notifications foster transparency and boost employee morale, reinforcing the organization's commitment to its workforce.

The project showcases the power of automation in reducing manual effort, eliminating human error, and improving the overall accuracy and speed of HR processes. By integrating advanced UiPath functionalities such as data manipulation and SMTP email services, the system provides a scalable and customizable solution suitable for organizations of all sizes. This innovative approach not only optimizes internal workflows but also strengthens employee engagement, setting a benchmark for how automation can transform HR operations.

1.2 OBJECTIVE

The primary objective of this project is to create an automated system for processing salary increments and notifying employees that is accurate, efficient, and adaptable. The specific objectives include:

Streamlining Salary Management: Automate data retrieval, salary increment calculations, and email notifications to reduce manual intervention and repetitive tasks.

Ensuring Accuracy and Compliance: Apply department-specific increment rules consistently and update salary records accurately to maintain organizational compliance and reduce human errors.

Enhancing Scalability: Design a system capable of handling large datasets, making it suitable for organizations of all sizes to process salary updates efficiently.

Improving Employee Communication: Automate the generation and delivery of personalized email notifications with salary details and motivational messages, ensuring timely and professional communication.

Promoting Operational Efficiency: Minimize processing time, human effort, and resources required for salary updates, providing a cost-effective and streamlined solution for HR processes.

By achieving these objectives, this project demonstrates the practical application of robotic process automation (RPA) to modernize HR workflows and enhance organizational productivity.

1.3 EXISTING SYSTEM

Existing System

The current process of managing salary increments in many organizations is manual and time-consuming. Key characteristics of the existing system include:

1. Manual Salary Calculations: HR teams calculate increments manually, increasing the risk of errors.
2. Inefficient Record Updates: Updating salary records in Excel or other databases requires repetitive, labor-intensive tasks.
3. Inconsistent Notifications: Emails informing employees about salary changes are often written individually, leading to delays and inconsistencies.
4. Time-Consuming Workflow: The entire process consumes significant time, especially for organizations with large workforces.
5. Limited Scalability: The manual nature of the process makes it challenging to handle larger datasets efficiently.

1.4 PROPOSED SYSTEM

The proposed system automates salary processing and employee notifications using UiPath RPA technology. Key features of the proposed system include:

1. Automated Calculations: Applies department-specific salary increments automatically, ensuring accuracy and consistency.
2. Streamlined Record Management: Reads employee data, updates salary details, and saves the revised data to a new Excel file efficiently.
3. Personalized Notifications: Generates and sends personalized emails to employees with updated salary details and motivational messages.
4. Improved Efficiency: Reduces the time and effort required to process increments and eliminates manual errors.
5. Scalable Solution: Handles large datasets with ease, making it suitable for organizations of all sizes.

This automated system enhances operational efficiency, ensures consistency, and promotes better employee engagement by modernizing the salary increment process.

CHAPTER 2 LITERATURE REVIEW

2.1 Survey on Robotic Process Automation (RPA) in Education:

Robotic Process Automation (RPA) has emerged as a powerful tool in automating repetitive tasks across various industries, including document generation and management. In the context of ID card generation, RPA proves to be a transformative solution, significantly reducing manual efforts while enhancing scalability and accuracy. Existing studies demonstrate how RPA can streamline workflows such as record management, template-based document creation, and data validation. However, challenges persist in addressing dynamic customization and ensuring compatibility across diverse file formats.

One study highlights the growing importance of RPA in handling document workflows in educational institutions and businesses. For example, RPA has been effectively implemented to automate result generation and report card creation, illustrating its utility in structured, data-driven tasks. Similarly, tools like UiPath have demonstrated cost-effectiveness by automating repetitive processes within a limited budget, making them accessible to resource-constrained organizations. These findings underscore the potential of RPA to address inefficiencies in traditional ID card generation workflows.

2.2 Survey on Template-Based Document Automation:

Template-based automation is a well-researched area, particularly in contexts requiring uniform document generation. Existing systems typically rely on predefined templates and manual data entry, leading to inefficiencies. Research has shown that automation frameworks integrated with widely-used tools, such as Microsoft Excel and Word, can overcome these inefficiencies.

One study from IJITEE describes how RPA can be utilized to populate templates dynamically using input data from structured sources like Excel. The study highlights that combining automation with template-based systems improves the consistency and accuracy of outputs, particularly in high-volume document generation tasks such as certificates, reports, and ID cards. The findings reinforce the idea that leveraging automation not only streamlines the process but also ensures scalability and ease of customization.

2.3 Survey on Error Reduction in Document Workflows:

[1] The accuracy and reliability of automated document generation systems are critical in reducing human error. Studies show that errors in manual processes, such as misspelled names or incorrect formatting, can lead to significant inefficiencies. Research into RPA-driven solutions reveals that these systems can eliminate such errors by automating data extraction and template population.

[2] For instance, one paper outlines how automation systems validate input data and flag inconsistencies before document generation, ensuring error-free outputs. This approach is particularly relevant to ID card generation, where uniformity and accuracy are essential. These insights validate the role of RPA in minimizing errors and enhancing overall system reliability

2.4 Summary of the Intersection of RPA and Document Automation:

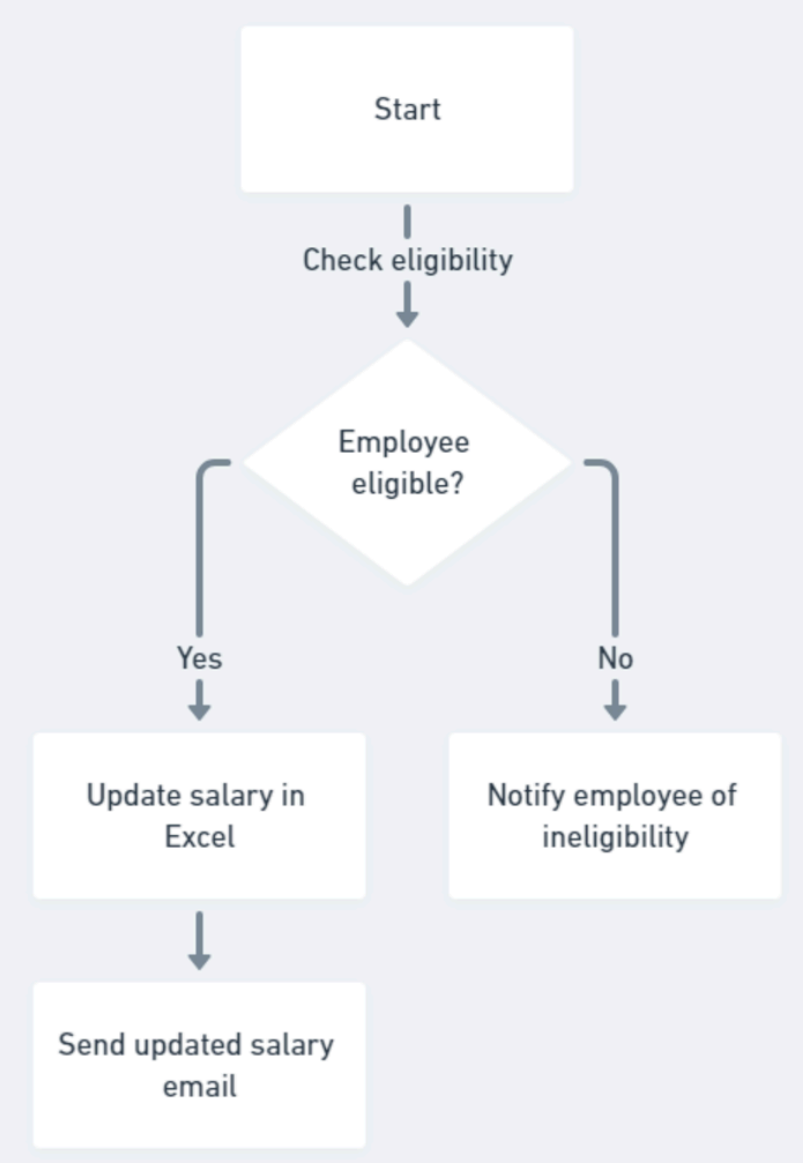
The proposed ID Card Generator project bridges the gaps identified in the literature by leveraging RPA for efficient document generation. By integrating UiPath with Microsoft Excel and Word, the system automates the end-to-end workflow of ID card creation. The project addresses existing challenges, such as scalability, error reduction, and customization, while providing a cost-effective and user-friendly solution.

This system builds upon the insights from previous research, demonstrating the transformative potential of RPA in document automation. The combination of structured data inputs, dynamic template population, and automated PDF generation positions this project as a pioneering solution for modern document management needs.

CHAPTER 3 SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

A flowchart is a type of diagram that represents an algorithm, workflow or process. The flowchart shows the steps as boxes of various kinds, and their order by connecting the boxes with arrows. This diagrammatic representation illustrates a solution model to a given problem. The system flow diagram for this project is in Fig. 3.1.

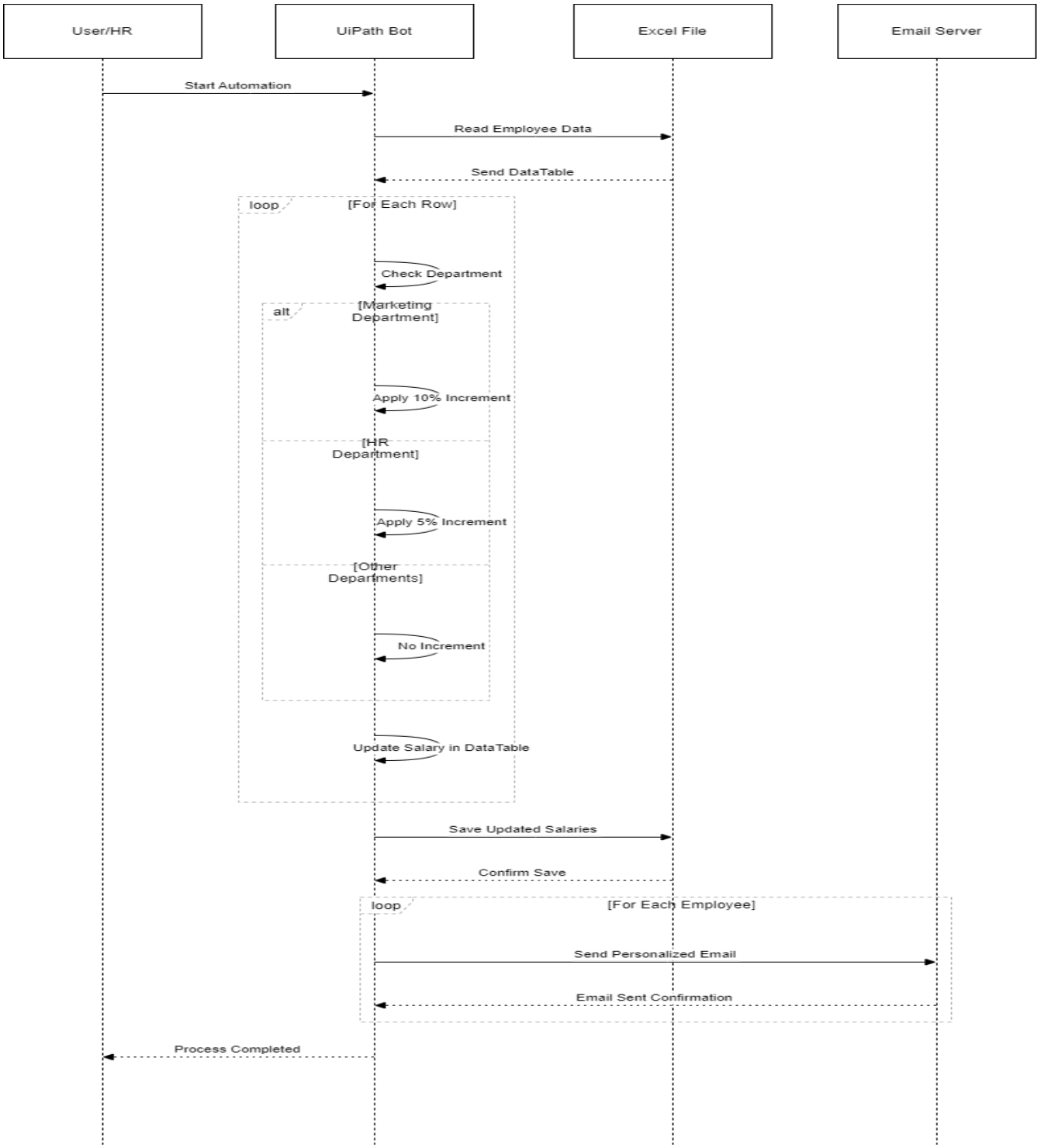


3.2 ARCHITECTURE DIAGRAM

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.

3.3 SEQUENCE DIAGRAM

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



CHAPTER 4 PROJECT DESCRIPTION

The **"Automated Salary Increment Notification System Using UiPath"** is a robotic process automation (RPA) solution designed to streamline salary management workflows in organizations. This system automates the process of reading employee data from an Excel file, calculating department-specific salary increments, and updating the records in a new Excel sheet. Additionally, it generates and sends personalized email notifications to employees, highlighting their updated salary and including motivational messages.

By leveraging UiPath's advanced automation capabilities, the project reduces manual intervention, ensures accuracy in calculations, and saves significant time and effort. The system is scalable, allowing it to handle large datasets, and is adaptable to the specific requirements of different organizations, making it a cost-effective and efficient solution for modern HR processes.

4.1. MODULES:

The system is divided into several key modules that work together to complete the salary increment workflow:

1. **Input Handling and Initialization**
    - **Function**: Reads employee data from an Excel sheet.
    - **Process**: Initializes the UiPath automation, loading the input Excel file that contains employee details like department, current salary, and email.
2. **Content Analysis**
    - **Function**: Analyzes the employee data to identify the department and calculate salary increments.
    - **Process**: Iterates through the records and applies increment percentages based on the department (e.g., 10% for Marketing, 5% for HR, no increment for others).
3. **Result Management**
    - **Function**: Updates the salary data and stores the results in a new Excel file.
    - **Process**: Once increments are calculated, the bot updates the salary column and saves the results in a new Excel sheet for future reference.
4. **Completion and Reporting**
    - **Function**: Sends email notifications to employees and reports completion status.
    - **Process**: After updating the Excel file, the bot sends personalized emails to employees with their new salary details and motivational messages.

Input Handling and Initialization

- The system starts by reading employee data from an Excel file containing employee names, departments, current salaries, and email addresses.
- The data is loaded into a DataTable, which will be processed for increment calculations.

Content Analysis

- The system loops through each employee record and checks the department.
- Based on the department, a salary increment is applied (e.g., 10% for Marketing, 5% for HR).
- The incremented salary is calculated using simple formulas and stored for further processing.

Result Management

- After the increments are calculated, the updated salary data is written into a new Excel sheet.
- The system ensures that each employee's updated salary is saved, providing a clear record for HR personnel.

Completion and Reporting

- Once the salary data is updated, personalized email notifications are automatically sent to each employee.
- The emails contain their updated salary and a congratulatory message.
- The system sends a confirmation to the HR user that the process has been completed successfully.

CHAPTER 5 OUTPUT SCREENSHOTS

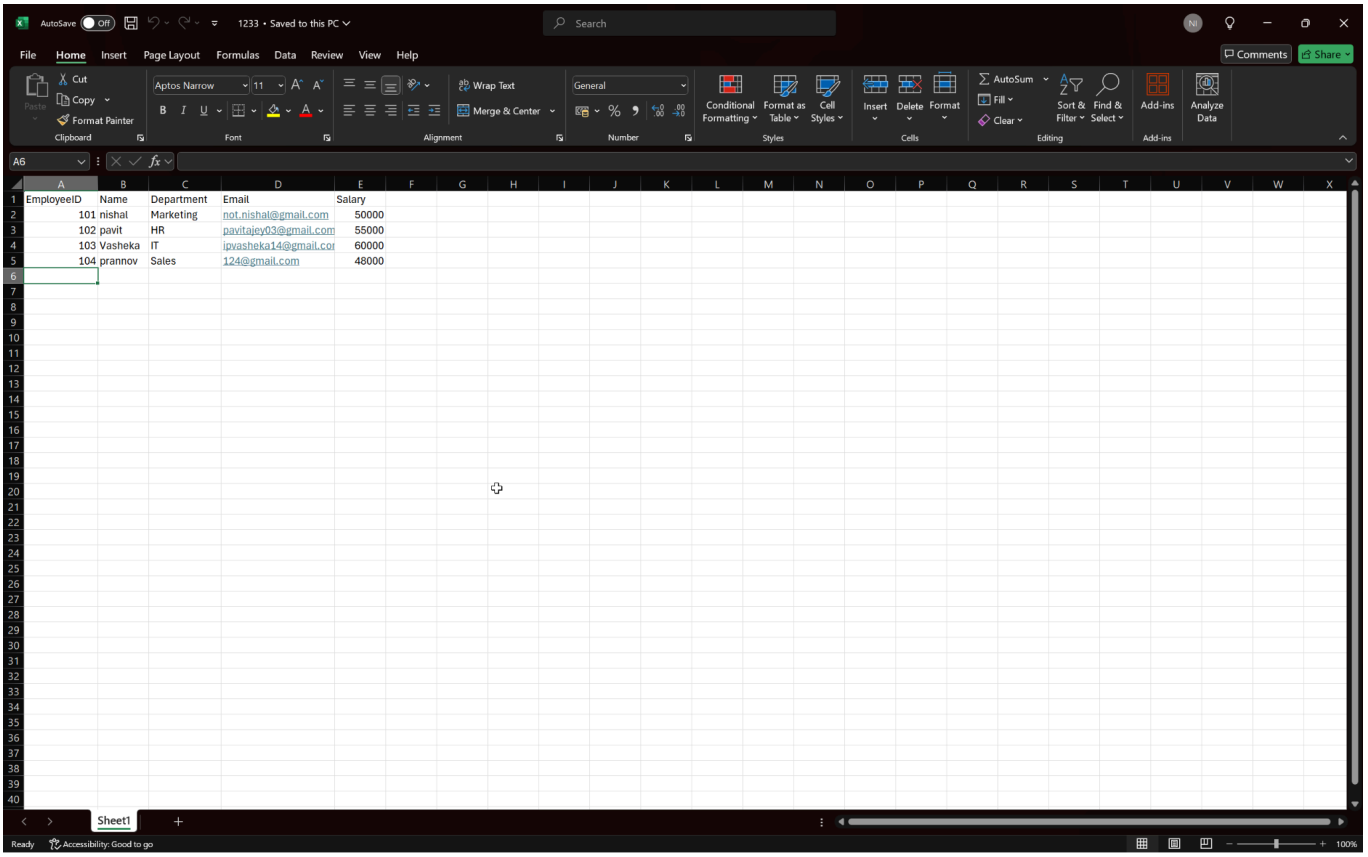
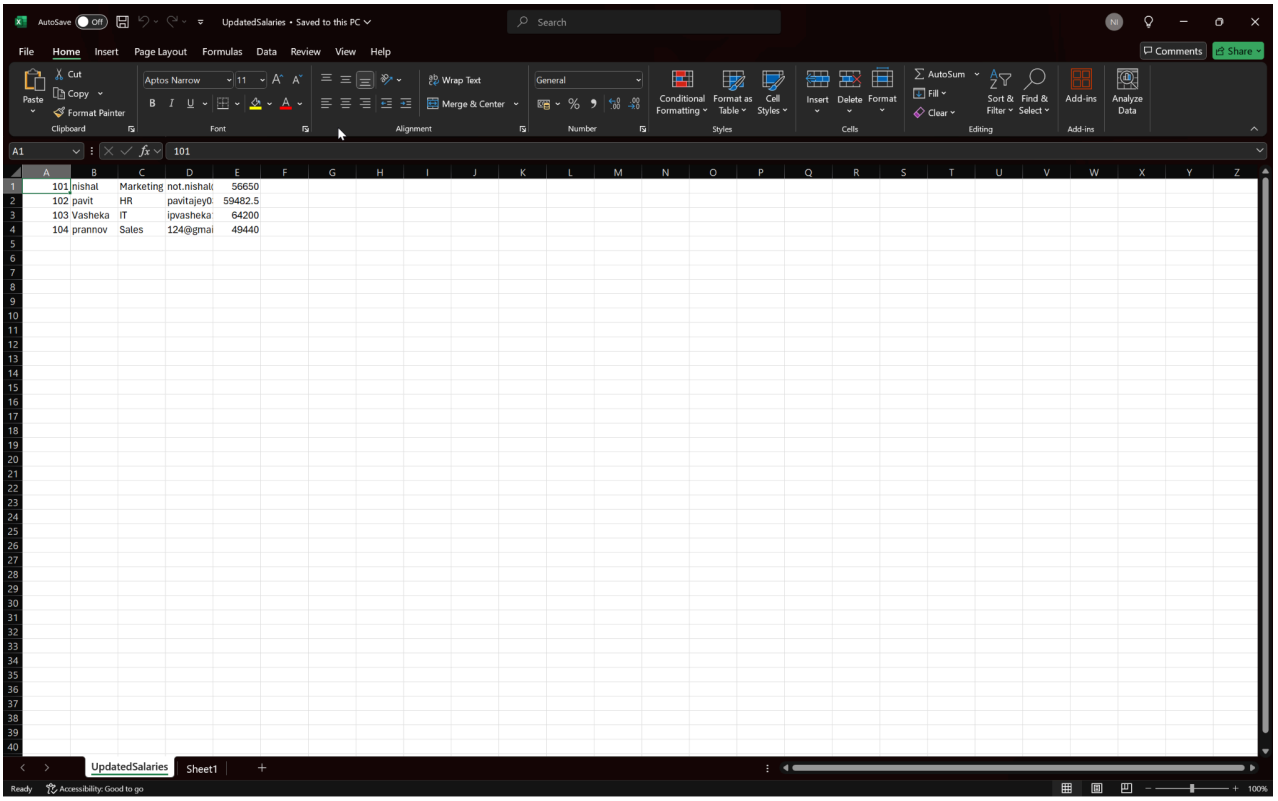
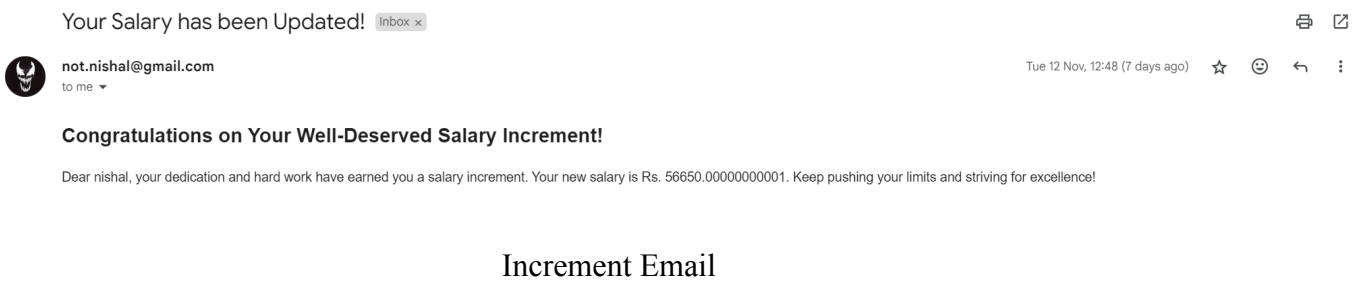


Fig 5.2 – Excel File This is the input folder



Updated Salaries



Increment Email

CHAPTER 6 CONCLUSION

The "Automated Salary Increment Notification System Using UiPath" revolutionizes the traditional process of salary management by automating the tasks of data handling, salary increment calculations, and employee notifications. This automation reduces the manual effort required for these tasks, eliminating errors that often occur in a manual process. By ensuring consistent application of increment rules and reducing human intervention, the system enhances operational efficiency and improves the accuracy of salary updates.

Furthermore, the system significantly improves communication between the HR department and employees. By automatically sending personalized emails with updated salary details and motivational messages, the solution fosters better employee engagement and satisfaction. This ensures that employees are informed promptly and in a professional manner, contributing to a positive organizational culture.

The scalability and cost-effectiveness of the system make it suitable for organizations of all sizes. Whether for small teams or large enterprises, the system handles large datasets with ease and adapts to changing business needs. By reducing the time and resources spent on manual salary updates, organizations can focus on more strategic HR functions, ultimately leading to greater productivity and a motivated workforce.

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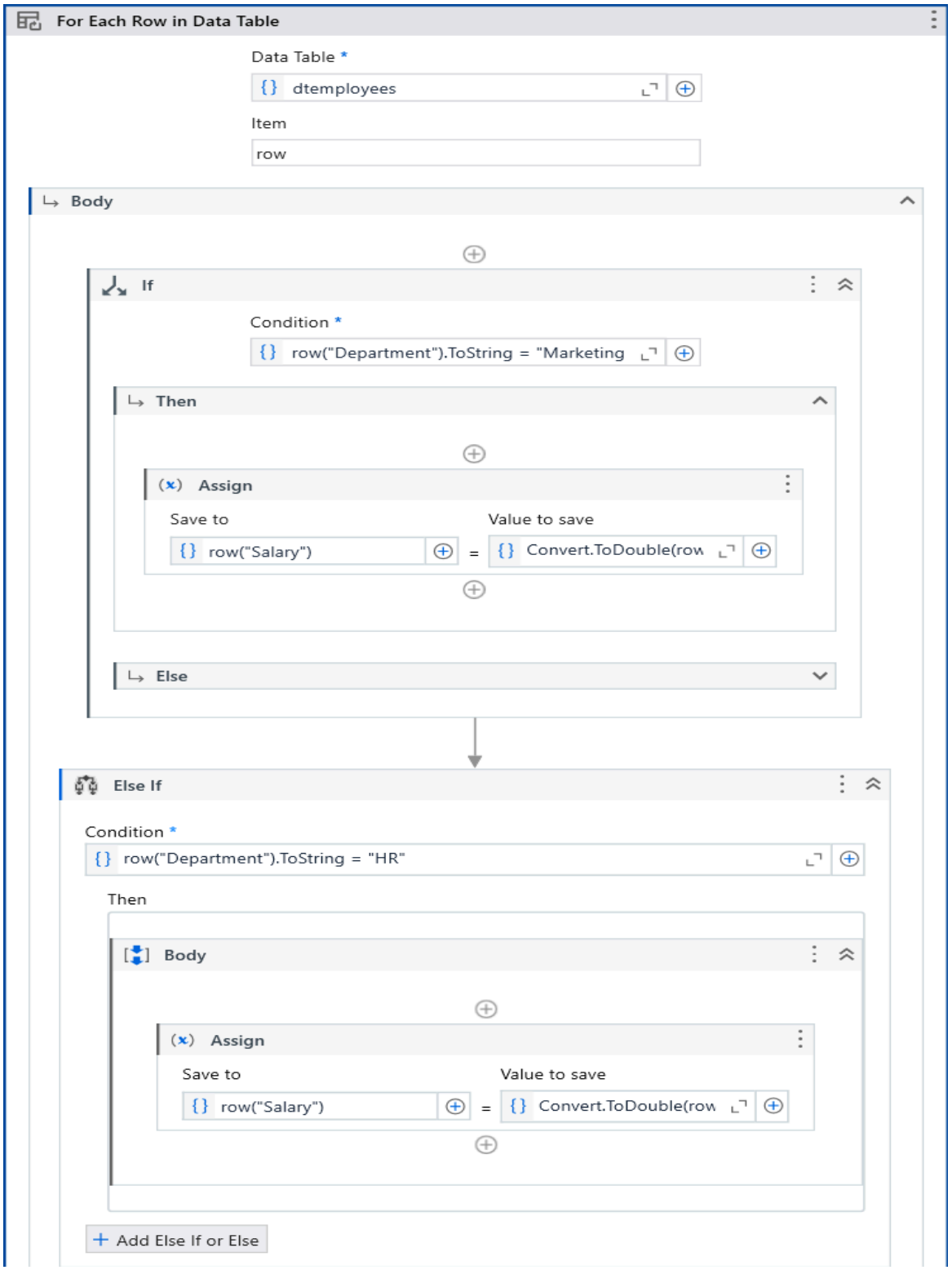
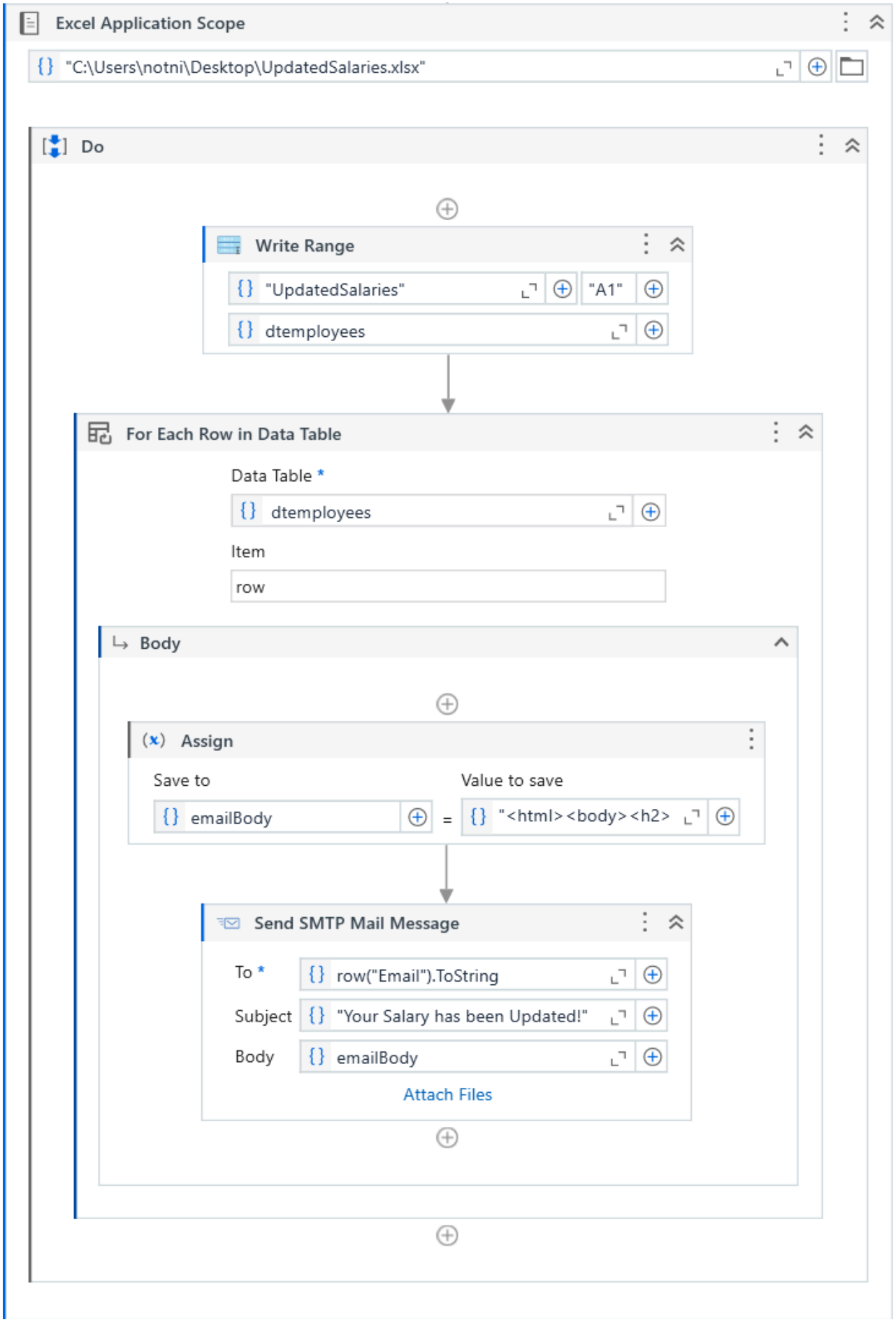
APPENDIX PROCESS WORK FLOW




Excel Application Scope
"C:\Users\notni\Desktop\UpdatedSalaries.xlsx"
Do
Write Range
"UpdatedSalaries"
"A1"
dtemployees
For Each Row in Data Table
Data Table *
dtemployees
Item
row
Body
Assign
Save to
Value to save
emailBody
=
"<html><body><h2>
Send SMTP Mail Message
To *
row("Email").ToString
Subject
"Your Salary has been Updated!"
Body
emailBody
Attach Files

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[2] Patil, Dr & Mane, Vinod & Patil, Dr. (2019). Social Innovation in Education System by using Robotic Process Automation (Rpa). International Journal of Innovative Technology and Exploring Engineering. 8. 3757-3760. 10.35940/ijitee.K2148.0981119.

[3] Elkhatat, A.M., Elsaid, K. & Almeer, S. Evaluating the efficacy of AI content detection tools in differentiating between human and AI- generated text. *Int J Educ Integr* **19**, 17 (2023). https://doi.org/10.1007/s40979-023-00140-5

[4] H. A. Chowdhury, D. K. Bhattacharyya, "Plagiarism: Taxonomy, Tools and Detection Techniques", 19th National Convention on Knowledge, Library and Information Networking, 2018.

APPENDICES

Appendix A: Sample Employee Data (Excel File Format)

The following is a sample format of the input Excel file used for processing salary increments:

EmployeeID	Name	Department	Email	Salary
103	Vasheka	IT	ipvasheka14@gmail.com	60000
102	pavit	HR	pavitajey03@gmail.com	55000
101	nishal	Marketing	not.nishal@gmail.com	50000
104	prannov	Sales	124@gmail.com	48000

Appendix B: UiPath Workflow Breakdown

1. **Excel Application Scope**
    - Reads the input Excel file containing employee data.
2. **For Each Row Activity**
    - Iterates through the rows in the DataTable.
3. **If Activity**
    - Checks the employee's department and applies the corresponding salary increment.
4. **Write Range Activity**
    - Writes the updated salary data into a new Excel file named `UpdatedSalaries.xlsx`.
5. **SMTP Mail Activity**
    - Sends personalized emails to employees with their updated salary details.

Appendix C: Email Template Used in Automation

Subject: **Congratulations on Your Salary Increment!**

Body:

Dear [Employee Name],

We are pleased to inform you that your salary has been updated to Rs. [Updated Salary] as part of the recent appraisal cycle. Your dedication and hard work have contributed significantly to our team's success, and this increment reflects our appreciation for your efforts.

Keep up the great work! We look forward to your continued contributions to the organization's success.

Warm regards,

[Your Company Name]

Appendix D : Output Excel File

101	nishal	Marketing	not.nishal@gmail.com	56650
102	pavit	HR	pavitajey03@gmail.com	59482
103	Vasheka	IT	ipvasheka14@gmail.com	64200
104	prannov	Sales	124@gmail.com	49440

Appendix E: Screenshots of Output

1. Input Excel File: A screenshot of the original employee data file.
2. Updated Excel File: A screenshot of the `UpdatedSalaries.xlsx` file showing the updated salaries.
3. Email Notification: A sample screenshot of the personalized email received by an employee.