ARASU ENGINEERING COLLEGE

KUMBAKONAM – 612501

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

SB8026- Robotic Process Automation Development

PROJECT NAME:AUTOMATED BIRTHDAY EMAILS FOR ACME CORP

Submitted By,

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Automated Birthday Emails for Acme Corp

Introduction:

Employee recognition plays a vital role in fostering a positive workplace culture and boosting employee satisfaction. One way to enhance this is by celebrating employee birthdays with personalized greetings. However, managing this task manually is time-consuming, error-prone, and often leads to missed birthdays.

Acme Corp seeks to address this challenge by leveraging Robotic Process Automation (RPA) with UiPath. This project aims to develop an automated solution that reads employee data from an Excel file, identifies birthdays matching the current date, and sends customized birthday wishes via email. This automation will not only ensure timely delivery but also free up valuable time for HR teams to focus on more strategic tasks.

Problem Statement:

Acme Corp faces the challenge of ensuring timely and personalized birthday emails for its employees. Manually managing this task is time-consuming and prone to errors, potentially resulting in missed birthdays and decreased employee satisfaction.

The goal is to automate the process using Robotic Process Automation (RPA) with UiPath to save time and improve satisfaction.

Problem Description:

- Develop a RPA bot using UiPath to automate the process of sending personalized birthday emails to employees, ensuring no birthdays are missed and the process is efficient.
- Read the Excel File: The bot would read an Excel file containing the names, dates of birth, and email addresses of all employees.
- Check Today's Birthdays: The bot would compare the dates of birth with the current date to find whose birthday it was.
- Send Customized Emails: The bot would then send personalized birthday emails to each employee celebrating their birthday.

Objectives:

- **Ensure Timely Delivery**: Automate the process of sending birthday emails to ensure no employee's birthday is missed.
- **Enhance Personalization**: Provide customized and meaningful birthday greetings tailored to each employee.
- **Improve Employee Satisfaction**: Strengthen employee engagement and morale by acknowledging their special day.
- **Increase Efficiency**: Reduce manual effort and save time for HR teams by automating a routine task.
- **Minimize Errors**: Eliminate the risk of human error, such as overlooking an employee's birthday or sending incorrect information.
- **Demonstrate Technological Advancement**: Showcase Acme Corp's commitment to leveraging innovative technologies like RPA for workplace enhancement.

Methodology:

- **Problem Analysis**: Identified the challenge of manual birthday email management and its impact on efficiency and employee satisfaction.
- **Input Data Preparation**: Created an Excel file (EmployeeData.xlsx) with employee details (Name, Email, and Date of Birth) for the bot to process.
- **Workflow Development**: Designed the UiPath workflow with activities to read Excel data, identify today's birthdays, and send personalized emails.
- **Email Configuration**: Configured the Send SMTP Mail Message activity to dynamically send emails via Gmail, with placeholders for employee names and greetings.
- **Error Handling**: Incorporated Try Catch blocks to manage exceptions like missing data, SMTP issues, or invalid email addresses.
- **Testing and Validation**: Validated the bot by running tests with sample data to ensure correct email delivery and workflow functionality.
- **Deployment and Scheduling**: Deployed the bot using UiPath Orchestrator and scheduled daily execution to ensure timely birthday email delivery.

WorkFlow:

1. Input Data

The input is an Excel file (EmployeeData.xlsx) containing the following fields:

	A	B	C
1	Name	Date of Birth	Email
2	John Doe	6/12/1985	john.doe1@example.com
3	Jane Smith	6/13/1985	jane.smith1@example.com
4	Alice Johnson	6/14/1985	alice.johnson1@example.com
5	Bob Brown	6/15/1985	bob.brown1@example.com
6	Carol White	6/16/1985	carol.white1@example.com
7	Dave Wilson	6/17/1985	dave.wilson@example.com
8	Eve Adams	6/18/1985	eve.adams@example.com
9	Frank Wright	6/19/1985	frank.wright@example.com
10	Grace Harris	6/20/1985	grace.harris@example.com

# 2. Workflow Steps

Step 1: Create New Project
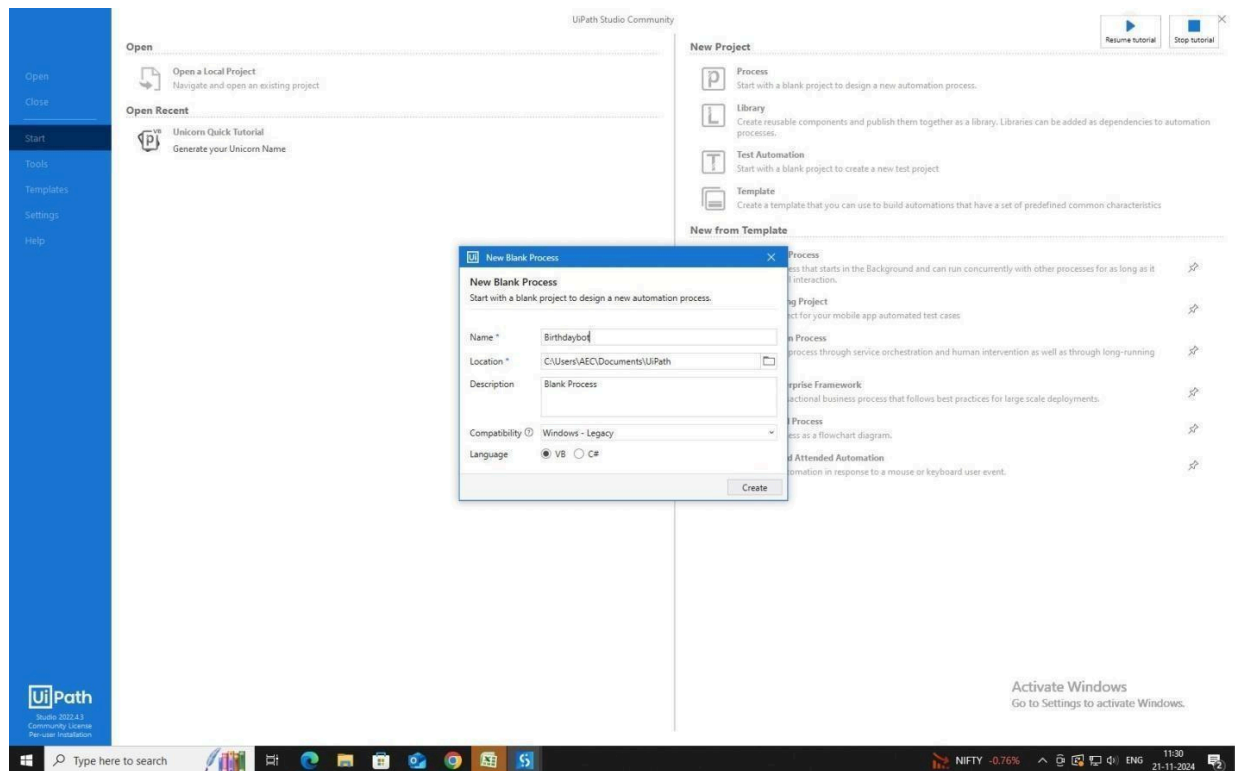
Step 2: Read Excel File

- **Activity**: Excel Process Scope.
  - **Path**: Path to the Excel file (EmployeeData.xlsx).
- **Activity**: Read Range
  - **Purpose**: To read the employee data into a DataTable for processing.
  - **Steps**:Place a Read Range activity inside the Excel Process Scope. Configure the following properties:
    1. **SheetName: Enter the name of the sheet containing the data (e.g., "Sheet1").**
    2. **Range**: Leave it blank or specify a range like "A1:C100" to read all data in the specified columns.
    3. **Output:**dataTable.
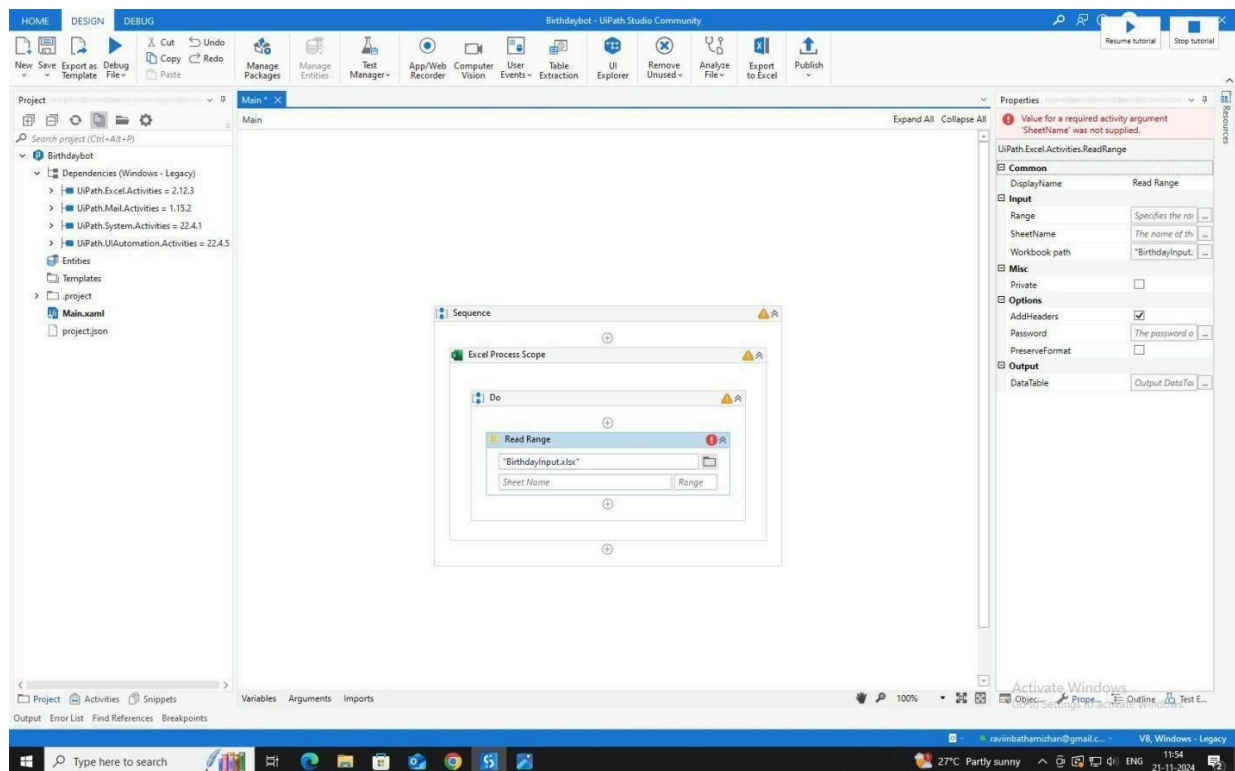
Step 2.1: Drag and drop the sequence box.
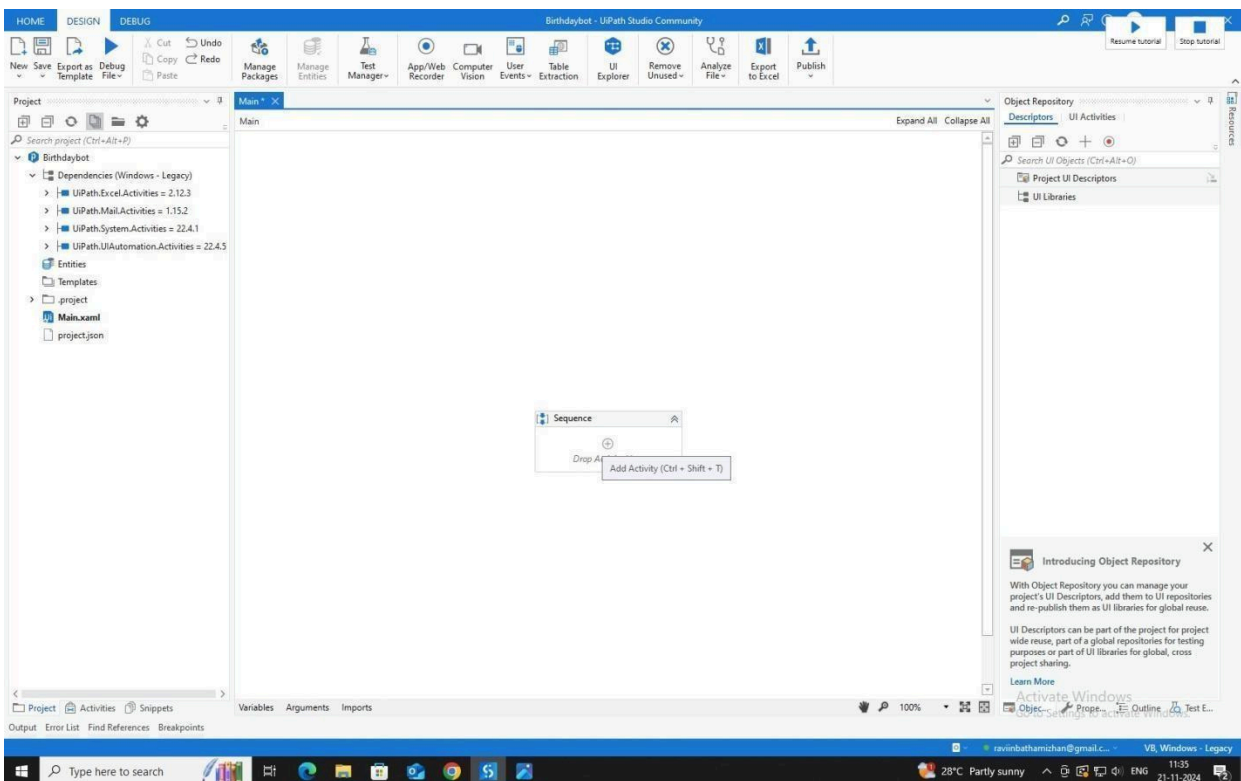
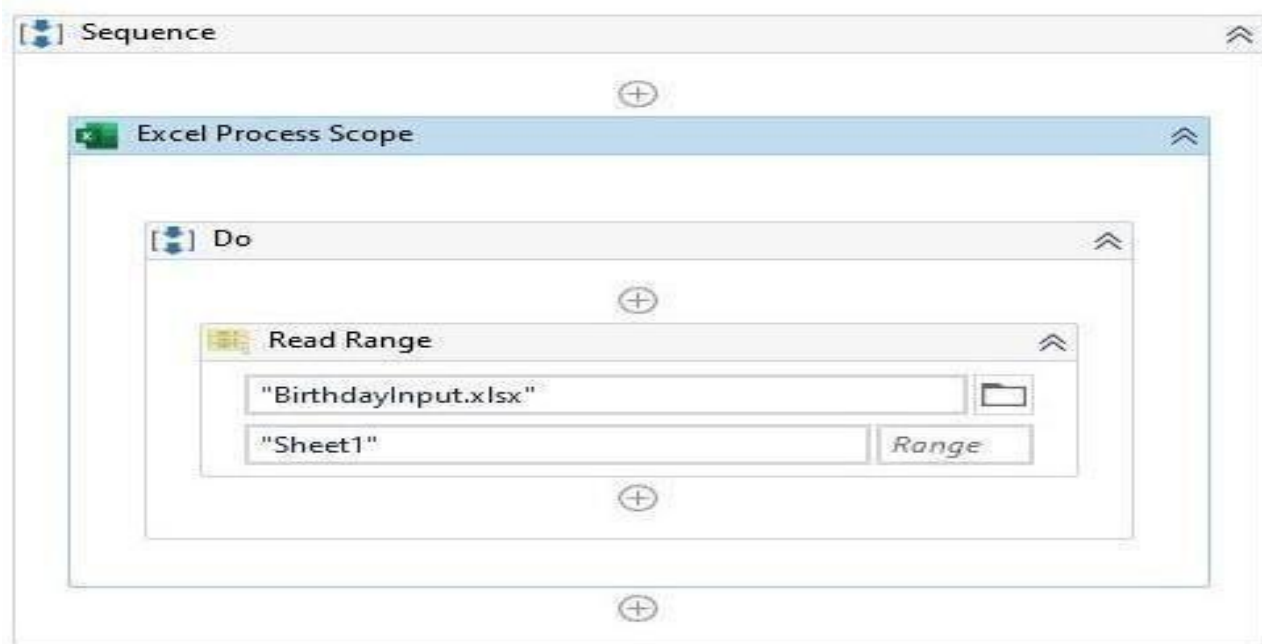**Step 2.2:** Drag and drop the Excel process Scope.
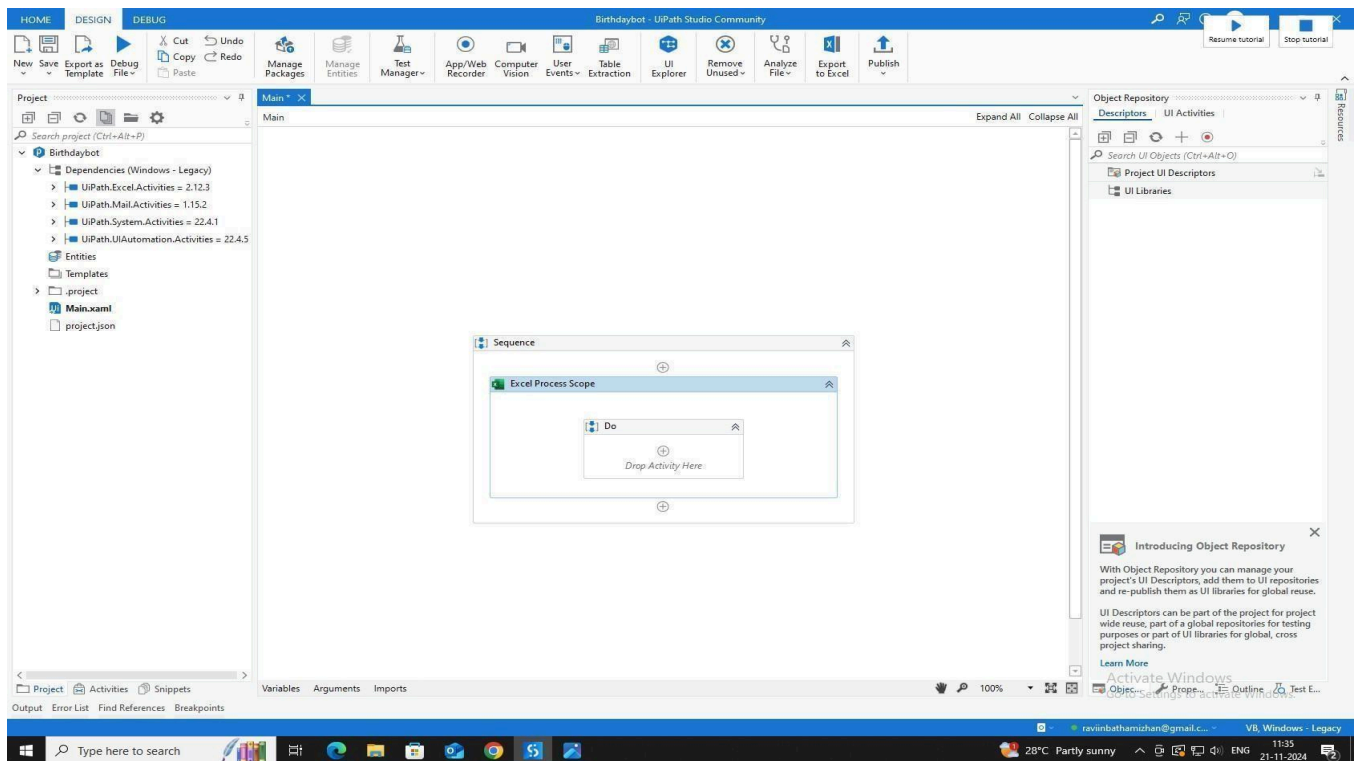
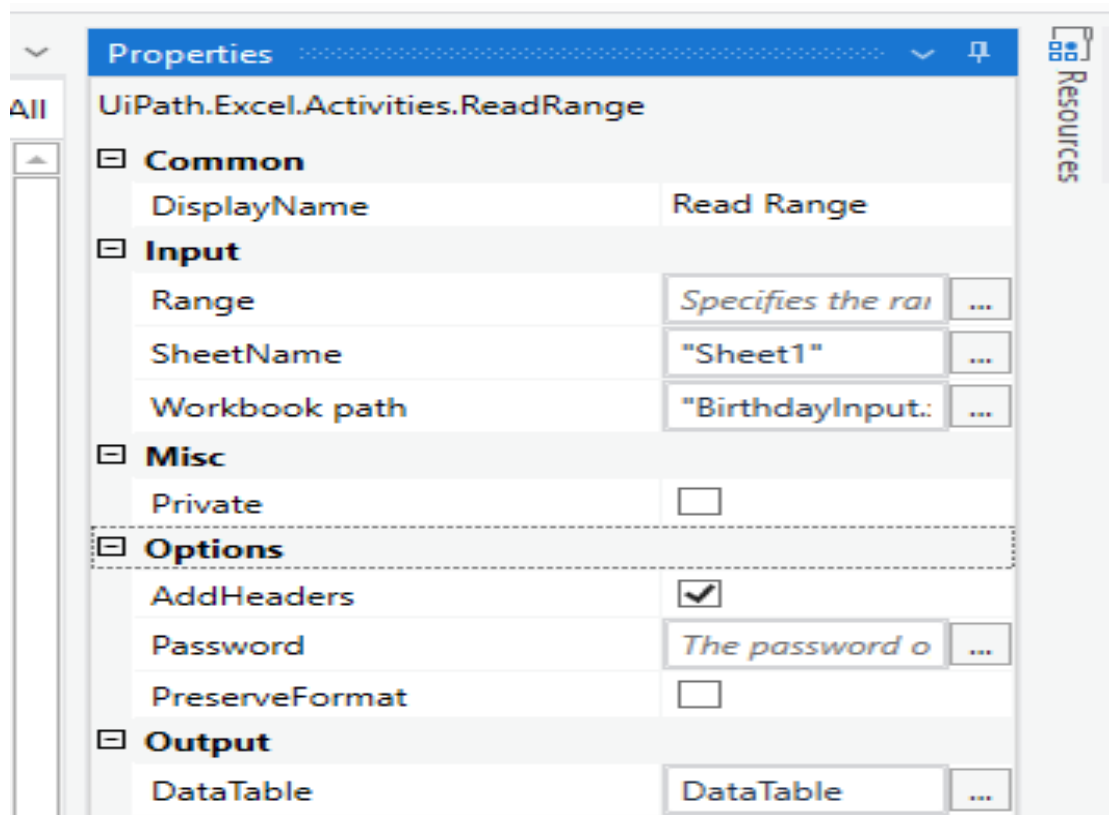**Step 2.3:** Drag and drop the read range and select the input excel file.
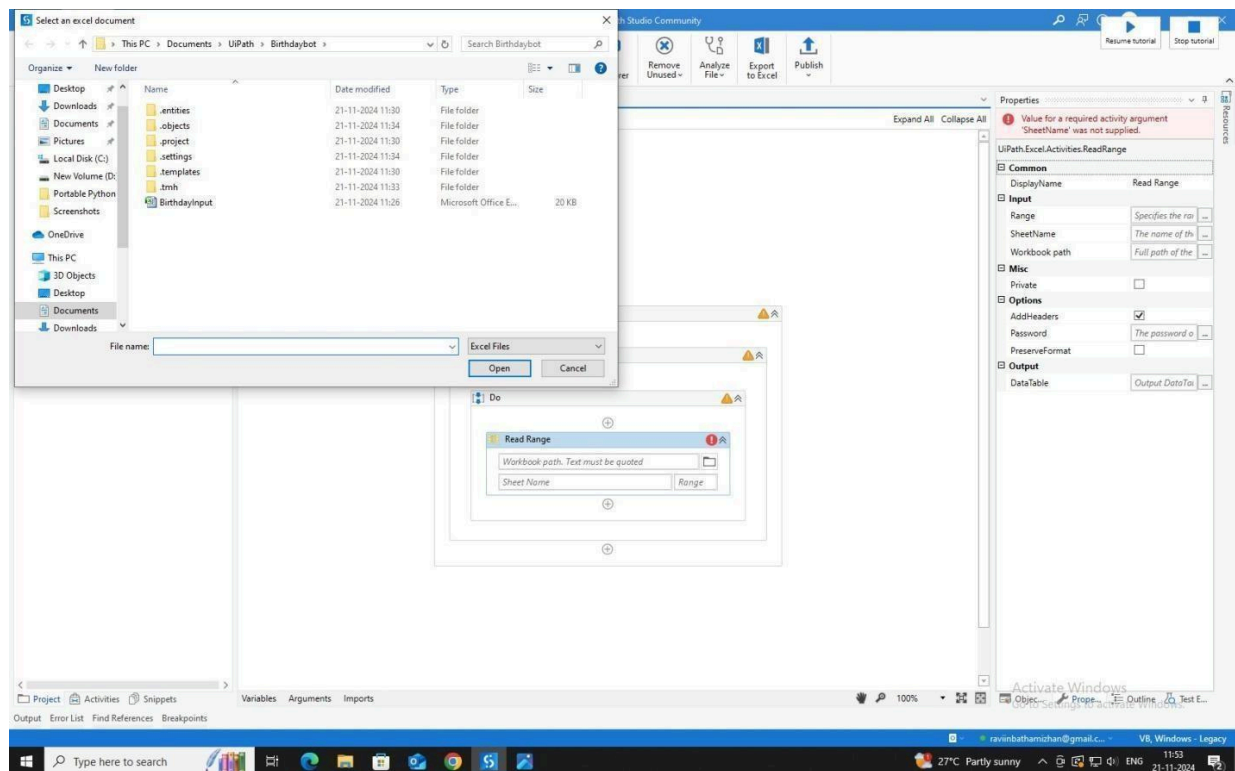
Step 2.4: Drag and drop the Read range.

Step 2.5: Select the excel file and give the sheet name as "Sheet1".

Step 2.6: In Properties of the read range set output as dataTable.

Step 3: Loop Through Each Row

Activity: For Each Row in DataTable
- o **Steps to Configure**
- o **Drag and Drop the Activity**:
  - ▪ Add the For Each Row in DataTable activity to your workflow. o **Input Configuration**:
  - ▪ In the **DataTable** property, specify the variable name where the Excel data is stored (e.g., dataTable).
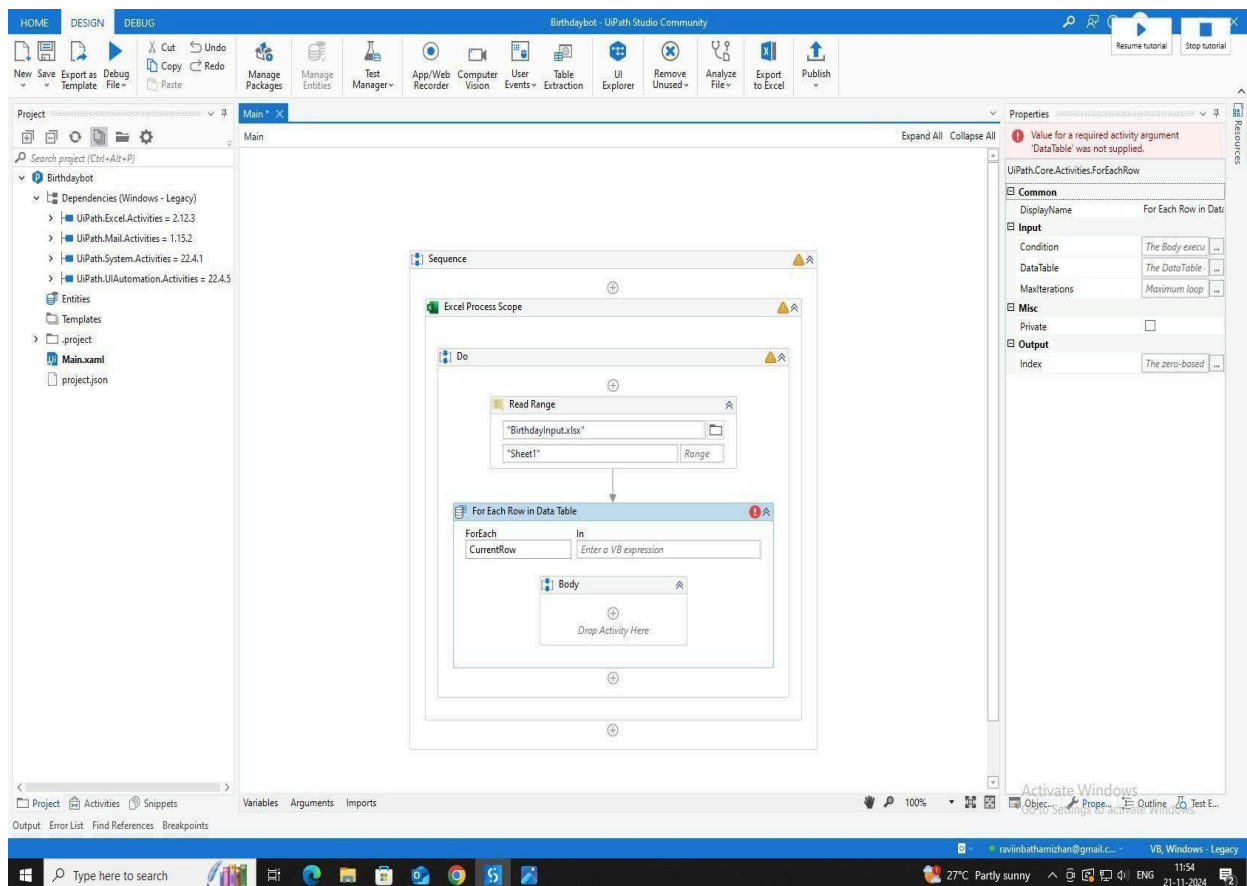- o **Loop Configuration**:
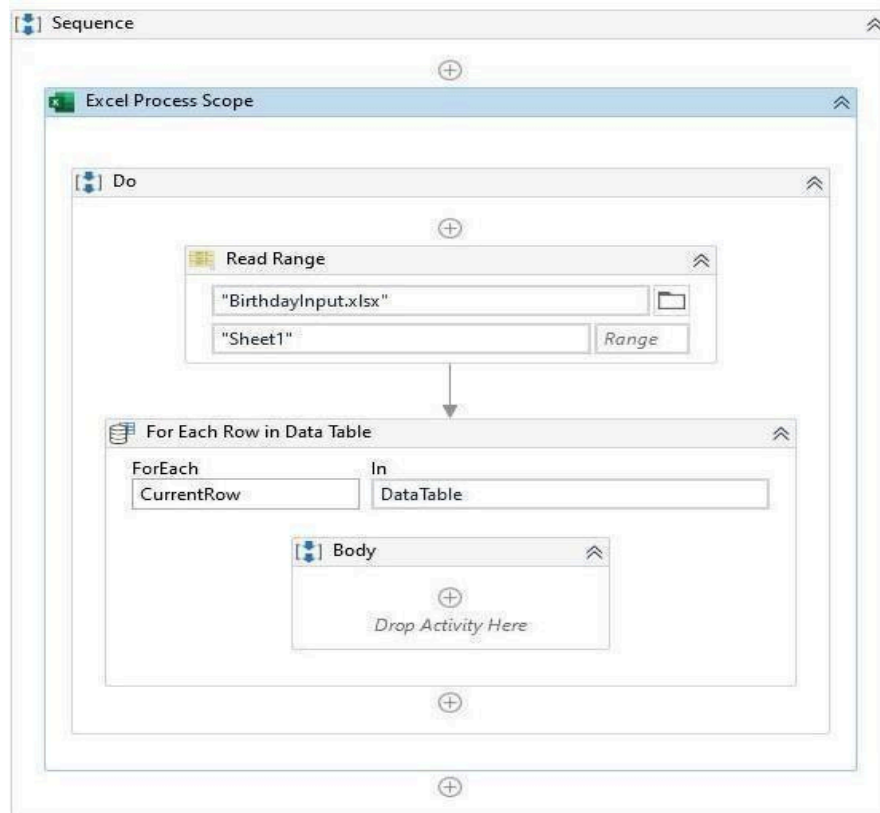 - ▪ Within the For Each Row activity, the variable row represents the current row being processed.

Purpose:
- o Process each row by accessing its columns (e.g., row("Name").ToString, row("DateOfBirth").ToString, etc.).

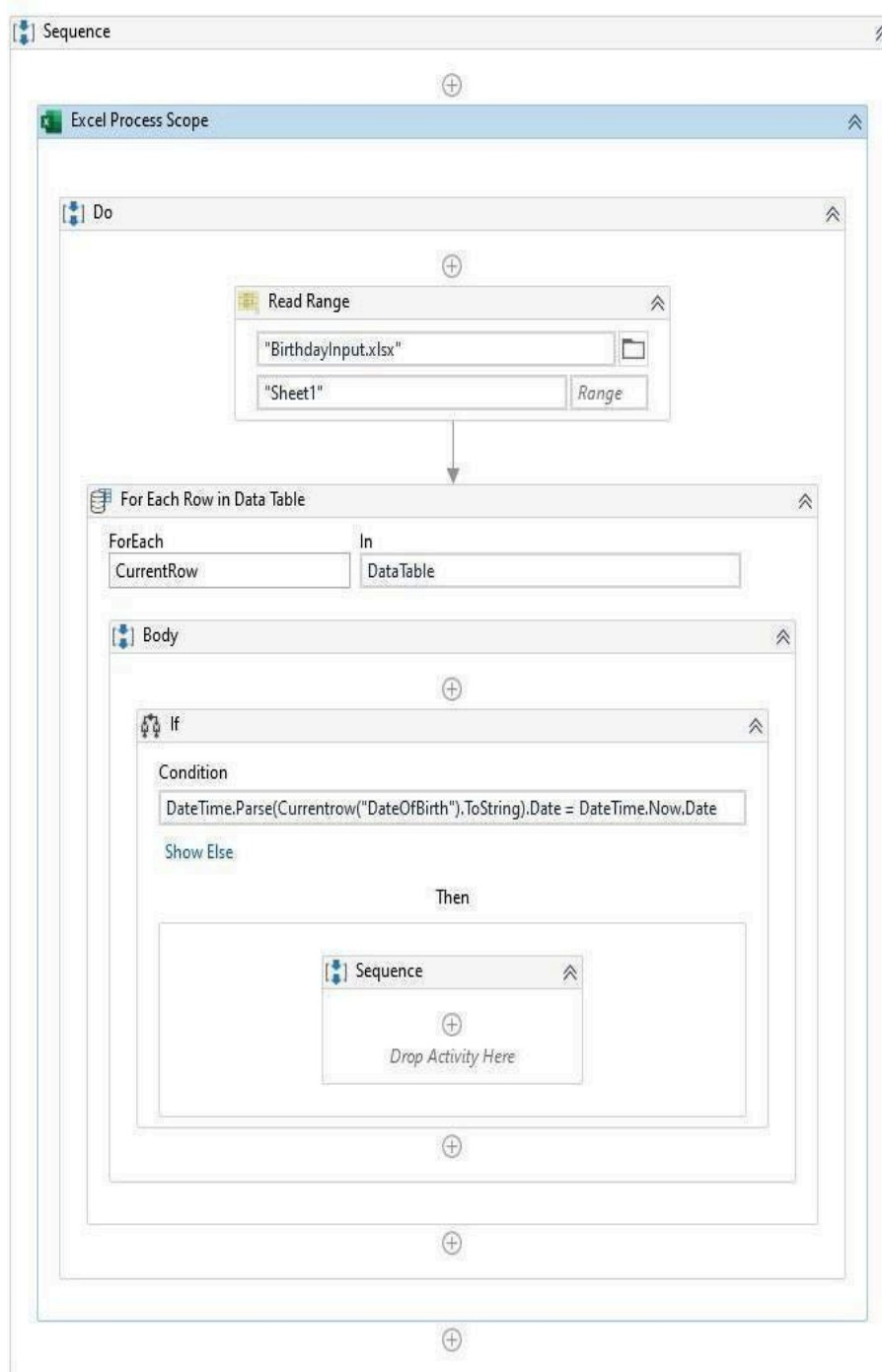**Step 3.1:** Drag and drop for each row in datatable.

Step 3.2: Set the row as Current Row.

Step 4: Check Today's Birthdays
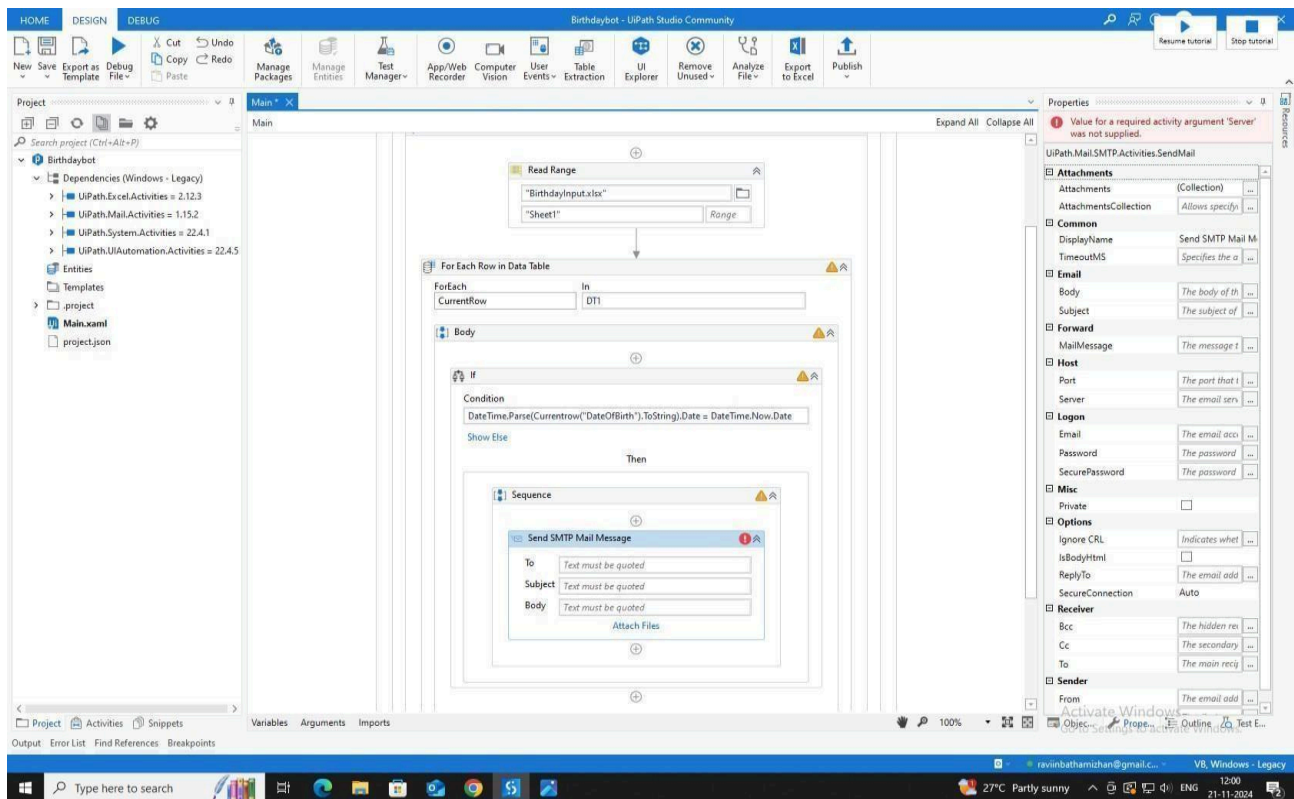
- **Activity**: If workflow.
  - **Condition**:DateTime.Parse(row("DateOfBirth").ToString).Date = DateTime.Now.Date
  - If true, proceed to send the email.

Step 5: Send Customized Emails
- ● **Activity:** Send SMTP Mail Message.

Step 5.1: Drag and drop the SMTP mail message.

Properties:

- o **To**: row("Email").ToString
- o **Subject**: "Happy Birthday, " + row("Name").ToString + "!"
- o **Body**:

Dear Employee,

Happy Birthday to You!

On this special day, we wanted to take a moment to celebrate you and all the wonderful contributions you bring to our team at Acme Corp.

What We Appreciate About You:

- Your dedication and hard work.
- The positive energy you bring to the office.
- Your innovative ideas that help us grow.

To show our appreciation, here are a few birthday surprises just for you:

1. Extra Time Off: Enjoy an extra hour off to relax and celebrate!
2. Birthday Treat: Check your desk for a little surprise from us!
3. Team Celebration: Join us for a cake-cutting ceremony in the break room at 3 PM.

We hope your birthday is filled with joy, laughter, and everything that makes you smile. Thank you for being an incredible part of our family!

Warmest wishes,

The Acme Corp Team

- **SMTP Server**: smtp.gmail.com
- **Port**: 587
- **SecureConnection**: StartTLS
- **Username**: Your Gmail address.
- **Password**: Gmail App Password.
    - Keep the App Password secure.
    - You can revoke or regenerate the App Password anytime from the **App Passwords** section.

Application password creation steps:

1. **Log in to Google Account**: Go to [Google Account Settings](#) and sign in with your Gmail credentials.
2. **Enable 2-Step Verification**:
   a. Navigate to the **Security** section.
   b. Under **Signing in to Google**, enable **2-Step Verification** by following the on-screen instructions.
3. **Access App Passwords**:
   a. Return to the **Security** section.
   b. Click on **App Passwords** under **Signing in to Google** (you may need to re-enter your password).
4. **Choose App and Device**:
   a. Under **Select app**, choose **Mail**.
   b. Under **Select device**, choose **Other (Custom name)** and name it, e.g., "UiPath SMTP."
5. **Generate Password**:
   a. Click **Generate**, and a 16-character App Password will appear.
   b. Copy this password (you won't be able to view it again).
6. **Use in UiPath**:
   a. In the Send SMTP Mail Message activity, enter your Gmail address as the **Username** and the generated App Password as the **Password**.
7. **Secure and Manage**:
   a. Keep the App Password secure.
   b. You can revoke or regenerate the App Password anytime from the **App Passwords** section.

Step 5.1: To configure the Send SMTP Mail Message activity in UiPath, start by adding the activity to the workflow where send the email.
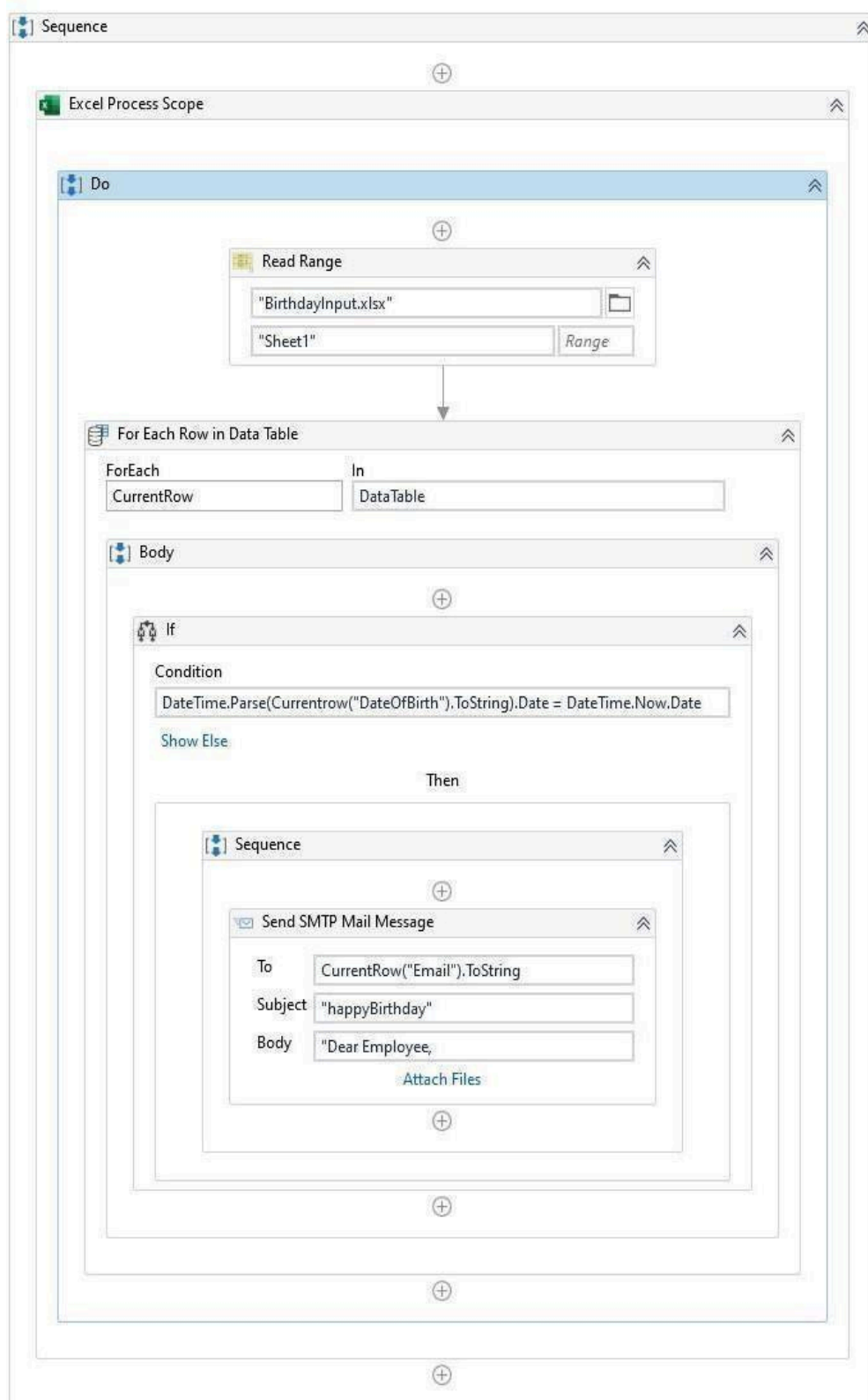
Step 5.2: In the SMTP settings, use smtp.gmail.com as the server, 587 for the port, and select StartTLS for secure connections. Enter your Gmail address as the username and the App Password.
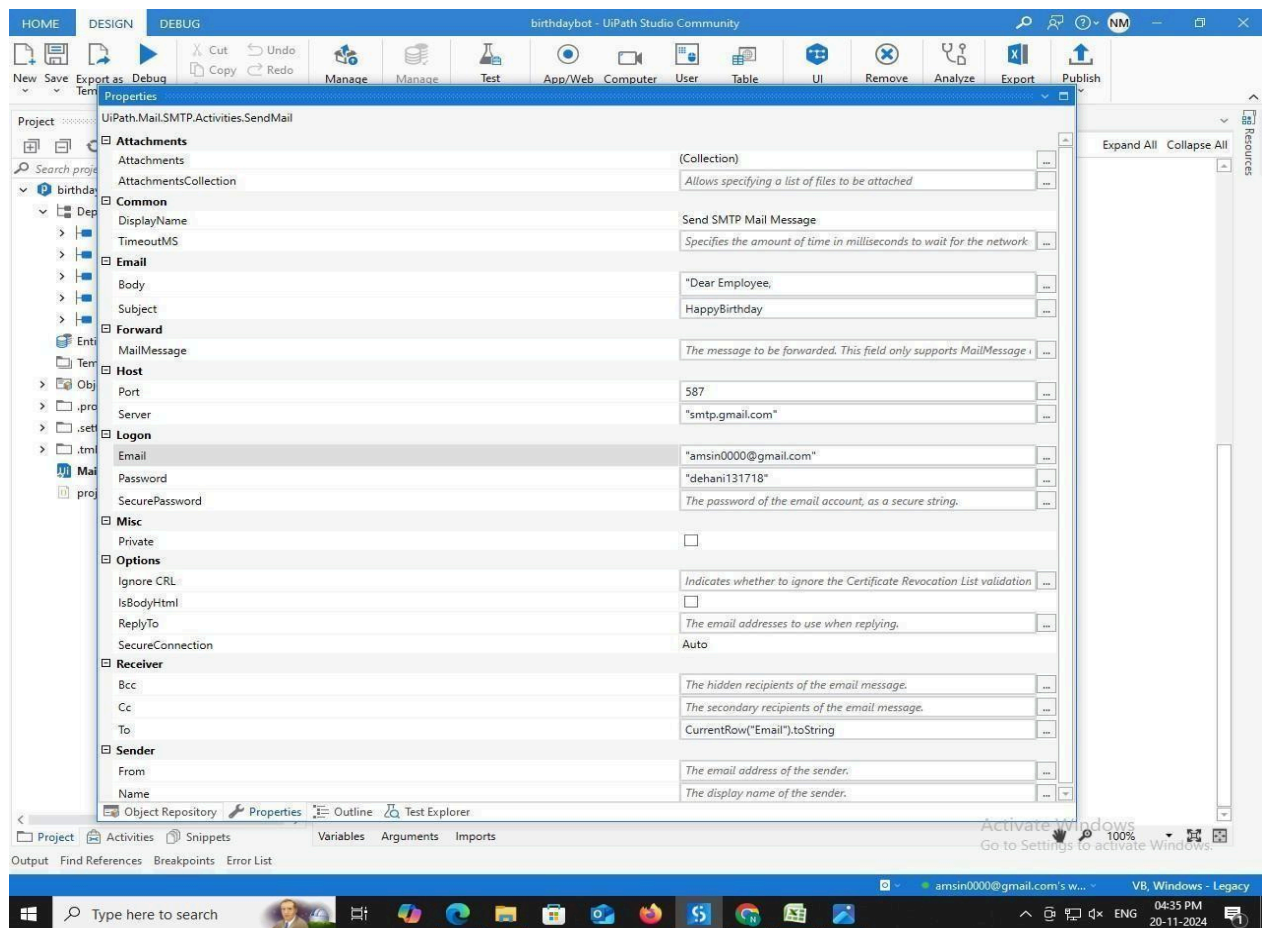
Step 6:Add a Message Box

The **Message Box** is to confirm that the bot has successfully completed the task of sending personalized birthday emails to employees. It provides immediate feedback to the user running the bot, ensuring that they are aware the process executed without issues.
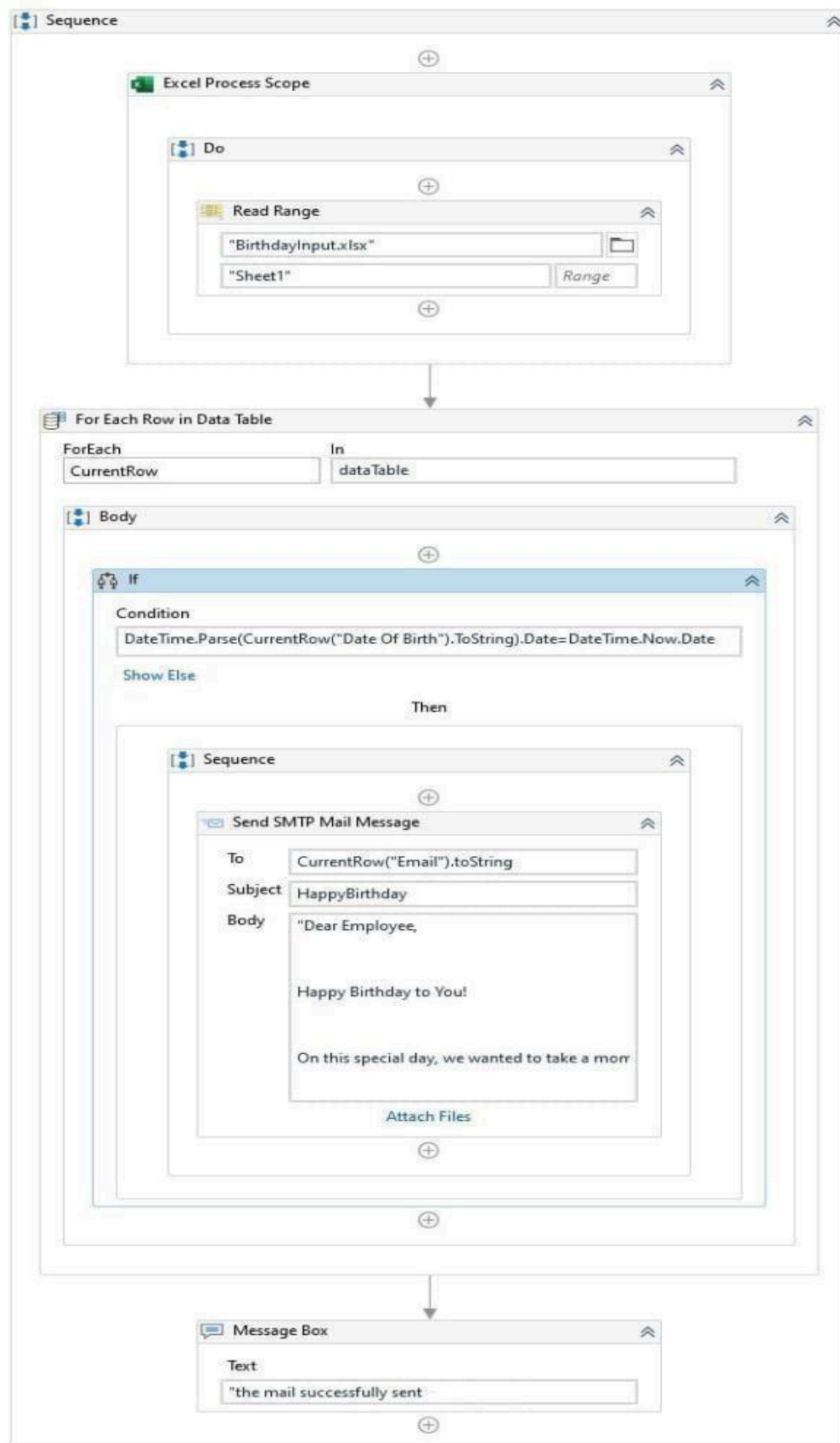
For example, after the bot processes the Excel file, checks for today's birthdays, and sends emails, the Message Box will display a message such as *"All birthday emails have been successfully sent!"*. This ensures the user knows the automation worked as expected, without needing to check logs or manually verify email deliveries.

Step 6.1:
- **Activity:** Drag and drop the Message Box activity from the Activities panel into your workflow.
- **Position:** Place the Message Box at the end of the workflow, after the email-sending process.
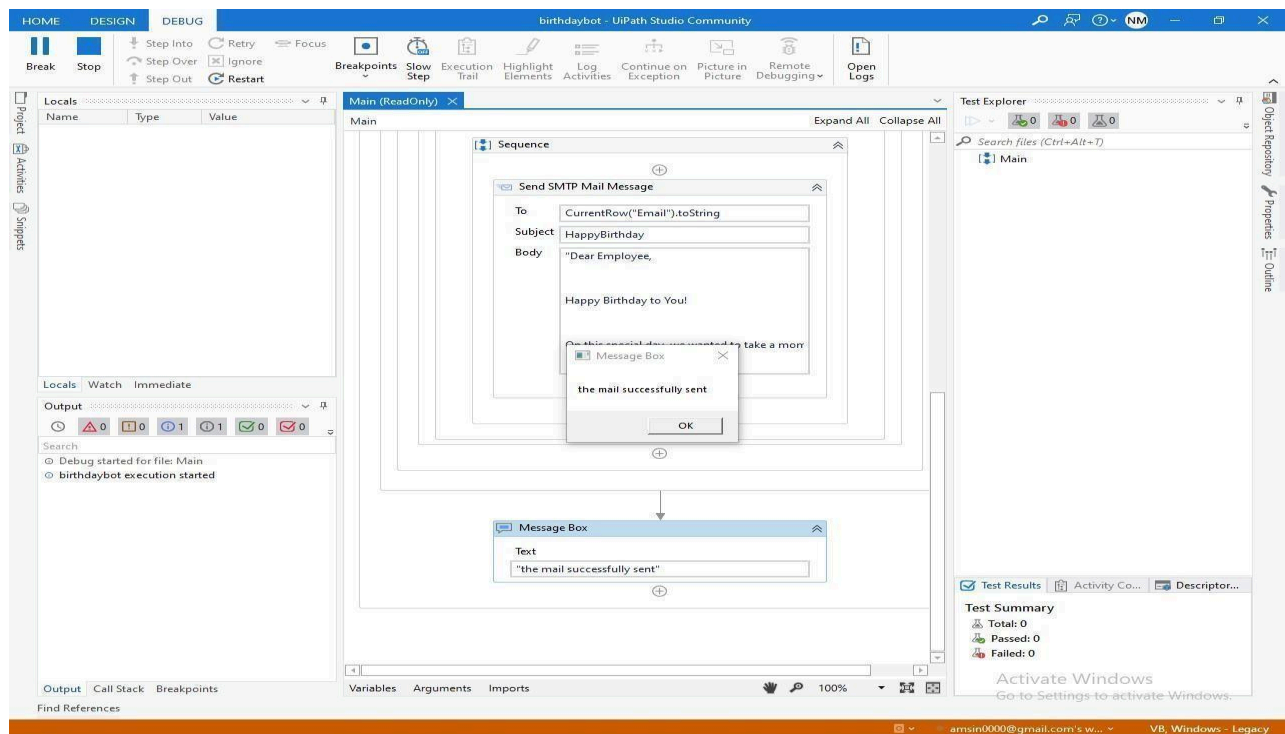- **Set the Message:**"The mail successfully sent"

**Final WorkFlow:**

3.Output:

Message Box Confirmation:

- After all emails are sent, the bot displays a **Message Box** indicating successful completion.
- *Output*: A popup message such as *"All birthday emails have been successfully sent!*

Run the Workflow

- Execute the workflow by clicking the **Run** button in UiPath.
- After the bot completes all steps (reading Excel, filtering birthdays, and sending emails), the **Message Box** will appear.
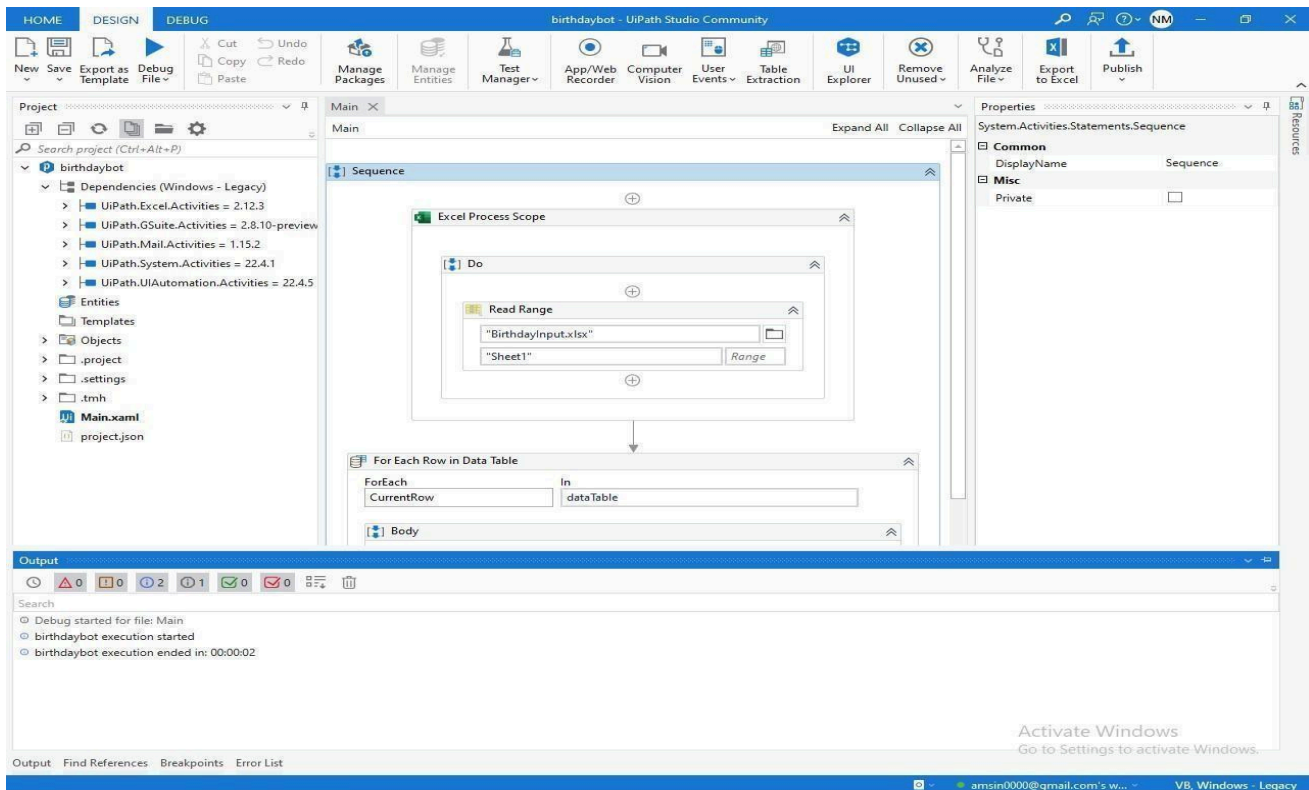
Excel Data Read Confirmation:

- After reading the EmployeeData.xlsx file, ensure the bot has successfully loaded the data into a DataTable.
- *Output*: A populated DataTable object with employee details.

| 90 | Julia King | 08-09-1985 | julia.king@example.com |
91	Kyle Harris	09-09-1985	kyle.harris@example.com
92	Lily Nelson	10-09-1985	lily.nelson@example.com
93	Nisma	22-11-1985	teamelite865@gmail.com
94			
95			

Email Confirmation:

At the end of the workflow, you can display a confirmation message in a Message Box to indicate the successful sending of birthday emails. The message can include details about the task, such as: "Birthday emails have been sent to all employees celebrating their birthdays today. Each email was personalized and delivered successfully. Thank you for using this automated process!"
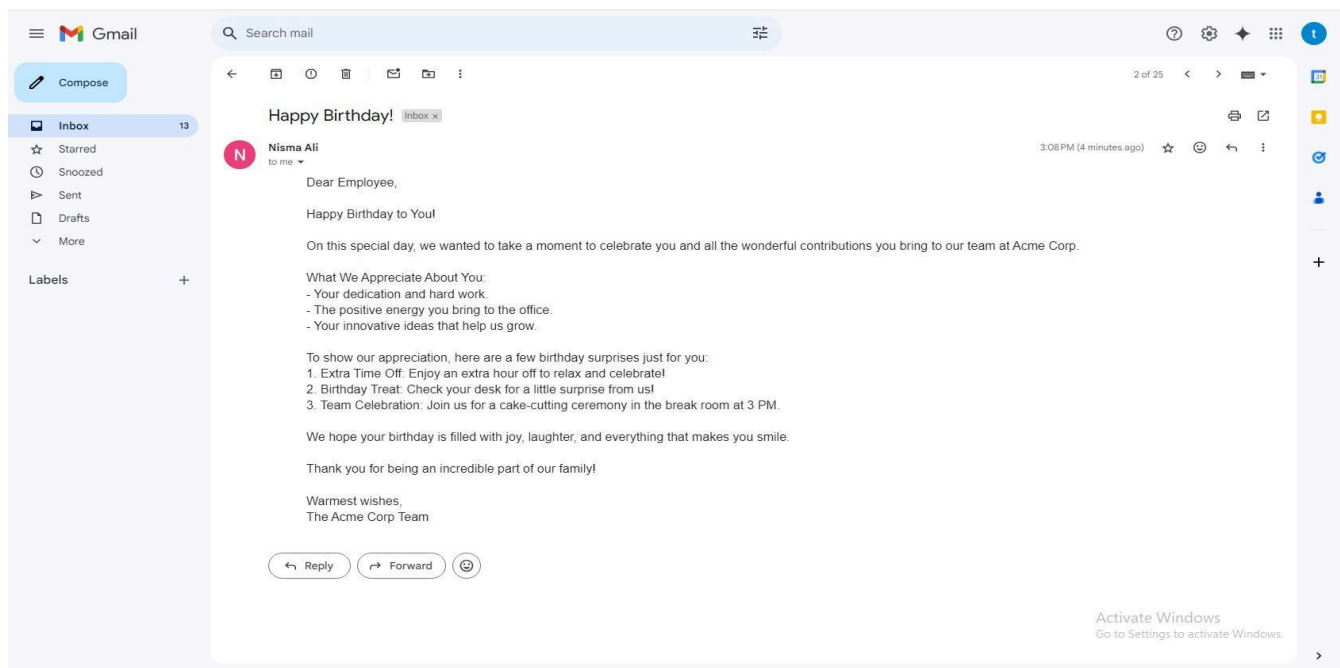
Confirmation of date:

Once the emails are sent, this will confirm in the output log or an internal variable that today's date matches the birthdate of the employees who received their birthday email. The birthday email has been sent successfully.
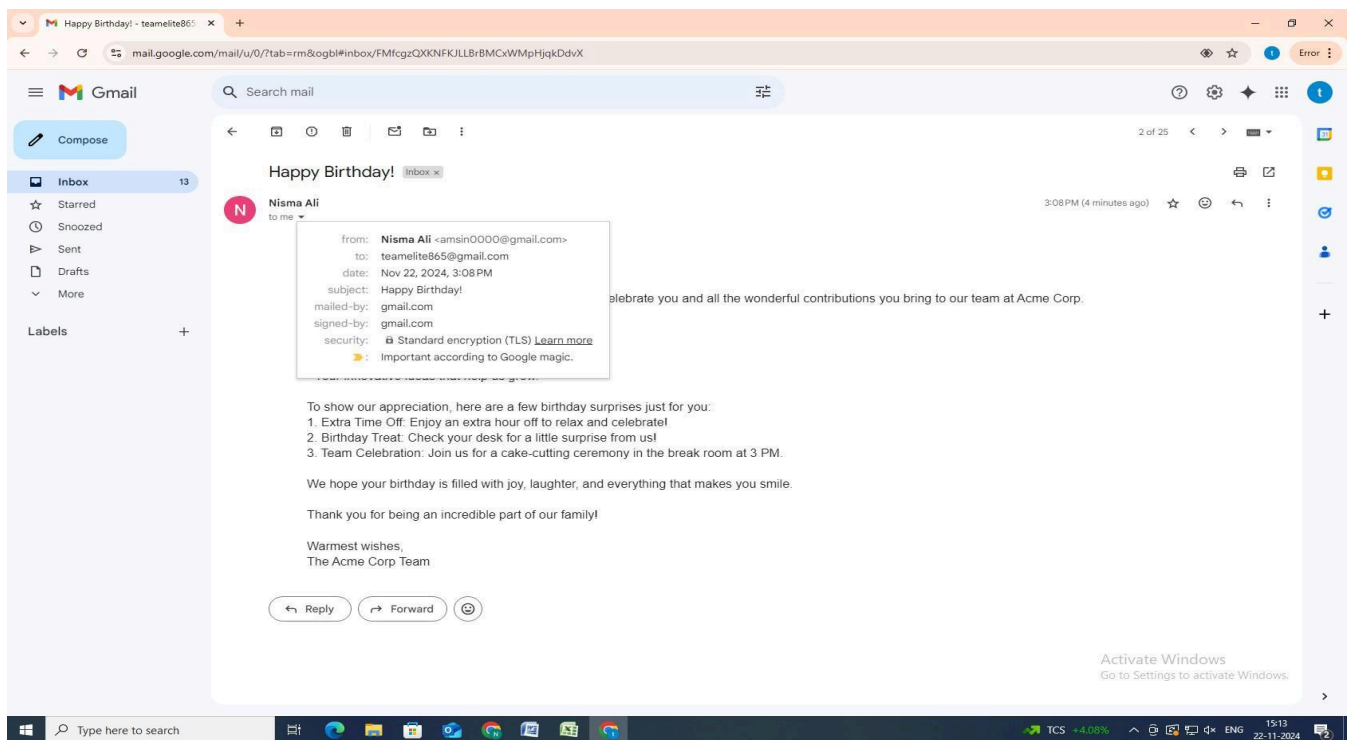
Benefits of Automating Birthday Emails Using UiPath

1. **Time Efficiency**:
   Automating the process eliminates the need for manual tracking of birthdays, significantly saving time for HR teams and managers. The bot runs automatically, ensuring timely delivery of emails without human intervention.
2. **Error Reduction**:
   By automating, the risk of human error—such as forgetting birthdays or sending generic messages—is minimized. The bot ensures that emails are personalized and correctly sent to the right individuals.
3. **Consistency**:
   Every email sent by the bot follows the same format and tone, maintaining consistency in communication. Personalized birthday messages are sent with the same level of professionalism and warmth.
4. **Improved Employee Satisfaction**:
   Personalized and timely birthday messages help employees feel valued and appreciated, improving overall employee morale and satisfaction.
5. **Scalability**:
   As the company grows, manually managing birthdays becomes more challenging. The automated process can handle a growing number of employees without additional resources or effort.
6. **Cost Savings**:
   Automating birthday emails eliminates the need for manual labor, reducing administrative costs associated with sending personalized greetings.
7. **Enhanced Productivity**:
   With the bot handling the repetitive task of sending birthday emails, HR teams and managers can focus on more strategic tasks, boosting productivity within the organization.

Conclusion

The automated birthday email bot for Acme Corp is a robust solution that streamlines the process of sending personalized birthday greetings. By eliminating manual intervention, the bot ensures no employee birthdays are missed, improving employee morale and satisfaction. Additionally, this RPA solution enhances efficiency, saves time, and reduces the risk of errors, demonstrating how automation can address routine tasks effectively.

Through this implementation, Acme Corp has taken a meaningful step towards leveraging technology to improve workplace engagement and foster a culture of appreciation.