SALES REPORT AUTOMATION BOT

A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

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ABSTRACT

The Sales Report Automation project leverages Robotic Process Automation (RPA) with UiPath to streamline the generation and distribution of sales data reports. This system automates the end-to-end process of compiling sales information, formatting it into a predefined Excel template, and delivering it via email to specified recipients.

The workflow begins by taking the recipient's email ID as input, followed by the integration of pre-existing sales data, which includes sales amounts, locations, and dates. The automation ensures accurate data placement within the Excel template, adhering to a standardized format. Once processed, the system uses UiPath's email automation capabilities to send the report as an attachment, ensuring timely and efficient communication.

This project eliminates manual intervention, reduces errors, and enhances productivity by enabling businesses to handle repetitive reporting tasks efficiently. The modular and scalable design allows future integration with data sources like databases or CRM systems for dynamic report generation, making it an ideal solution for modern enterprise needs.

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Features of the “Sales Report Automation Bot"

Feature	Description	Purpose
Automated Report Generation	The project automates the process of compiling sales data into a predefined Excel template, eliminating the need for manual report creation.	To save time and reduce manual effort in creating sales reports, ensuring accuracy and consistency in the process.
Email Integration	The system includes seamless email automation, sending sales reports as attachments to the recipient’s email ID specified in the workflow.	To streamline communication by automating the delivery of reports to stakeholders, enabling timely and efficient data sharing.
Predefined and Standardized Templates	Ensures all sales data is formatted uniformly, using a predefined Excel template, which enhances consistency and professionalism in reporting.	To maintain uniformity across all reports, making them easy to read and interpret while adhering to organizational standards.
Error Handling and Logging	Incorporates robust mechanisms to handle errors, such as invalid email IDs or missing data, and maintains logs for monitoring and auditing.	To ensure the reliability of the system by identifying and addressing issues during the process and providing a traceable log for troubleshooting.

Scalability and Adaptability	Designed to handle increased volumes of data, additional recipients, or integrations with databases or CRM systems for real-time data processing.	To future-proof the system, allowing it to accommodate growing data volumes and integrate with advanced tools or platforms as business needs evolve.

Workflow Activities the “Sales Report Automation Bot"

Step No	Activity	Description	Tools/Features Used
1	Input Email ID	The user enters the email ID where the sales report will be sent.	UiPath Input Dialog, Workflow Variables
2	Fetch Sales Data	Sales data (amount, place, date) is retrieved from a predefined data source or file.	Excel, UiPath Excel Activities (Read Range)
3	Format Data into Template	The fetched sales data is inserted into a predefined Excel template.	Excel, UiPath Excel Activities (Write Range)
4	Create Excel Template	A standardized Excel template for the sales report is designed with predefined columns (amount, place, date).	Microsoft Excel, UiPath Excel Activities (Create Workbook, Write Range)
5	Email Setup	Configuring the email body and attachment details, including recipient's email.	UiPath Email Activities (Send SMTP Mail)

6	Attach Template to Email	The generated Excel report (template) is attached to the email for delivery.	UiPath Email Activities (Send SMTP Mail)
7	Send Email	The formatted report is sent as an email attachment to the specified email ID.	UiPath Email Activities (Send SMTP Mail)
8	Error Handling	Detects errors (e.g., invalid email, missing data) and triggers a warning or log.	UiPath Try Catch, Logging, Message Box
9	Log Activity	Logs the activity status (success/failure) for tracking and auditing purposes.	UiPath Logging, File Writing (Text/Excel)
10	End Process	Marks the end of the workflow, signaling successful completion.	UiPath End Process, Logging

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Introduction

The **Sales Report Automation** project leverages Robotic Process Automation (RPA) to streamline the process of generating and distributing sales reports. In traditional sales reporting, manual data compilation, formatting, and emailing can be time-consuming and

prone to errors. This project aims to automate the entire workflow, significantly reducing manual intervention while ensuring accuracy and consistency in the reports.

The key functionality of the system involves collecting sales data (such as sales amounts, places of sales, and dates) from predefined data sources, populating the information into a standardized Excel template, and then automatically sending the report via email to a specified recipient. By automating these tasks, the project improves operational efficiency, reduces human error, and ensures timely delivery of important sales information to relevant stakeholders.

The project utilizes **UiPath**, a leading RPA tool, to design and implement the automation workflow. With its user-friendly interface and robust functionality, UiPath provides a powerful solution to automate repetitive tasks such as data entry, report generation, and email dispatch.

The primary objective of this project is to enhance productivity by eliminating manual processes, freeing up valuable time for employees to focus on more strategic activities. Additionally, by ensuring the consistent and error-free distribution of sales reports, the project supports better decision-making for businesses. Through its scalability and flexibility, the system is also poised for future enhancements, including integration with live databases and CRM systems, making it a future-ready solution for evolving business needs.

In the following chapters, the project will be discussed in detail, covering the tools and technologies used, the design and implementation process, as well as the benefits, challenges, and future scope.

1.1 General

The **Sales Report Automation** project uses **UiPath** RPA technology to automate the process of generating and emailing sales reports, reducing manual effort and errors. In traditional workflows, sales data is manually compiled, formatted into Excel, and sent via email, which can be time-consuming and prone to mistakes. This automation ensures timely, accurate, and consistent reporting, improving efficiency across teams.

The system retrieves sales data, formats it into a standardized Excel template, and automatically sends the report to specified email recipients. The solution is scalable, adaptable to different data sources, and can be integrated with other systems like CRMs in the future.

By automating these tasks, businesses can save time, reduce human error, and enable employees to focus on more strategic activities, leading to better decision-making and increased productivity.

1.2 Objectives

1.3 Existing System

1. **Manual Reporting Systems**
   In many organizations, sales reports are manually compiled by collecting data from various sources (spreadsheets, databases, CRMs). The data is then formatted in Excel or other tools, and the report is emailed to stakeholders. This process is time-consuming, error-prone, and requires significant human effort, especially when dealing with large volumes of data.

2. **Excel-based Reporting Systems**
   Some businesses use Excel with basic formulas or macros to automate parts of the reporting process. While Excel can handle data entry and calculations, the reporting and emailing process still often requires manual intervention, such as generating the report template and sending it to recipients.

3.**CRM Reporting Tools**

After categorizing and sorting the resumes, HR teams typically record information from the resumes into an Excel spreadsheet or database. This process involves manually entering data such as the candidate's name, job role, skills, and experience. Once the data

is recorded, HR staff generate reports based on this information, often summarizing the number of resumes received, categorized, and stored.

4.Basic RPA Solutions

Some businesses use simpler RPA tools that automate certain parts of the sales reporting process, such as extracting data from various systems or generating reports in Excel. However, these systems may lack the sophistication or flexibility required for end-to-end automation, including email configuration and advanced error handling.

5. Business Intelligence (BI) Tools (e.g., Power BI, Tableau)

Business Intelligence tools like Power BI and Tableau are widely used by organizations to visualize and analyze sales data. These tools offer advanced analytics and reporting features that allow users to create dynamic dashboards and reports. However, while these systems are excellent for visualization, they often do not fully automate the process of data collection, report formatting, and distribution. The generation of reports in these tools can require manual configuration and exporting, and the email distribution of reports may require additional integration or manual effort. Furthermore, these tools are typically used for more complex analysis and may not be as efficient for simple, recurring sales report tasks.

1.4 Proposed System

The **Sales Report Automation** system aims to automate the entire process of generating, formatting, and distributing sales reports, significantly improving efficiency and reducing manual effort in businesses. The proposed system leverages **UiPath**, a powerful Robotic Process Automation (RPA) tool, to streamline these tasks and ensure the timely delivery of accurate and standardized sales reports. By automating this repetitive process, the system reduces the chances of errors, enhances productivity, and ensures that key stakeholders receive the necessary data on time.
Key Features of the Proposed System:

1.Automated-Data-Retrieval:
The system automatically pulls sales data from predefined sources (e.g., Excel files,

databases, or CRM systems). This ensures that the latest data is used for report generation without the need for manual data entry.

2.Standardized Report Formatting:

Sales data is populated into a pre-designed Excel template, ensuring that all reports follow a uniform structure. This improves consistency and makes the reports easier to interpret.

3. Email Automation:

Once the report is generated, it is automatically attached to an email and sent to the specified recipients. The system allows for easy configuration of email settings, including the subject line, body, and recipient email addresses.

4. Error Handling and Logging:

The system is designed to detect any errors that may occur during the automation process (such as invalid email IDs, missing data, or file generation issues) and logs them for further action. This ensures that any issues can be promptly addressed.

5. Scalability and Flexibility:

The system is built to handle increasing volumes of data and can be easily adapted to integrate with other systems, such as CRMs or live databases. This makes the system scalable for future growth and new business requirements.

6. User-friendly Interface:

The system offers a simple interface for users to input parameters like the email recipient's address, sales data sources, and report frequency. This ensures that even non-technical users can easily interact with the system.

7. Time-Saving and Efficiency:

By automating the entire report generation and distribution process, the system eliminates the need for manual intervention, saving valuable time and resources. This enables employees to focus on more strategic and value-added tasks.

Benefits of the Proposed System

Time and Cost Efficiency: By automating the entire sales report generation and distribution process, the system eliminates the need for manual data entry, report formatting, and email sending. This leads to significant time savings and reduces labour costs, as employees no longer need to spend hours on routine reporting tasks. The saved time can be reallocated to more strategic initiatives that contribute to business growth.

Improved Accuracy and Consistency: The automation process ensures that sales data is handled consistently and accurately, with minimal risk of human error. By using predefined templates and automatic data retrieval, the system generates error-free reports, ensuring that stakeholders always receive reliable and up-to-date information.

Timely Delivery of Reports: The system is scalable, meaning it can handle increasing volumes of data and adapt to evolving business requirements. As the business grows or data complexity increases, the automation system can seamlessly integrate with other tools like CRMs or live databases, ensuring continued efficiency and flexibility.

Scalability for Growing Needs : The system is scalable, meaning it can handle increasing volumes of data and adapt to evolving business requirements. As the business grows or data complexity increases, the automation system can seamlessly integrate with other tools like CRMs or live databases, ensuring continued efficiency and flexibility.

Enhanced Productivity: By automating repetitive tasks, employees can focus on higher-value activities such as strategic planning, analysis, and customer engagement. This shift from manual reporting to more impactful work leads to increased productivity across the team and allows businesses to better allocate resources toward growth-oriented tasks.

Error Reduction: By automating processes, the system reduces human error, ensuring consistent and accurate resume categorization.

2. Literature Review

The field of Robotic Process Automation (RPA) has seen significant advancements in recent years, particularly in automating business processes such as subscription management, data collection, and reporting. This section explores existing research, methodologies, and tools related to RPA, subscription management systems, and web scraping technologies. It aims to provide a comprehensive understanding of the current state of these technologies and their applications in subscription tracking and data extraction.

2.1 Robotic Process Automation (RPA) in Business Operations

RPA is the use of software robots or "bots" to automate repetitive tasks typically performed by human workers. According to Avasarala et al. (2021), RPA is revolutionizing business operations by improving efficiency, accuracy, and scalability.

Bots can execute a range of tasks, including data entry, data extraction, and report generation, which would otherwise be performed manually. The key advantages of RPA, such as cost reduction and error minimization, have made it a preferred solution in industries like finance, healthcare, and customer service.

Several studies, including those by Michael and Tiwari (2019), demonstrate that RPA tools like UiPath, Blue Prism, and Automation Anywhere have been successfully applied in a variety of business operations, including subscription management. These tools allow businesses to automate tasks such as invoice processing, order management, and subscription tracking. Automation of subscription management, as noted by Gupta and Yadav (2020), helps businesses reduce the risk of human error and ensure timely reminders for renewals, which improves customer retention.

2.2 Subscription Management Systems

Subscription-based business models are becoming increasingly popular across various industries, including media, software, and e-commerce. According to Hoch et al. (2020), subscription management systems allow businesses to track renewals, manage billing cycles, and ensure customer satisfaction through timely communications. Traditional subscription management systems involve manual data tracking, which can be inefficient and prone to mistakes, especially as subscription volumes increase.

Ahrens (2021) suggests that automating the tracking of subscription renewals and notifications can significantly improve operational efficiency. RPA-based solutions, like the one proposed in this project, have the potential to enhance subscription management by integrating with existing systems to track due dates and automatically notify customers of upcoming renewals.

Moreover, Sadeghi et al. (2022) explore the concept of intelligent subscription management systems that not only track renewals but also offer insights into customer preferences and behaviors. These systems can provide businesses with more granular data to help optimize their subscription models and customer engagement strategies. Integrating such intelligence with RPA can further enhance the functionality and effectiveness of the system.

2.3 Web Scraping and Data Extraction Technologies

Web scraping has emerged as a powerful tool for data collection, enabling businesses to gather real-time information from websites for analysis and decision-making. Zhang et al. (2018) provide an overview of various web scraping techniques used for data extraction from websites, including parsing HTML and XML documents, utilizing APIs, and employing automation tools like Selenium. In recent years, web scraping has become a popular method for businesses to collect product-related data, including sales trends, reviews, and frequently bought items.

According to Almeida et al. (2020), web scraping tools can be integrated with RPA solutions to automate the process of extracting data from e-commerce platforms. This is particularly valuable for businesses that rely on real-time data to monitor market trends and customer behavior. The use of RPA in conjunction with web scraping allows for continuous, automated data extraction and analysis, reducing the need for manual intervention.

Additionally, León et al. (2019) highlight the importance of data accuracy when using web scraping for business applications. They emphasize the role of regular updates and error handling in ensuring that scraped data remains relevant and accurate. In the proposed system, automated web scraping will allow businesses to gather up-to-date

information on product sales and customer feedback, which will be vital for creating daily reports and making informed business decisions.

2.4 Report Generation and Automation

Automated report generation has become an essential feature of modern business intelligence tools. Adams et al. (2018) describe how report automation software can significantly reduce the time and resources required for generating accurate business reports. These tools often integrate with existing business systems, allowing for the automatic generation of reports based on live data.

In the context of subscription management and web scraping, Singh et al. (2021) suggest that generating reports automatically can provide businesses with timely insights without requiring manual data processing. Automated reports can summarize key metrics such as sales performance, customer behavior, and product reviews, helping businesses track their progress and make quick adjustments to their strategies.

The proposed will incorporate a report generation feature that automatically compiles scraped data and subscription renewal information into daily reports. These reports will be delivered in DOC format and will highlight critical insights such as popular products, customer purchasing trends, and subscription renewal statuses. Automating this process will enable businesses to make data-driven decisions without the need for manual report generation.

2.5 Challenges and Opportunities

Despite the benefits of RPA and web scraping, implementing these technologies in business operations presents certain challenges. Pereira and Mendes (2022) highlight the complexities involved in setting up RPA systems, including the need for careful process mapping, integration with existing software, and employee training. In the case of subscription tracking, ensuring the accuracy of renewal data and integration with customer management systems can pose difficulties.

Web scraping also presents challenges, such as handling anti-scraping mechanisms deployed by websites, ensuring compliance with data privacy regulations, and managing large volumes of data. Martinez and Sandoval (2020) discuss these challenges and

suggest the use of error handling techniques and adaptive scraping algorithms to address issues such as CAPTCHAs and data inconsistencies.

Despite these challenges, the growing demand for automation in business operations presents significant opportunities for RPA and web scraping technologies. The ability to automate subscription tracking and web data collection can lead to enhanced operational efficiency, improved customer engagement, and data-driven decision-making.

2.6 Conclusion

In conclusion, RPA, subscription management systems, and web scraping technologies have the potential to greatly enhance business operations, making them more efficient, accurate, and scalable. The proposed Automated Resume Classifier and Daily Report Bot combines these technologies to automate the tracking of subscription renewals, data collection from e-commerce websites, and report generation. By reviewing existing literature, it is evident that the integration of RPA with web scraping and subscription management systems can offer significant benefits to businesses, improving both operational efficiency and customer satisfaction. The proposed system will build on these advancements to deliver a fully automated, error-free, and scalable solution.

3. SYSTEM DESIGNS

The **Sales Report Automation** system is designed to streamline the process of generating, formatting, and distributing sales reports using **UiPath** RPA tools. The design incorporates a structured workflow that automates data retrieval, report creation, and email distribution, ensuring efficiency, accuracy, and consistency.

The system also features error handling and logging mechanisms to detect and log issues, such as invalid data or email failures, ensuring smooth operation and traceability. The modular design allows for scalability, enabling the system to handle increased data volumes or integrate with additional systems in the future.

3.1 GENERAL

3.1.1. System Architecture

User Interface Layer (UI)

- Purpose: The UI layer provides a user-friendly interface for configuring system settings, including email recipients, data sources, and report templates. It allows

users to interact with the system without needing technical knowledge of the backend automation.

- Key Features:
  - Easy configuration of system settings (email recipients, data sources, etc.)
    - Intuitive, user-friendly design for non-technical users
    - Customizable templates and report settings

2.Application Logic Layer

- PurposeThe Application Logic Layer is responsible for managing the core automation processes. It executes the RPA workflows and applies business logic for tasks like data retrieval, report formatting, and email dispatching.
- Key Features:
  - Automation of data retrieval, processing, and report generation
    Error handling to ensure smooth workflow execution

    Execution of predefined workflows (e.g., data extraction, report creation, email distribution)

3.Data Access Layer

- PurposeThis layer is responsible for retrieving the necessary sales data from external systems (e.g., CRMs, databases, or spreadsheets). It acts as the bridge between the automation process and the data sources.
- Key Features:
  Connects to various data sources (CRM systems, Excel, databases)
  Validates and cleans data before processing
  Ensures secure data retrieval with access control

4. **Report Generation Layer**

- Purpose: The Report Generation Layer focuses on creating structured reports using the retrieved data, applying predefined templates to ensure consistency and standardization in the output.
- Key Features:

Formats data into standardized templates (Excel, PDF)

Applies data transformations (calculations, aggregations) for meaningful reporting

Customizable report formatting options (charts, sorting, grouping)

5. Email Notification Layer

- Purpose: This layer automates the email distribution of generated reports to the specified recipients. It ensures that reports are sent on time and that emails are formatted correctly.
- Key Features:

Automated email sending with report attachments

Customizable email subject, body text, and recipient list

Error handling for failed email deliveries (invalid emails)

3.1.2. Functional Design

he **functional design** of the **Sales Report Automation** project outlines how the system processes, handles, and delivers sales reports through automated workflows. The design is divided into various modules, each responsible for specific tasks in the automation process. Below is a description of the functional design components:

1.Data Retrieval Module:

- **Function**: This module fetches the sales data from predefined sources such as databases, CRM systems (e.g., Salesforce), Excel sheets, or APIs.
- **Process**: The system establishes connections to these external systems, retrieves the relevant sales data (such as sales amount, place of sales, and date), and prepares it for processing.
- **Activities**:

Establish connections to external systems (CRM, databases, Excel, or APIs).

Retrieve relevant sales data (sales amount, place of sales, date, etc.).

Identify the necessary data fields and collect them for further processing.

Store retrieved data in a temporary staging area for validation.

- **Output**: Raw sales data for further processing in the next stages.

2.Data Validation and Cleaning Module:

- **Function**: Before processing, the data needs to be validated for completeness and consistency.
- **Process**: The system checks for missing values, invalid entries, or duplicate data, and ensures that the format is correct (e.g., correct date format, numerical values for sales).
- **Activities**:

  Check for missing, duplicate, or invalid data entries.

  Ensure that data values conform to the correct formats (e.g., date and numeric values).

  Validate data completeness and consistency (e.g., sales amounts matching sales records).

  Remove any corrupted or irrelevant data that would impact the report's accuracy.

  Flag any discrepancies and notify the user if further action is needed.

- **Output**: Clean and valid data ready for report generation.

3.Report Generation Module:

- **Function**: This module is responsible for creating the sales report using the clean data.
- **Process**: The validated data is automatically populated into a predefined report template (e.g., Excel). The template ensures consistency in formatting, includes necessary calculations (e.g., total sales per location), and applies any other transformations such as sorting or grouping.
- **Activities**:

  Load the predefined template (Excel, PDF) for the report generation.
  Map validated data into the template fields (e.g., sales amounts, dates, place of sales).
  Apply necessary calculations, such as summing sales totals or computing averages.
  Format the data into the report structure (e.g., sorting, grouping, applying conditional formatting).
  Finalize the report, ensuring it matches the desired template and design.
  Save the completed report in the desired format (Excel, PDF).

- **Output**: A completed sales report in the chosen format (Excel, PDF).

4.Email Composition and Sending Module:

- **Function**: This module handles the distribution of the generated sales report to the specified recipients.
- **Process**: Once the report is generated, the system creates an email that includes the report as an attachment. The email can be customized with a predefined subject and body message. The system will send this email to the specified email addresses automatically.
- **Activities**:

Create an email draft with a predefined subject and body text.

Attach the generated report to the email.

Retrieve email addresses of recipients based on the configuration.

Send the email automatically to the specified recipients.

- **Output**: The report is sent to the recipients via email.

5.Error Handling and Logging Module:

- **Function**: This module ensures that any issues encountered during the process are properly logged and handled.
- **Process**: If any error occurs (e.g., missing data, failed email delivery), the system logs the error and may trigger an alert or notification to the user or administrator. This ensures that issues are identified and resolved quickly.
- **Activities**:

  Continuously monitor the automation process for errors or failures.
  Capture error messages related to data retrieval, validation, report generation, or email sending.
  Log errors into a centralized logging system for review.

- **Output**: Error logs and notifications to maintain system integrity.

6.User Interface (UI) Module:

- **Function: This module allows the user to configure settings and monitor the automation process.**
- **Process: The user interacts with the system through a simple and intuitive UI. Here, they can input data like email recipients, report frequency, and select templates. The UI also allows users to view the status of the reports being generated and sent.**
- **Activities**:

  Allow users to configure settings such as email recipients, report templates, and scheduling.

Provide options to upload and select data sources for the report (e.g., CRM, Excel files).

Display the status of the ongoing automation process (e.g., in-progress, completed).

Allow users to view generated reports and past automation history.

- **Output: User-configured settings and interaction with the automated process.**

7.Security Module:

- **Function: The security module ensures that all sensitive data, such as sales figures and email addresses, are protected from unauthorized access.**
- **Process: The system uses encryption for data storage and transmission and implements access control to ensure only authorized users can configure and run the automation processes.**
- **Activities**:

Encrypt sensitive data (e.g., sales data, email addresses) during storage and transmission.
Implement role-based access control to restrict who can access specific features of the system.
Ensure secure communication by enforcing secure protocols (e.g., HTTPS, SSL) for email sending and data transfer.

- **Output: Secure transmission of data and protection against unauthorized access.**

3.1.2.3. Technical Design

Below is the detailed technical design of the bot based on the chosen tools and technologies:

1. UiPath Studio

UiPath Studio is the core platform for automating the entire workflow. It is responsible for performing the tasks of data retrieval, report generation, validation, and sending emails. The automation tool handles all the repetitive tasks, reducing manual intervention and ensuring consistency.

Key Features:

- Drag-and-Drop Interface: UiPath provides a user-friendly interface for designing automation workflows without requiring extensive coding.

  Prebuilt Activities: The tool comes with built-in activities such as 'Read Text File,' 'Move File,' 'Send SMTP Mail Message,' and 'Write Range' to handle the automation processes seamlessly.

- Error Handling: UiPath's robust exception handling framework ensures that any errors or exceptions in the workflow are caught and logged for analysis.

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2. Microsoft Excel

Role in the System: MS Excel serves as the primary tool for generating the sales report. The data retrieved from the database or CRM systems is processed and populated into an Excel template. Excel handles the report formatting, calculations, and data presentation.

Key Features:

- **Template Customization**: Excel allows easy customization of report templates, where dynamic placeholders are replaced with actual sales data.

- **Data Analysis & Calculation**: Supports data aggregation, calculations, and data analysis functions (e.g., SUM, AVERAGE, COUNT) for sales data.

Data Formatting: Conditional formatting, text formatting, and cell highlighting can be applied to improve report readability.

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3. Windows Task Scheduler / Orchestrator

Role in the System: Windows Task Scheduler or UiPath Orchestrator is used to schedule and automate the execution of the bot on a daily or predefined basis.

Key Features:

- Task Scheduling: Both tools allow for scheduling the bot to run at specified times, ensuring that the automation process runs consistently without manual intervention.

  Orchestrator (Optional): If using UiPath Orchestrator, it provides additional features like centralizing robot management, tracking logs, and scheduling tasks across multiple environments.

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4. SMTP (Simple Mail Transfer Protocol)

Role in the System: SMTP is used for automating email delivery, sending the generated sales report to specified recipients. UiPath integrates with SMTP or Outlook/Exchange to send the email with the Excel report attached.

Key Features:

- Email Sending: UiPath uses the 'Send SMTP Mail Message' activity to automatically send the daily report (Excel file) to the recipient (e.g., HR).
- Email Customization: The email's subject, body, and attachments can be dynamically customized within the bot workflow.
- Error Notifications: In case of failure to send the email, error notifications are logged, and fallback mechanisms can be triggered.

5. Security Tools and Encryption

- Role in the System: Security mechanisms ensure that all sensitive data (e.g., sales data, email addresses) is protected during both transmission and storage. These tools

prevent unauthorized access, ensuring that only authorized users and systems can access or alter the data.

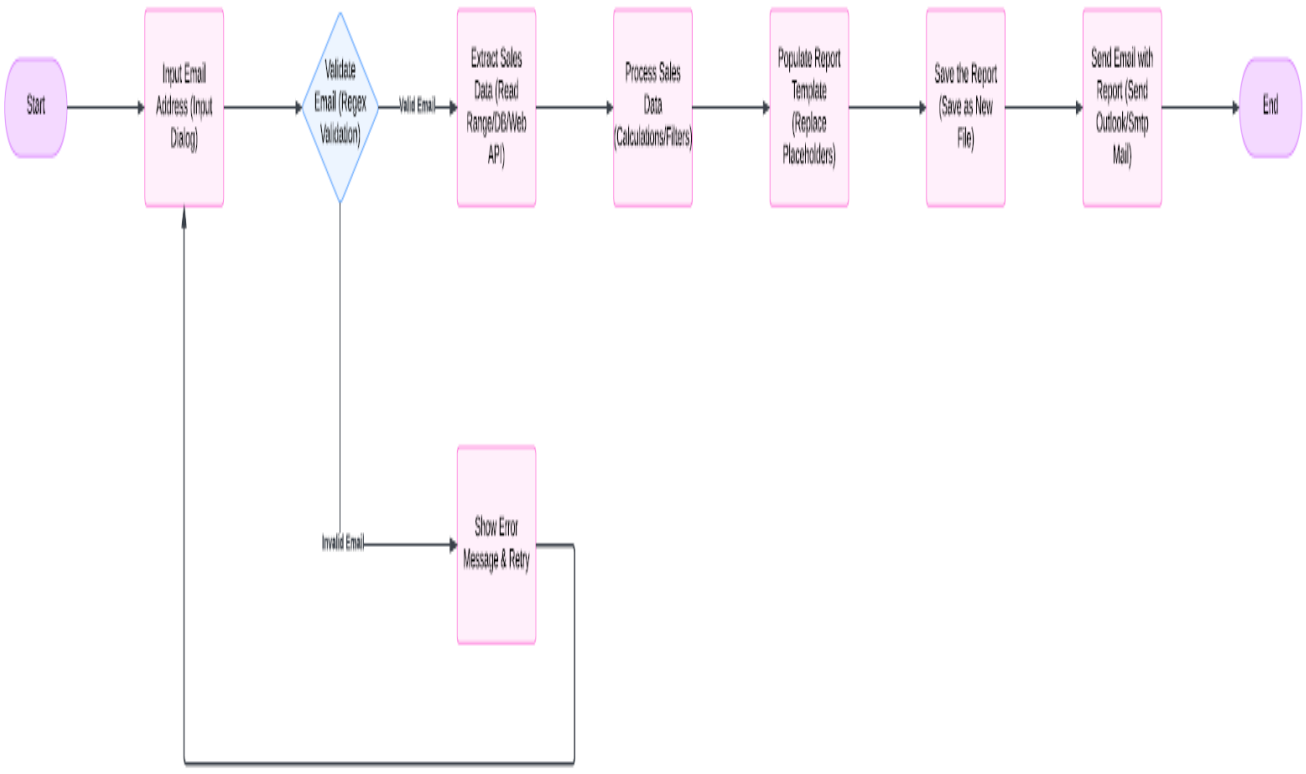
- Key Features:

- **Data Encryption**: Encryption protocols (e.g., AES) ensure that sensitive data is protected during storage and transmission.

- **SSL/TLS for Communication**: Ensures secure communication during data transfers, such as email sending and API calls.

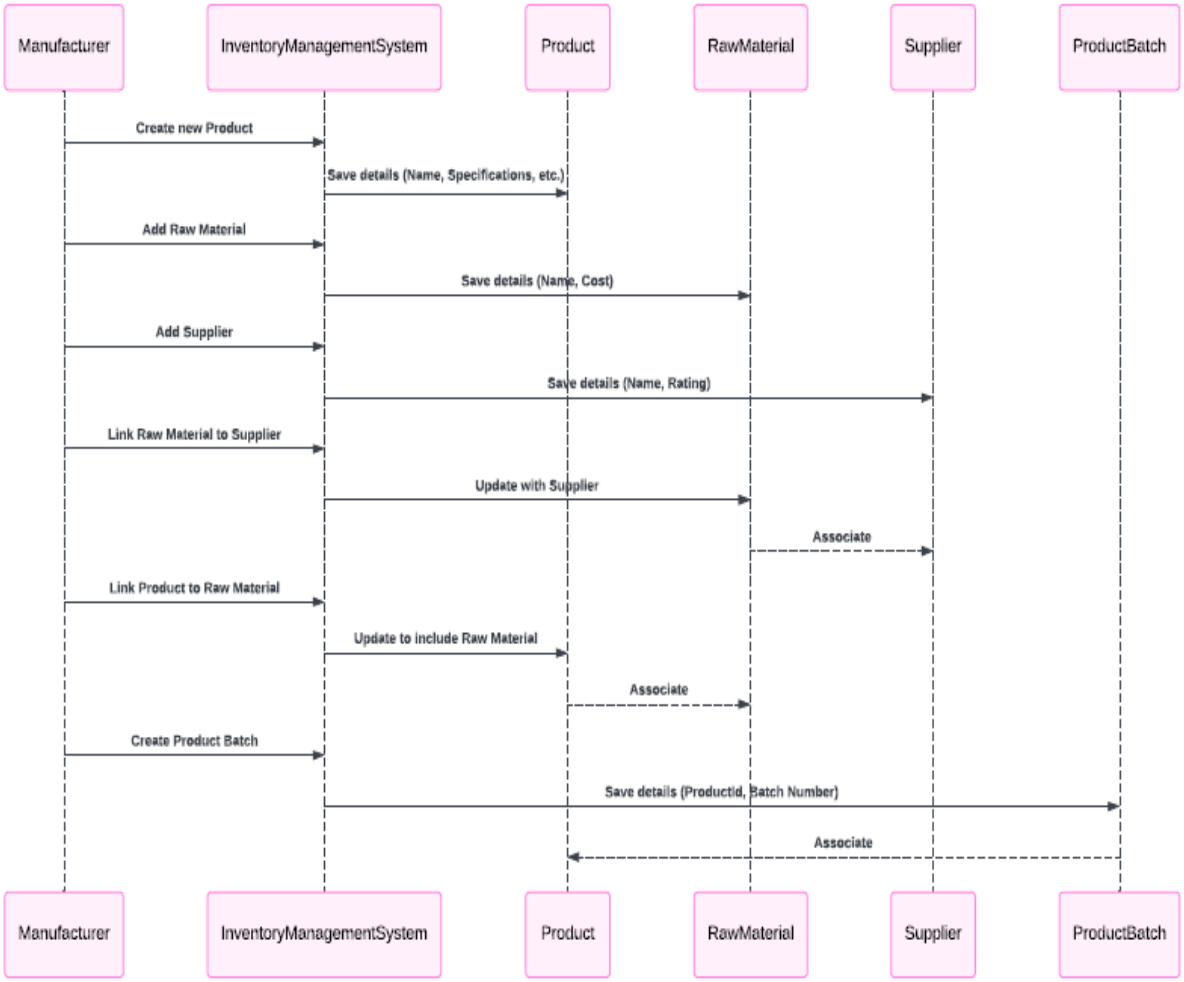
- **Role-Based Access Control (RBAC)**: Restricts system access based on roles, ensuring that only authorized personnel can view or modify sensitive information.

3.1. SYSTEM FLOW DIAGRAM



ARCHITECTURE DIAGRAM:

3.3 SEQUENCE DIAGRAM



Conclusion

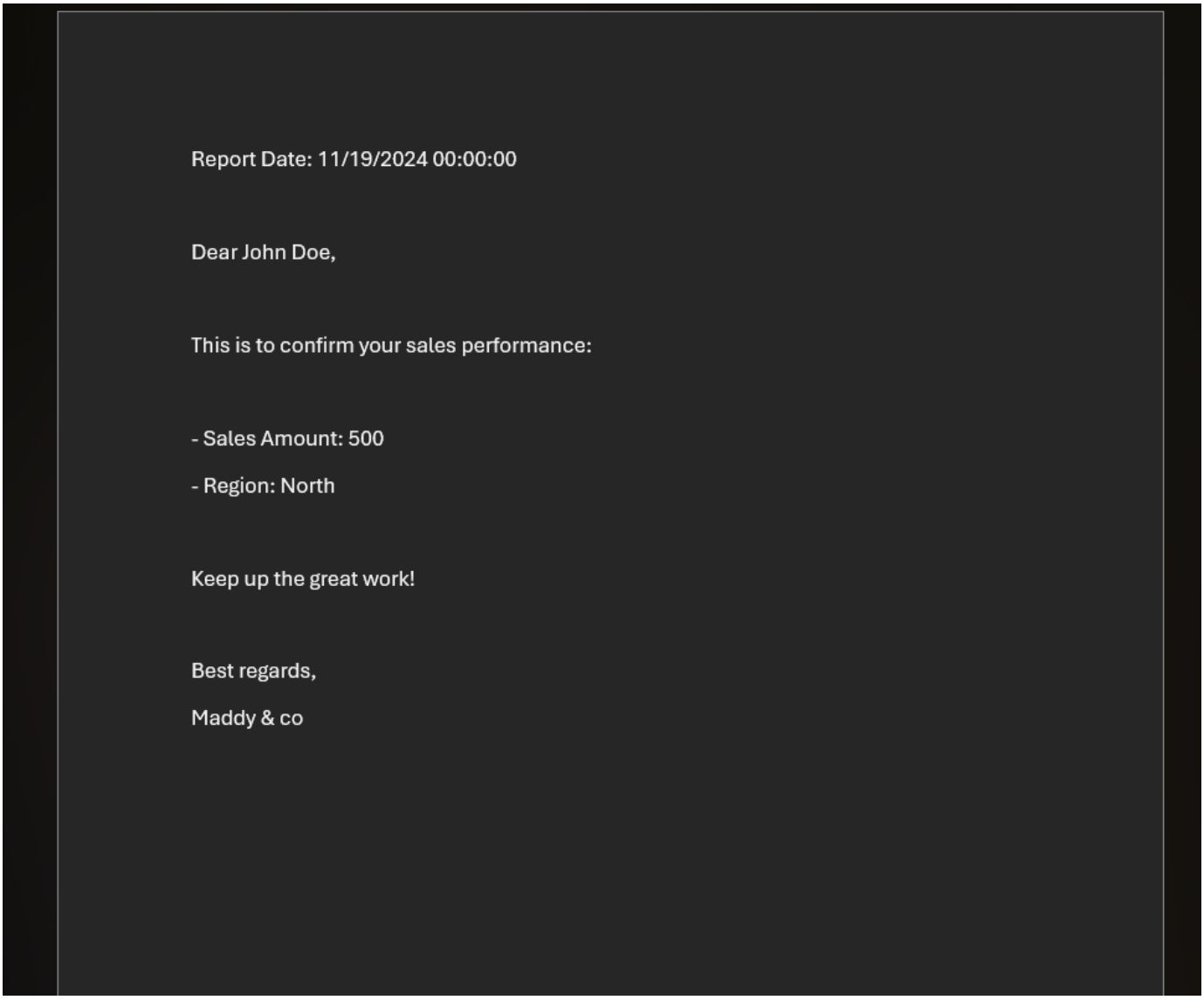
The Sales Report Generation and Email Automation project effectively demonstrates the potential of Robotic Process Automation (RPA) to streamline routine business processes, enhance operational efficiency, and minimize errors. By leveraging UiPath, the system automates the end-to-end workflow of extracting sales data, processing key metrics, generating structured reports, and distributing them via email, reducing manual intervention and saving valuable time.

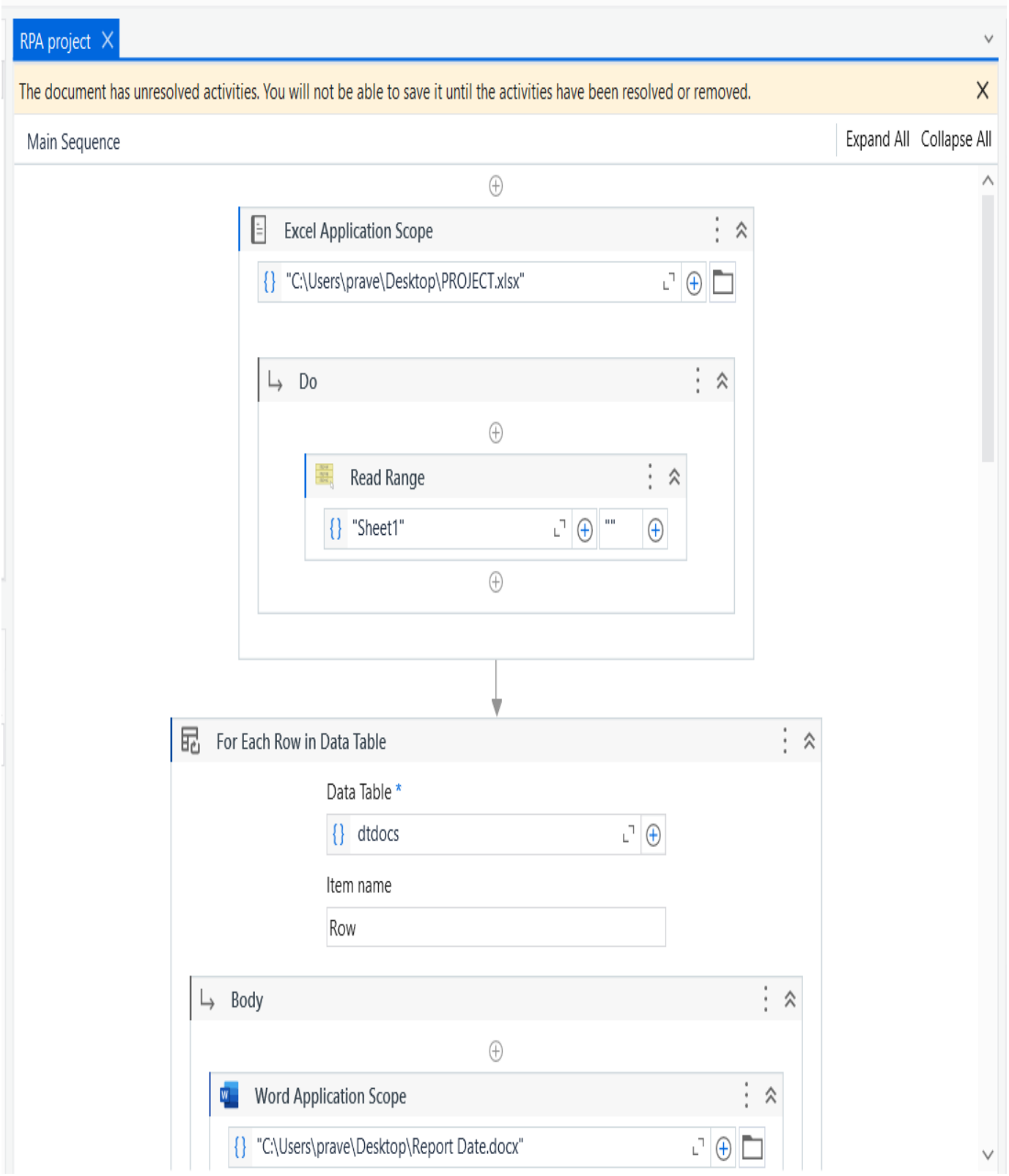
This solution ensures accuracy in report generation, consistency in formatting, and timely communication with stakeholders. The integration of email validation and error-handling mechanisms further enhances the reliability and robustness of the process. With its scalability and scheduling capabilities, the automation can be adapted to meet diverse business needs, making it a valuable asset for organizations looking to optimize their reporting processes.

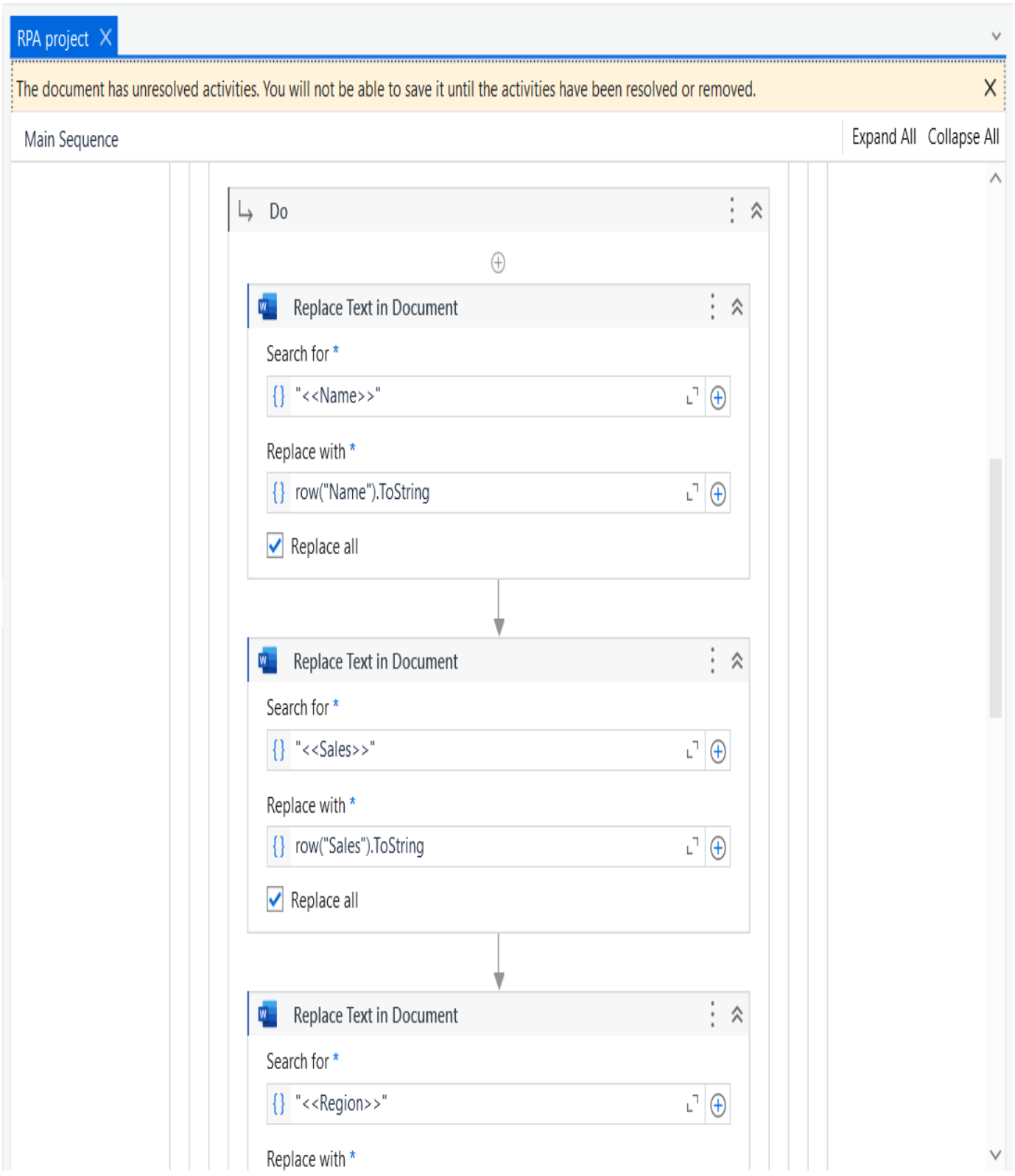
Overall, this project highlights the transformative potential of RPA tools like UiPath in improving productivity, reducing operational costs, and enabling teams to focus on strategic decision-making.

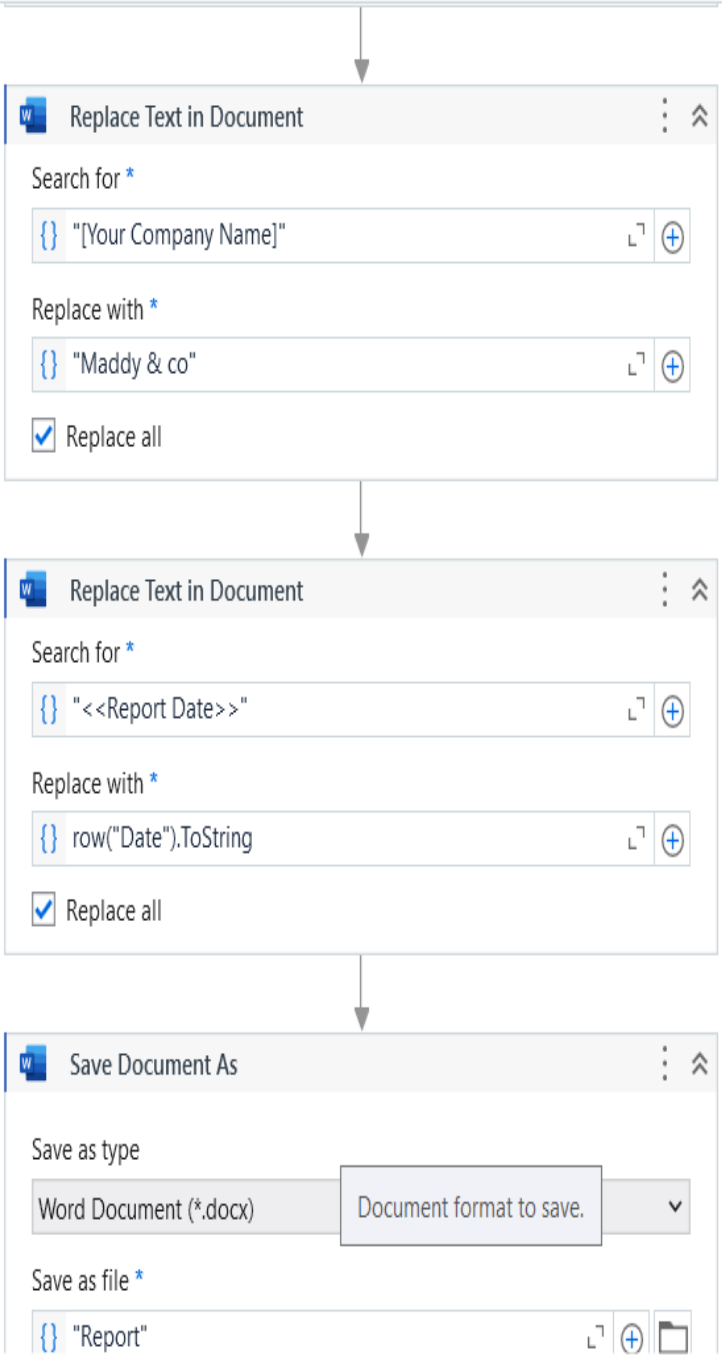
APPENDICES:

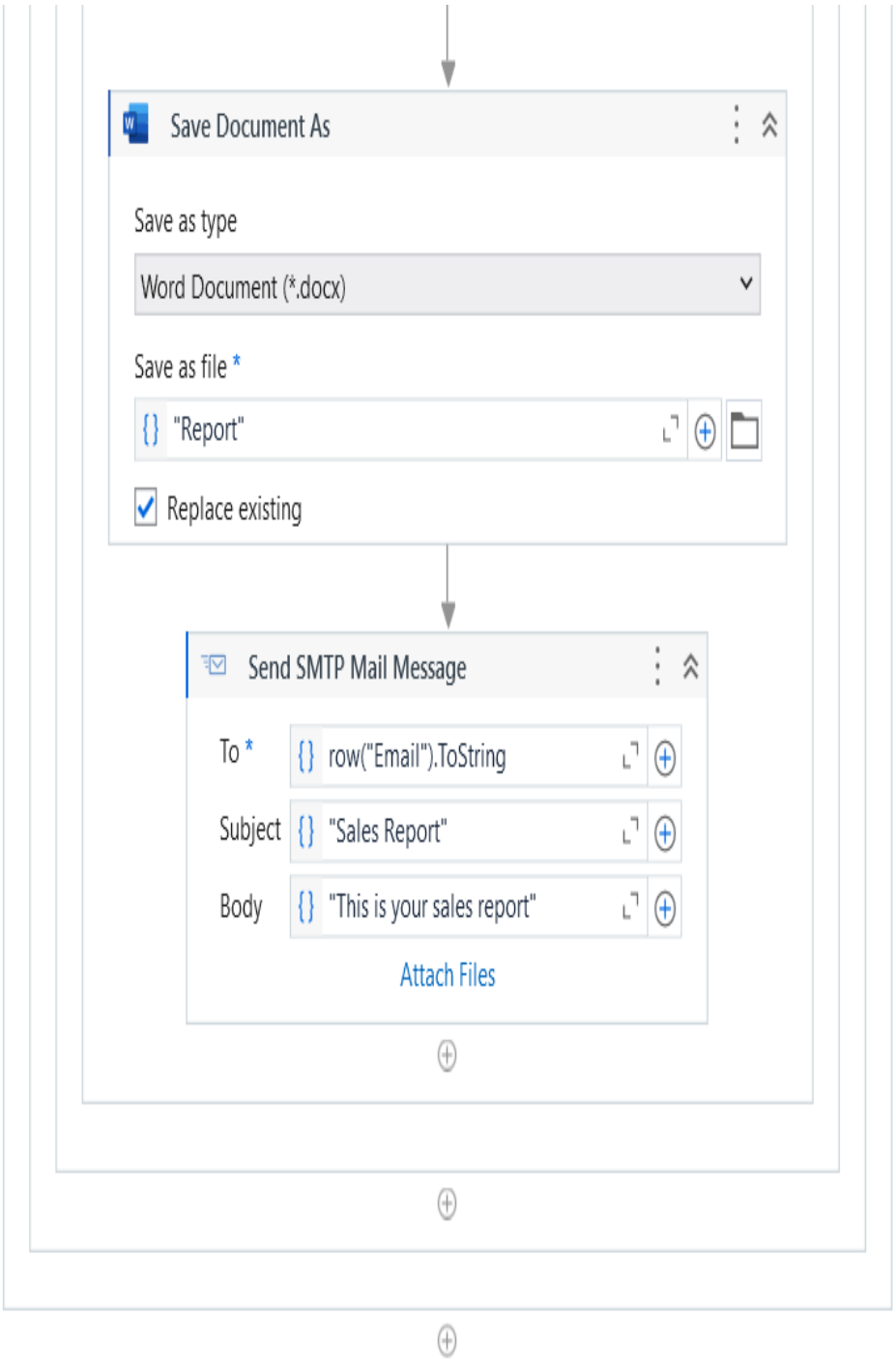
Form Template:




RPA project
The document has unresolved activities. You will not be able to save it until the activities have been resolved or removed.
Main Sequence
Expand All
Collapse All
Excel Application Scope
"C:\Users\prave\Desktop\PROJECT.xlsx"
Do
Read Range
"Sheet1"
""
For Each Row in Data Table
Data Table *
dtdocs
Item name
Row
Body
Word Application Scope
"C:\Users\prave\Desktop\Report Date.docx"


RPA project
The document has unresolved activities. You will not be able to save it until the activities have been resolved or removed.
Main Sequence
Expand All
Collapse All
Do
Replace Text in Document
Search for *
"<<Name>>"
Replace with *
row("Name").ToString
Replace all
Replace Text in Document
Search for *
"<<Sales>>"
Replace with *
row("Sales").ToString
Replace all
Replace Text in Document
Search for *
"<<Region>>"
Replace with *


Replace Text in Document
Search for *
"[Your Company Name]"
Replace with *
"Maddy & co"
Replace all
Replace Text in Document
Search for *
"<<Report Date>>"
Replace with *
row("Date").ToString
Replace all
Save Document As
Save as type
Word Document (*.docx)
Document format to save.
Save as file *
"Report"


Save Document As
Save as type
Word Document (*.docx)
Save as file *
"Report"
Replace existing
Send SMTP Mail Message
To *
row("Email").ToString
Subject
"Sales Report"
Body
"This is your sales report"
Attach Files

References

1. **UiPath Documentation**
UiPath Official Documentation. Available at: https://docs.uipath.com
Comprehensive guide on UiPath activities, workflows, and email automation.

2.Microsoft Office Excel Integration
Microsoft Support - Automating Excel Operations. Available at: https://support.microsoft.com/excel
Details on working with Excel files and templates.

3. **SMTP and Email Automation**
UiPath Email Automation Guide. Available at: https://docs.uipath.com/activities/docs/email
- Instructions for using the SMTP and Outlook activities for email functionality.

4. **Regex Validation**
Regular Expressions Quick Reference. Available at: https://regex101.com
- Resource for creating and testing regex patterns for email validation.

5. **RPA Best Practices**
RPA Best Practices and Standards. Available at: https://www.uipath.com/rpa/best-practices
- Insights into designing efficient and scalable RPA workflows.

6. **UiPath Academy**
UiPath Academy Online Training. Available at: https://academy.uipath.com
- Free courses on UiPath functionalities, including data extraction, template management, and email automation.

7. **Data Processing and Analytics**
Practical Guide to Data Processing with UiPath. Available at: https://www.uipath.com/blog/data-processing
Techniques for handling and processing data in UiPath.

8. **Lucidchart for Diagramming**
Lucidchart Flowchart Guide. Available at: https://www.lucidchart.com
- Tool for designing and visualizing process flows.

9. **Automation Case Studies**
Automation Success Stories. Available at: https://www.uipath.com/resources/case-studies
- Real-world examples of RPA applications in report generation and email automation.