INNOVENTRY TASK AUTOMATION BOT A PROJECT REPORT

Submitted by

SABARISH M (220701234)

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RAJALAKSHMI ENGINEERING COLLEGE

CHENNAI - 602105

BONAFIDE CERTIFICATE

Certified that this project report "Innoventry task automation bot" is the bonafide work of "SABARISH M (220701234)" who carried out the project work for the subject OAI1903-Introduction to Robotic Process Automation under my supervision.

Dr. N. Durai Murugan

SUPERVISOR

Associate Professor

Department of

Computer Science and Engineering

Rajalakshmi Engineering College

Rajalakshmi Nagar

Thandalam

Chennai - 602105

Submitted to Project and Viva Voce Examination for the subject OAI1903-Introduction to Robotic Process Automation held on ______.

ABSTRACT

This project leverages Robotic Process Automation (RPA) to streamline and enhance the operational workflows in **Innoventry software**, widely used for accounting and inventory management. The automation includes critical processes such as billing, where invoices are generated and stored efficiently; report generation and analysis, enabling the extraction of insights for decision-making; and data organization, with analyzed reports being saved in a structured format within an Excel file for further use.

In addition to these core tasks, the project incorporates a dedicated stock management system. Using RPA, a separate Excel-based solution was developed to check stock levels and update them as needed, ensuring inventory accuracy and minimizing manual intervention. This stock management solution integrates seamlessly with Innoventry workflows to provide real-time insights into inventory status.

By automating repetitive and time-consuming tasks, the project reduces human error, improves operational efficiency, and frees up resources for more strategic activities. This implementation highlights the potential of RPA in transforming traditional business processes, making them faster, more accurate, and highly reliable. The project is particularly beneficial for small and medium-sized businesses aiming to optimize their use of Innoventry software while maintaining a cost-effective approach.

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LIST OF ABBREVIATION

Abbreviation	Acronym	
RPA	Robotic Process Automation	
API	Application Programming Interface	
UI	User Interface	
CRUD	Create Read Update Delete	
SMTP	Simple Mail Transfer Protocol	

CHAPTER 1 INTRODUCTION

1.1 INTRODUCTION

In today's competitive business environment, efficiency and accuracy are critical for managing day-to-day operations, especially for small and medium-sized businesses (SMBs). **Innoventry software**, a popular accounting and inventory management tool, helps businesses streamline tasks such as billing, invoicing, inventory tracking, and reporting. However, performing these tasks manually can be time-consuming and prone to errors, limiting productivity and operational efficiency.

This project explores the application of **Robotic Process Automation** (**RPA**) to automate key processes within Innoventry software. RPA is a cutting-edge technology that uses bots to mimic human interactions with software applications, enabling businesses to automate repetitive, rule-based tasks with speed and precision.

The scope of this project includes automating billing processes, generating and analyzing reports, and storing the results in Excel files for structured data management. Additionally, it addresses inventory management by creating an Excel-based stock checking and updating system, ensuring accurate and up-to-date inventory tracking.

By automating these tasks, the project demonstrates how RPA can transform traditional workflows, reduce manual effort, and improve overall efficiency, providing SMBs with a competitive edge in their operations.

1.2 OBJECTIVE

The objective of this project is to leverage Robotic Process Automation (RPA) to enhance the operational efficiency of Innoventry software by automating repetitive and time-intensive tasks. Specifically, the project aims to:

- 1. Automate Billing: Streamline the process of generating and storing invoices, reducing manual intervention and ensuring accuracy.
- 2. Generate and Analyze Reports: Automate the creation of business reports and analyze them to extract valuable insights, storing the results in an organized format for future reference.
- 3. Develop a Stock Management Solution: Create an Excel-based system for checking current stock levels and updating inventory, ensuring real-time accuracy and minimizing discrepancies.
- 4. Reduce Manual Errors: Eliminate human errors associated with repetitive data entry and processing tasks, improving the reliability of business processes.
- 5. Enhance Operational Productivity: Save time and effort for users by automating routine tasks, allowing businesses to focus on strategic initiatives.

This project serves as a proof of concept for integrating RPA with Innoventry software, showcasing its potential to optimize resource usage and improve overall business performance.

1.3 EXISTING SYSTEM

Existing systems often come with several challenges that hinder their effectiveness for businesses, particularly small and medium-sized businesses (SMBs). One of the key issues is limited customization, as predefined workflows are often rigid and difficult to tailor to specific business needs. Additionally, the high costs of ERP systems and RPA platforms make them less

accessible for SMBs, limiting their ability to adopt these technologies. Another challenge is poor integration, as many tools fail to seamlessly integrate with external applications like Excel, which is often essential for reporting and data management. While these systems can automate certain tasks, they still require manual intervention for more complex operations, such as detailed report analysis or updating stock information. Furthermore, scalability issues arise when SMB-friendly tools struggle to keep up with increasing automation demands as the business grows, creating limitations in their long-term viability.

1.4 PROPOSED SYSTEM

Your proposed system overcomes the drawbacks of existing systems in the following ways:

- 1. Customization: By using RPA to automate specific tasks within Innoventry software, your system can be tailored to unique business needs, like custom stock checking and report analysis, without being limited by predefined workflows.
- 2. Cost-Effective: Unlike expensive ERP systems, your system offers an affordable solution for SMBs by leveraging RPA to automate tasks in an existing software (Innoventry), eliminating the need for costly new software or complex integrations.
- 3. Seamless Integration: Your system integrates RPA with Innoventry and Excel, enabling smooth data transfer and automation across platforms without requiring complex external software.
- 4. Reduced Manual Intervention: By automating repetitive processes like billing, report generation, and stock updates, your system minimizes human errors and reduces the need for manual effort, boosting productivity.
- 5. Scalability: The system can be easily scaled as business needs grow, as RPA can be expanded to include more tasks without significantly

increasing costs or requiring major changes to existing software
infrastructure.
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CHAPTER 2 LITERATURE REVIEW

2.1 GENERAL

The automation of business processes using Robotic Process Automation (RPA) has become an important area of research and application, particularly in small and medium-sized businesses (SMBs). RPA is widely regarded for its ability to streamline repetitive tasks, reduce human error, and increase efficiency in software applications.

1. Robotic Process Automation (RPA)

RPA technology allows businesses to automate rule-based tasks by mimicking human actions on user interfaces. A study by Avasarala et al. (2019) discusses how RPA improves productivity by automating repetitive tasks across various industries. In accounting and finance, RPA can handle processes such as invoice generation, payment reconciliation, and report generation, eliminating manual data entry and reducing errors. For instance, Varma (2020) explores RPA's application in streamlining financial reporting, highlighting its effectiveness in creating accurate reports quickly and consistently.

2. Automation in Accounting and Inventory Management

Automation in accounting systems, such as Tally and QuickBooks, has been well-documented. According to Pandey and Ghosh (2018), ERP systems automate routine accounting tasks like invoicing and financial reporting, which traditionally took significant time and effort. These systems, however, often come with high costs and limited customization, which can be a challenge for SMBs. Additionally, many existing systems lack the ability to automate detailed

tasks like inventory tracking or report analysis, leaving room for further automation improvements.

3. Excel-Based Automation for Inventory Management

Excel has long been used in SMBs for inventory management due to its flexibility and ease of use. Liu and Chen (2019) examined how Excel can be integrated with RPA to track and update inventory levels in real-time. Their findings show that integrating RPA with Excel can improve accuracy and reduce the time spent on manual inventory updates, providing businesses with up-to-date stock information and enhancing decision-making.

4. Benefits of Custom Automation for SMBs

A significant body of literature points to the challenges SMBs face when adopting larger-scale enterprise solutions due to cost and complexity. Thompson et al. (2017) note that while ERP systems like SAP and Oracle provide comprehensive solutions, their high costs and extensive implementation requirements often make them impractical for smaller companies. In contrast, tailored RPA systems offer an affordable alternative that can integrate with existing software, like Innoventry, to automate specific tasks at a lower cost. This makes RPA an ideal solution for SMBs, enabling them to achieve automation benefits without the overhead of larger ERP systems.

5. Integration Challenges and Solutions

Despite the advantages of RPA, integrating it with existing software can pose challenges. Davis (2021) highlighted that many automation systems struggle with compatibility issues, particularly when integrating third-party software or legacy systems. However, advances in RPA tools like UiPath and Automation Anywhere now provide pre-built connectors and templates, making integration with platforms like Innoventry and Excel easier. These tools allow for efficient

data exchange between systems, addressing integration challenges and enhancing the automation of tasks.

6. Reducing Human Error and Improving Productivity

The primary benefit of automating business processes is the reduction of human error. Kumar and Singh (2019) found that human error in manual processes like data entry, report generation, and stock updates could lead to financial discrepancies and inefficiencies. By automating these processes, RPA can reduce the risk of errors, improve data accuracy, and increase operational efficiency. Furthermore, by offloading repetitive tasks to RPA bots, employees can focus on higher-value tasks, enhancing overall productivity.

CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

The flow starts with User Input, where the user initiates the process by logging into Innoventry Software. After logging in, the user selects one of the available tasks: Billing Process, Report Analysis, or Stock Checking.

- If the Billing Process is selected, the bot will automate the billing task, such as generating invoices or processing payments.
- If Report Analysis is chosen, the bot will automate the report generation, extracting data and creating the reports.
- If Stock Checking is selected, the bot will automate the stock level checks, updating inventory data.

Once the task is selected, the user moves to Process Selection (RPA) where the RPA Bot is triggered to execute the chosen task. The RPA bot performs the necessary automation actions based on the selected task:

- For Billing Task, it will generate invoices or process payments and update the Excel file.
- For Report Analysis, it will extract data and generate the report, then store it in an Excel file.
- For Stock Checking, it will check the stock levels and update the stock data in an Excel file.

Once the tasks are completed, the results are handled as follows:

- The updated reports and stock data are stored in Excel files.
- If needed, notifications are sent to the user, alerting them about important updates or task completions.

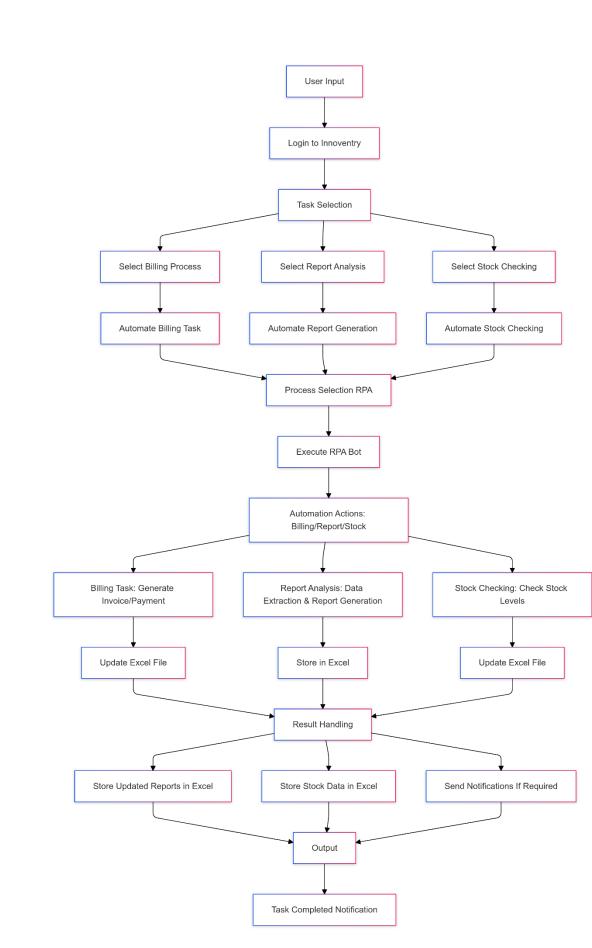


Fig 3.1 Systemflow diagram

3.2 ARCHITECTURE DIAGRAM

This diagram represents the architecture of the system, where the process begins with the User Interface (which could be either a web or console interface) through which the user interacts with the system. Once the user inputs their tasks, it interfaces with the Innoventry Software (Core), which handles the primary business processes like billing, report analysis, and stock management.

The core system then interacts with RPA Bots (Task Automation), which automate the specific tasks based on the user's selection (such as billing, generating reports, or stock management). The results of these tasks (like invoices, reports, or stock data) are stored in Excel Files for easy access and tracking.

Additionally, the Notification System (optional) is integrated to send alerts to the user about task completion or important updates, such as task success or required attention. This architecture ensures a streamlined process from task selection to task completion, leveraging automation and easy data management with Excel files.

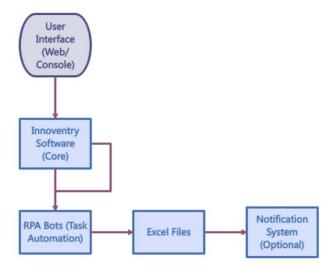
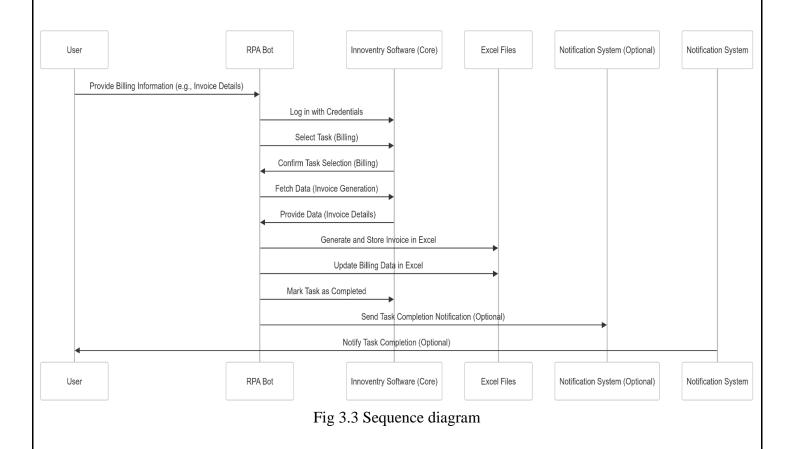


Fig 3.2 Architecture diagram

3.3 SEQUENCE DIAGRAM

The sequence diagram outlines the interaction between various components involved in the automated billing process using an RPA bot integrated with Innoventry Software. The process begins with the User providing billing information to the RPA Bot, which then logs into Innoventry Software and selects the billing task. Once the task is confirmed by Innoventry, the RPA Bot fetches the required invoice data from the software and stores it in Excel Files. The bot also updates the billing data in the Excel file to reflect the most recent changes. After completing the task, the RPA Bot marks the task as finished within Innoventry and optionally triggers the Notification System to inform the User of task completion. This sequence helps automate the billing process, reducing manual intervention and enhancing efficiency by managing data and notifications seamlessly.



CHAPTER 4

PROJECT DESCRIPTION

4.1 MODULES

1. User Interface Module

• **Purpose**: Provides a simple interface for the user to interact with the automation system.

• Key Features:

- Minimal user input for tasks such as invoice details, stock levels, and report generation.
- Displays notifications about task completion.
- **Technology Used**: Web or Console interface (depending on the implementation).

2. RPA Bot Module

- **Purpose**: Automates the business processes within Innoventry Software.
- Key Features:
 - Logs into Innoventry Software.
 - Selects and executes tasks (billing, report generation, stock management).
 - Fetches data from Innoventry Software and stores it in Excel files.
 - o Generates reports and updates data in Excel.
 - Sends task completion notifications.
- Technology Used: RPA tools like UiPath, Automation Anywhere, or Blue Prism.

3. Innoventry Software Module (Core)

• **Purpose**: The primary software for managing accounting, inventory, and reports.

Key Features:

- Handles core functions such as billing, report generation, and stock management.
- Provides data to the RPA bot upon request (e.g., invoice data, stock levels).
- Processes billing, generates reports, and updates stock levels based on fetched data.
- Technology Used: Innoventry Software (Accounting and Inventory Management system).

4. Excel Integration Module

- **Purpose**: Stores and manages the output data generated by the RPA bot.
- Key Features:
 - Stores invoices, reports, and stock levels in Excel format.
 - Makes the output data easy to access, manipulate, and analyze by the user.
 - Can integrate with other tools for further data processing.
- Technology Used: Excel (via automation or APIs).

5. Task Notification Module

- Purpose: Sends notifications to the user upon task completion.
- Key Features:
 - Notifies the user when a task (billing, report generation, or stock management) is completed.
 - Ensures transparency and communication between the system and the user.

• **Technology Used**: Email notifications, in-app notifications, or external communication tools.

6. Billing Automation Module

• **Purpose**: Automates the entire billing process within Innoventry Software.

• Key Features:

- Generates invoices based on user input (customer details, amounts, etc.).
- o Processes payments and updates relevant information.
- Stores invoices in Excel files for future reference.
- **Technology Used**: RPA tools for data fetching and invoice generation, Excel for storage.

7. Report Generation Module

- **Purpose**: Automates the creation of financial and inventory reports.
- Key Features:
 - o Fetches necessary data from Innoventry Software.
 - Processes data and generates reports (financial summaries, inventory reports, etc.).
 - Saves reports in Excel for further analysis.
- **Technology Used**: RPA tools, Excel for report storage.

8. Stock Management Automation Module

- Purpose: Automates the process of stock checking and updating.
- Key Features:
 - Fetches current stock levels from Innoventry Software.
 - Compares the stock levels with required thresholds.
 - Updates the stock database accordingly.

• Technology Used: RPA tools, Excel for tracking stock data.

9. Scalability and Extension Module

- **Purpose**: Allows the system to scale by automating additional tasks or processes within Innoventry Software.
- Key Features:
 - Can add new tasks such as payroll processing, inventory replenishment, etc.
 - o Provides flexibility to scale automation as the business grows.
- **Technology Used**: RPA tools, Innoventry Software, Excel for extended functionalities.

CHAPTER 5 OUTPUT SCREENSHOTS

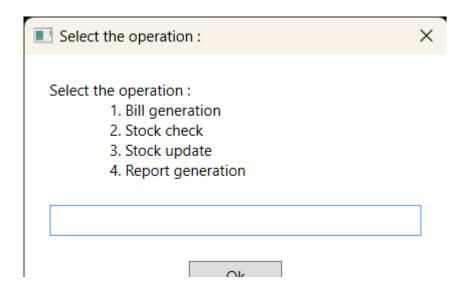


Fig 5.1 Input dialog

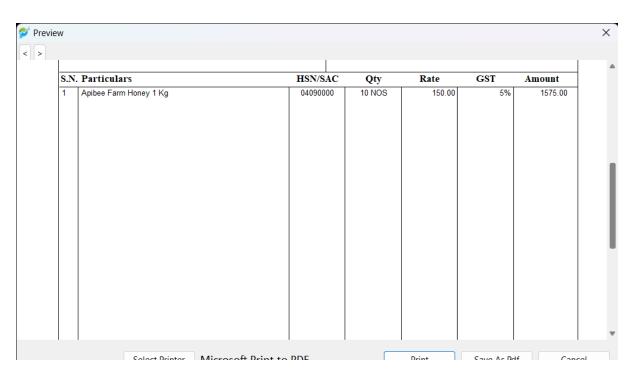


Fig 5.2 Automated bill

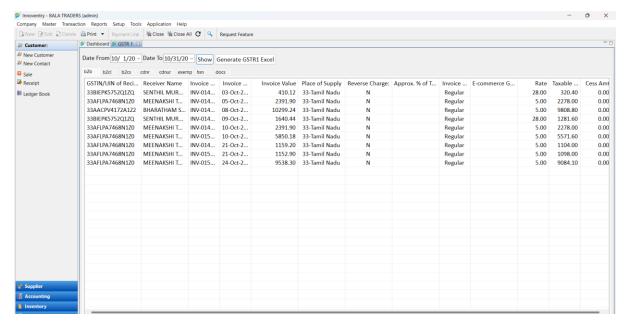


Fig 5.3 Summary report

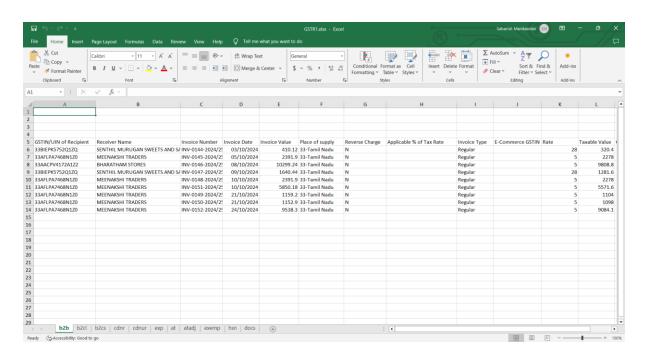


Fig 5.4 Summary excel report

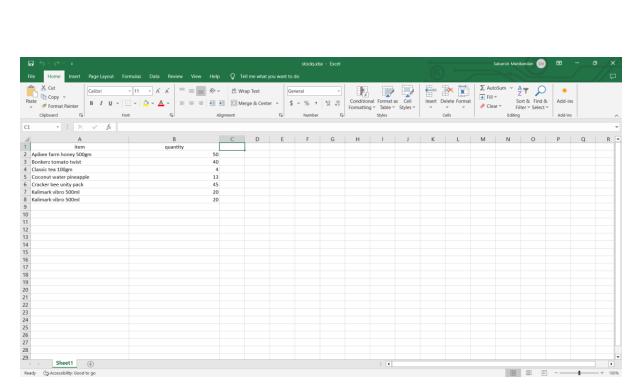


Fig 5.5 Stock excel report

CHAPTER 6 CONCLUSION

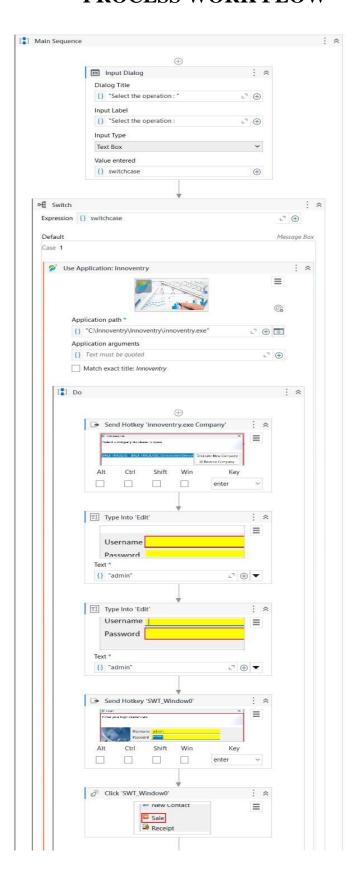
The implementation of Robotic Process Automation (RPA) in Innoventry Software has successfully streamlined key business operations, including billing, report generation, and stock management. By automating repetitive and time-consuming tasks, this system reduces manual intervention, enhances accuracy, and improves overall operational efficiency. The user interacts minimally, providing necessary inputs such as invoice details, while the RPA bot handles the tasks of logging in, selecting processes, fetching data, generating reports, and storing results in Excel files.

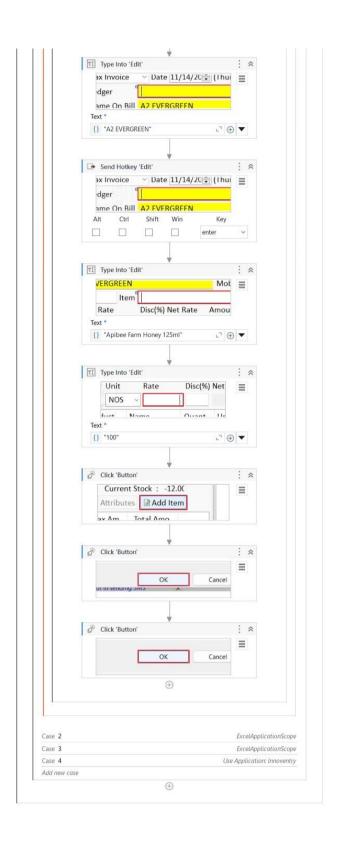
This solution not only saves valuable time but also minimizes human errors, allowing businesses to focus on more strategic tasks. With the ability to scale to other functions within Innoventry Software, the system presents a cost-effective and sustainable way to enhance business operations. The integration of task notifications further ensures transparency and effective communication, making the system both user-friendly and reliable.

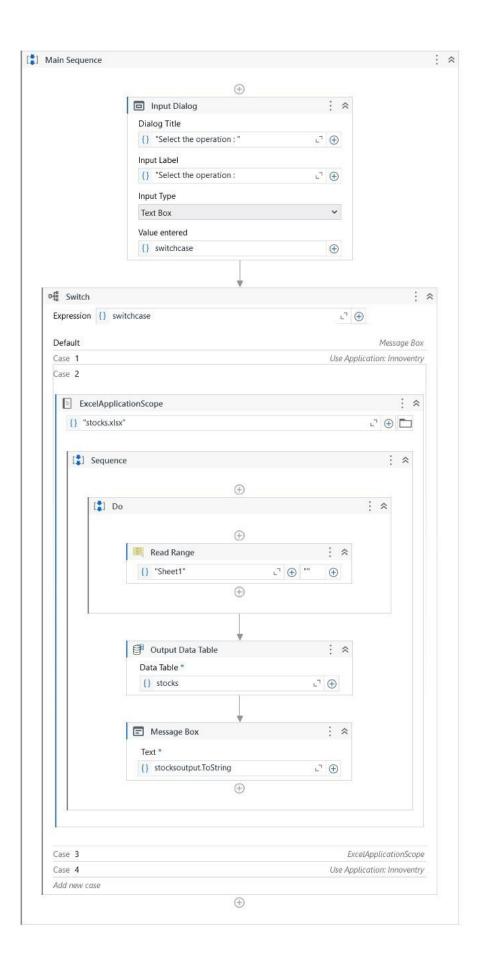
Overall, the RPA automation project for Innoventry Software represents a significant advancement in optimizing business processes, providing a robust solution that improves efficiency, accuracy, and productivity in modern-day business environments.

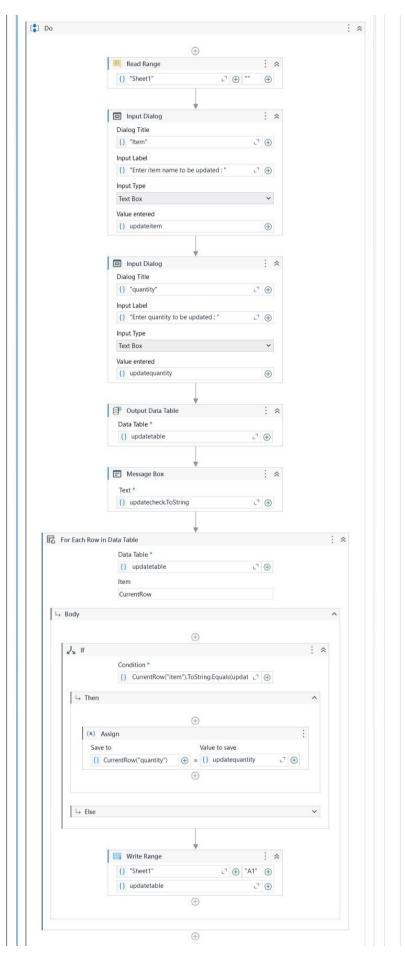
APPENDIX

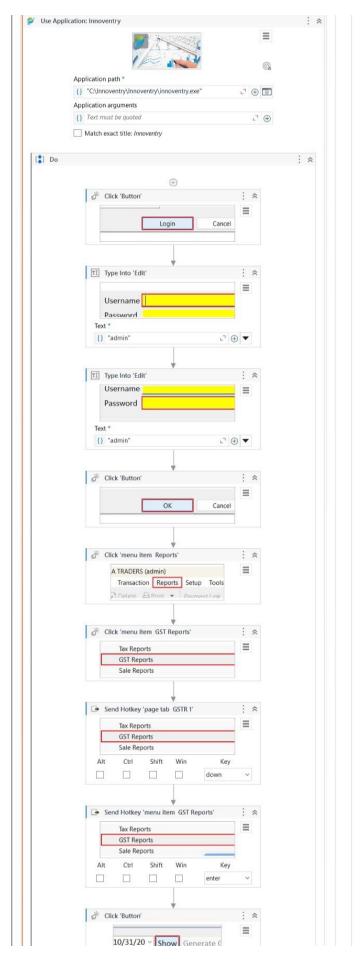
PROCESS WORK FLOW

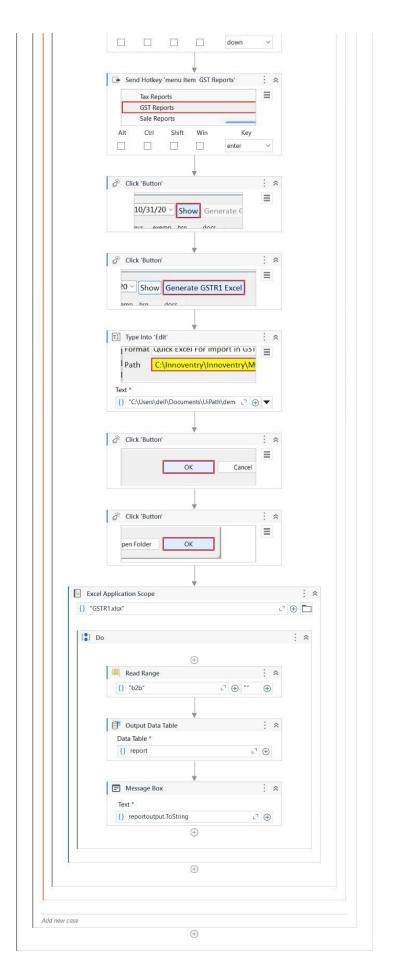












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