Introduction to
Robotic Process Automation

Digital Journal and Tasks Automation

Your Register No. 220701100
Name: Jayajothi Kumar
Guide Name: Mrs. J. Jinu Sophia
Assistant Professor (SG)

RAJALAKSHMI
ENGINEERING COLLEGE

Abstract

- This project integrates Robotic Process Automation (RPA) with a React-based digital journal application to automate repetitive tasks using UiPath. The workflow involves launching the XAMPP server and running the journal app via web recording, extracting journal entry details from PDF files, and adding them to the website through PDF activities and browser automation. Additionally, tasks stored in Excel are processed using Excel automation, string manipulation, and "For Each" activities, and then added to the journal. Finally, the automation prompts the user to decide whether to close all applications, shutting down the XAMPP server and associated processes upon confirmation. This project showcases the efficiency of RPA in automating web application operations and integrating diverse data sources.

Need for the Proposed System

- Manual management of a digital journal involves repetitive tasks such as starting servers, running applications, extracting information from documents, and updating tasks, which can be time-consuming and prone to errors. The proposed system addresses these challenges by leveraging UiPath's Robotic Process Automation (RPA) capabilities to streamline and automate these processes. Automating tasks like reading PDF entries, managing tasks from Excel files, and ensuring seamless server and application operations reduces human effort, improves efficiency, minimizes errors, and ensures consistent performance. This system is especially beneficial for users managing frequent updates or handling data from multiple sources, enhancing productivity and reliability.

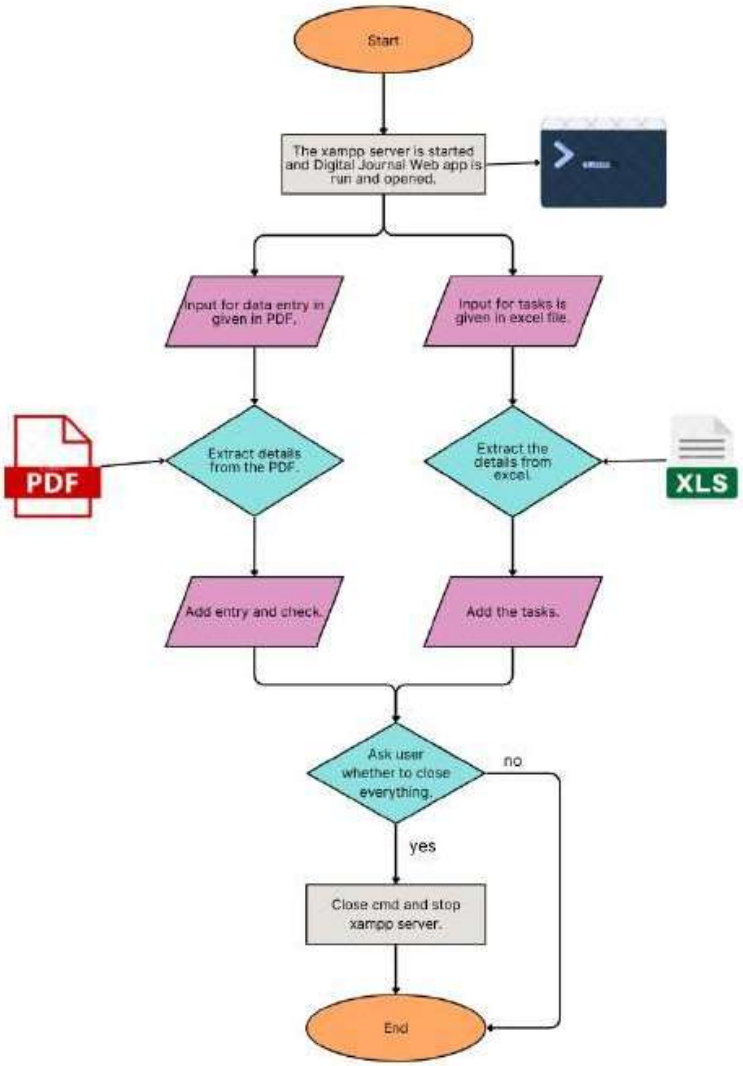
Advantages of the Proposed System

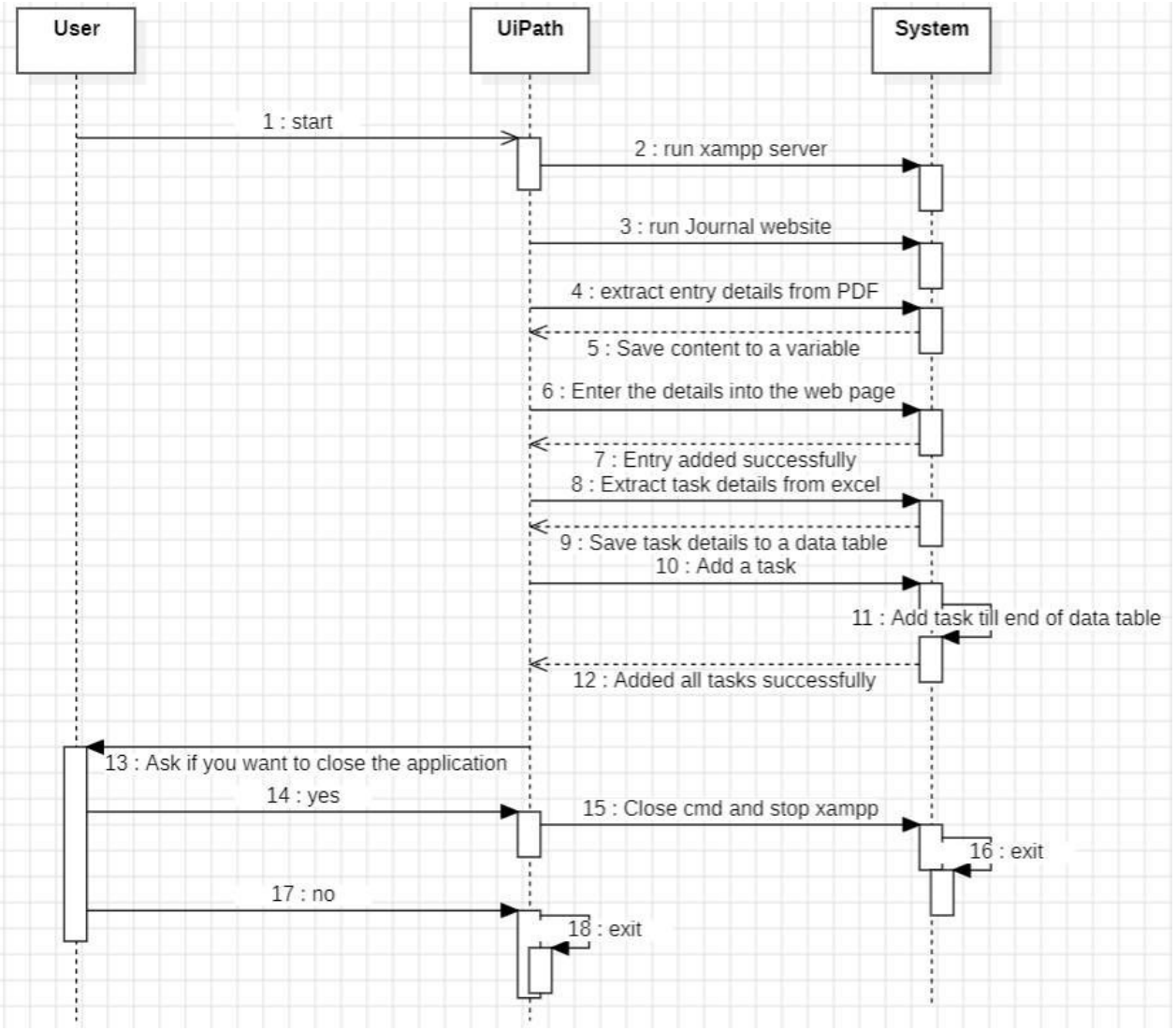
- **Time Efficiency:** Automates repetitive tasks, significantly reducing the time required for manual operations like server setup, data entry, and task management.
- **Error Reduction:** Minimizes human errors during data handling and ensures accurate updates to the digital journal.
- **Seamless Integration:** Combines operations across diverse platforms, such as PDFs, Excel files, and web applications, into a unified, automated workflow.
- **User Interaction:** Offers user prompts for control, allowing flexibility in managing application shutdowns and system operations.
- **Increased Productivity:** Frees up users to focus on higher-value tasks while automation handles routine processes.
- **Scalability:** Can be adapted to incorporate additional features or handle larger datasets without additional manual effort.
- **Consistency:** Ensures consistent performance and reliability across repeated operations.

Main Objective

- The primary objective of this project is to leverage Robotic Process Automation (RPA) using UiPath to automate repetitive and time-consuming tasks associated with managing a React-based digital journal application. This includes automating server setup, extracting and processing data from PDFs and Excel files, updating the journal with entries and tasks, and providing user-controlled system shutdown, thereby enhancing efficiency, accuracy, and productivity while minimizing manual effort.

Architecture





System Requirements

Software Requirements:

- UiPath Studio: For creating and managing automation workflows.
- XAMPP Server: To host the backend of the React digital journal application.
- React.js: Framework for the digital journal front-end application.
- Node.js: For running the React application.
- MySQL: Database for storing journal entries and tasks. .
- Microsoft Excel: For storing and managing tasks.
- Operating System: Windows 10 or later.
- Browser: Google Chrome (recommended for web automation).

Hardware Requirements:

- Processor: Minimum Intel Core i3 or equivalent (i5 or higher recommended).
- RAM: Minimum 8 GB (16 GB recommended for better performance).
- Storage: At least 20 GB of free space for software and data storage.
- Display: Minimum 1280x1024 resolution.
- Internet Connection: For accessing UiPath, downloading dependencies, and testing web automation.

Functional Description

System Initialization:

- Automatically starts the XAMPP server (Apache and MySQL) and launches the React journal app via the command prompt.

Journal Entry Management:

- Extracts journal entry details from PDF files using UiPath's PDF activities.
- Updates the journal by inputting the extracted data through web automation.

Task Management:

- Reads tasks from Excel using UiPath's Excel automation tools.
- Adds tasks (name and due date) to the journal website.

Application Control:

- Prompts the user to decide whether to close applications.
- Stops XAMPP and closes all associated applications if confirmed.

Process Design

Main Process:

- Initialize System: Start XAMPP server and launch the React digital journal app.
- Manage Entries: Extract data from PDFs and add it to the journal.
- Manage Tasks: Extract tasks from Excel and add them to the journal.
- User Interaction: Ask if the user wants to close the apps and stop the XAMPP server if confirmed.

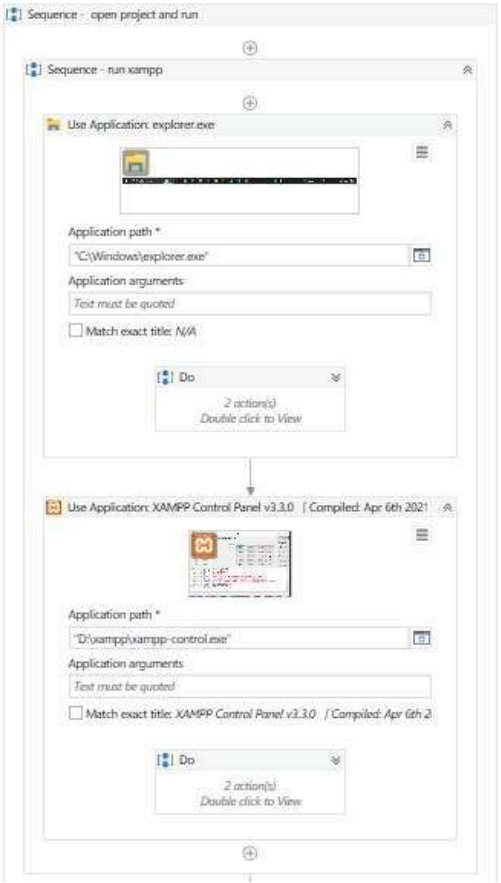
Sub-processes:

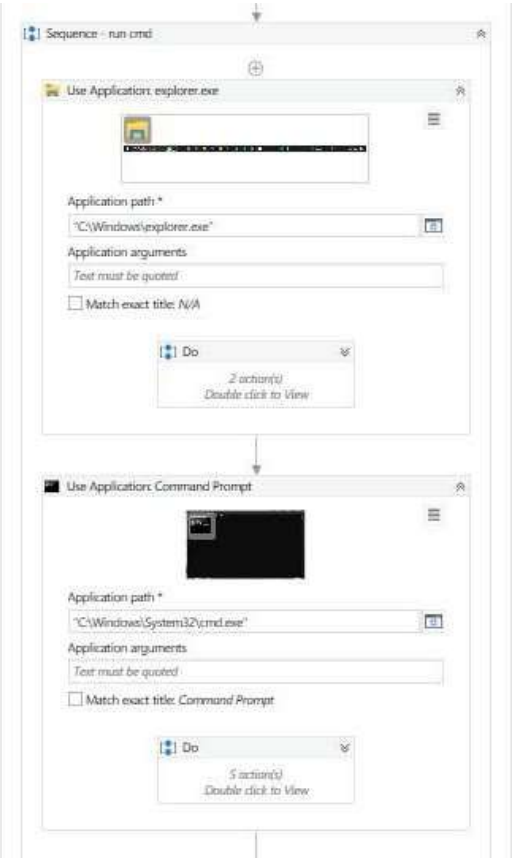
- System Initialization: Open XAMPP, start Apache/MySQL, and run the React app.
- Entry Management: Read PDF entries and input them into the journal website.
- Task Management: Read tasks from Excel and add them to the journal.
- Application Closure: Prompt the user and stop all applications if confirmed.

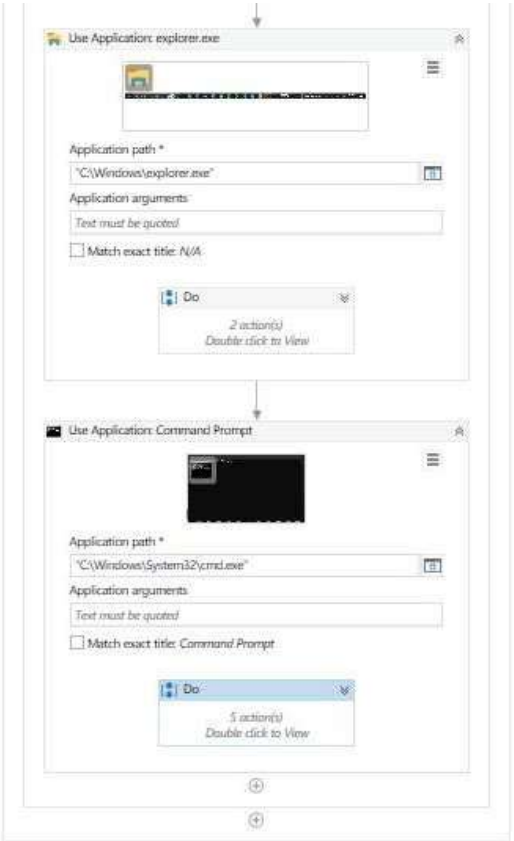
Implementation

Module 1: System Initialization

- Use UiPath to open XAMPP, start Apache/MySQL with Click activities, and launch Command Prompt.
- Navigate to the React project folder and run the app using Type Into commands ('npm start').
- Open the journal website in the browser using Open Browser.



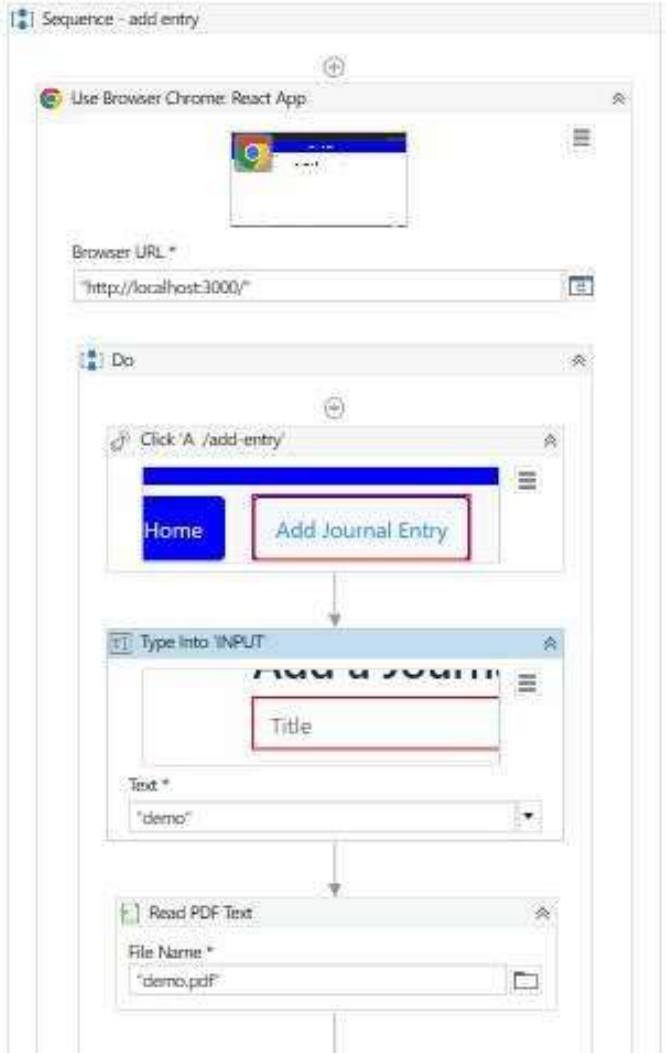


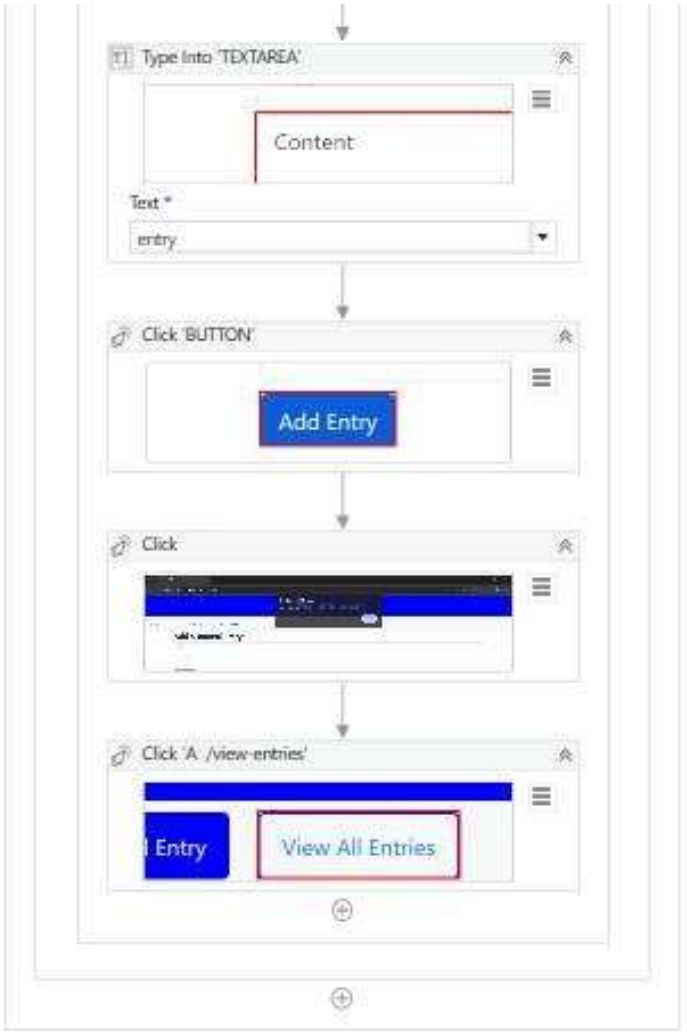


Implementation

Module 2: Journal Entry Management

- Extract text from PDFs using Read PDF Text activity.
- Process data using string manipulation.
- Use web automation (Type Into, Click) to add entries into the journal website.

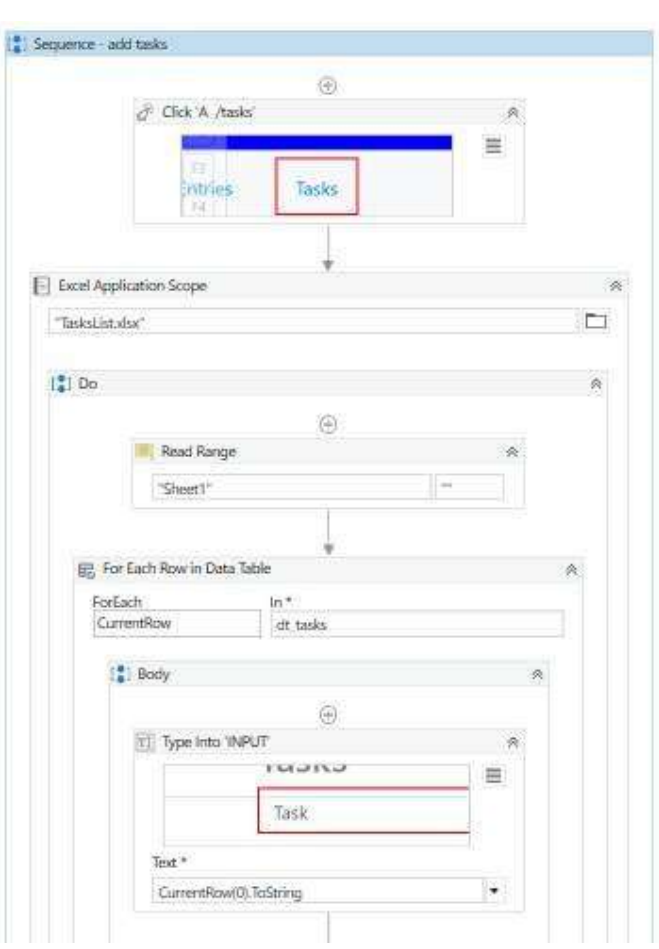


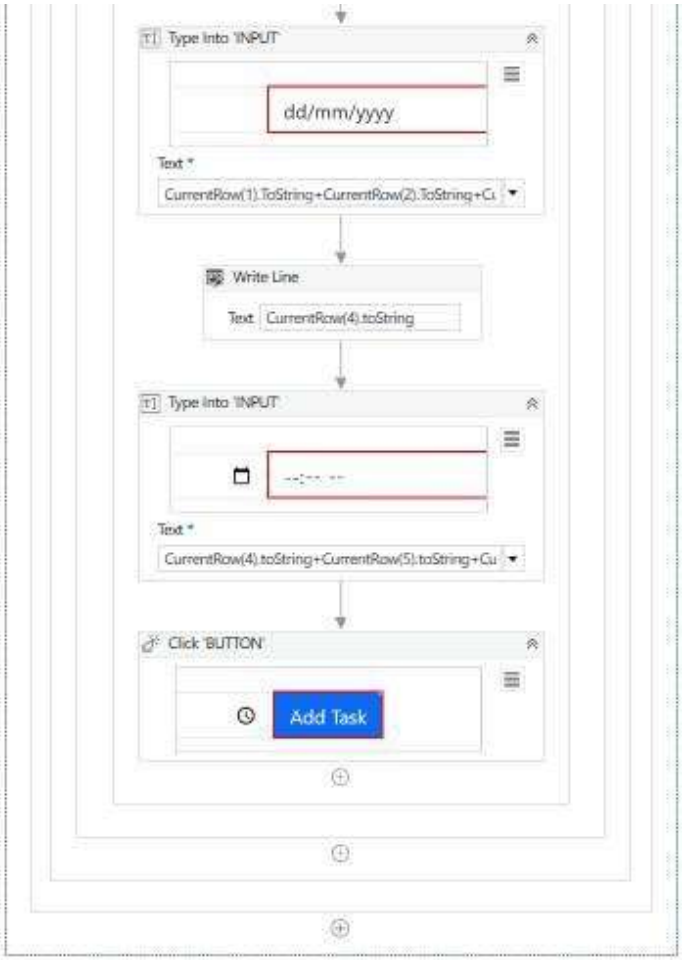


Implementation

Module 3: Task Management

- Open the Excel file using Excel Application Scope and read task details with Read Range.
- Iterate tasks with For Each Row to extract details like name and priority.
- Use Type Into, Select Item, and Click to add tasks to the journal system.



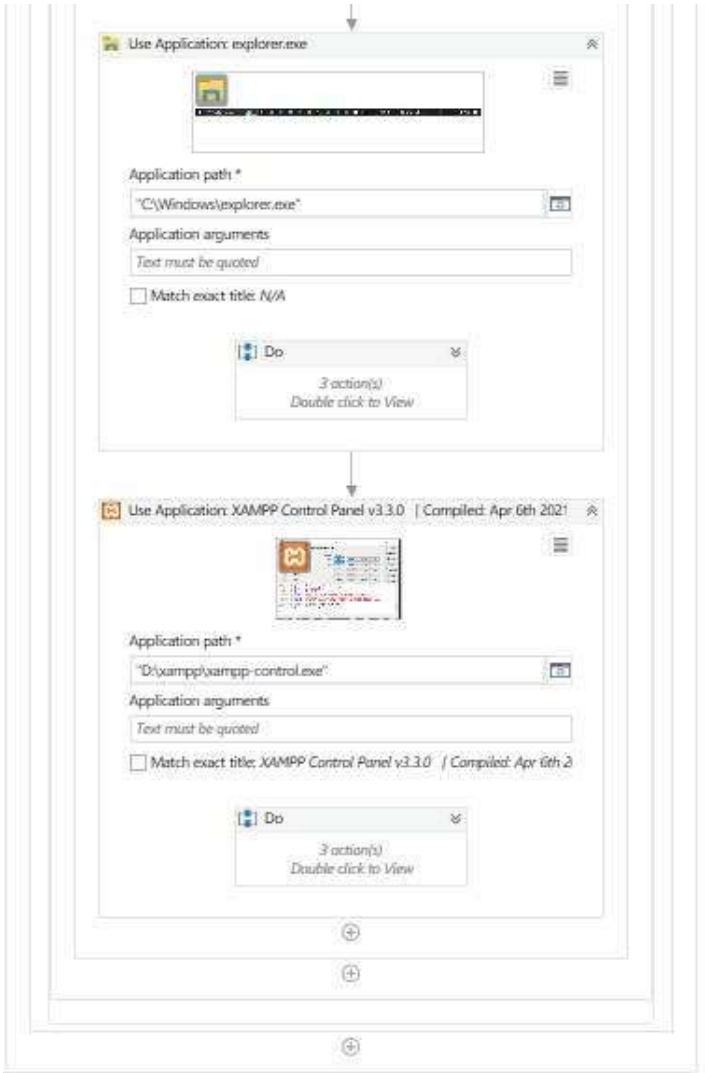


Implementation

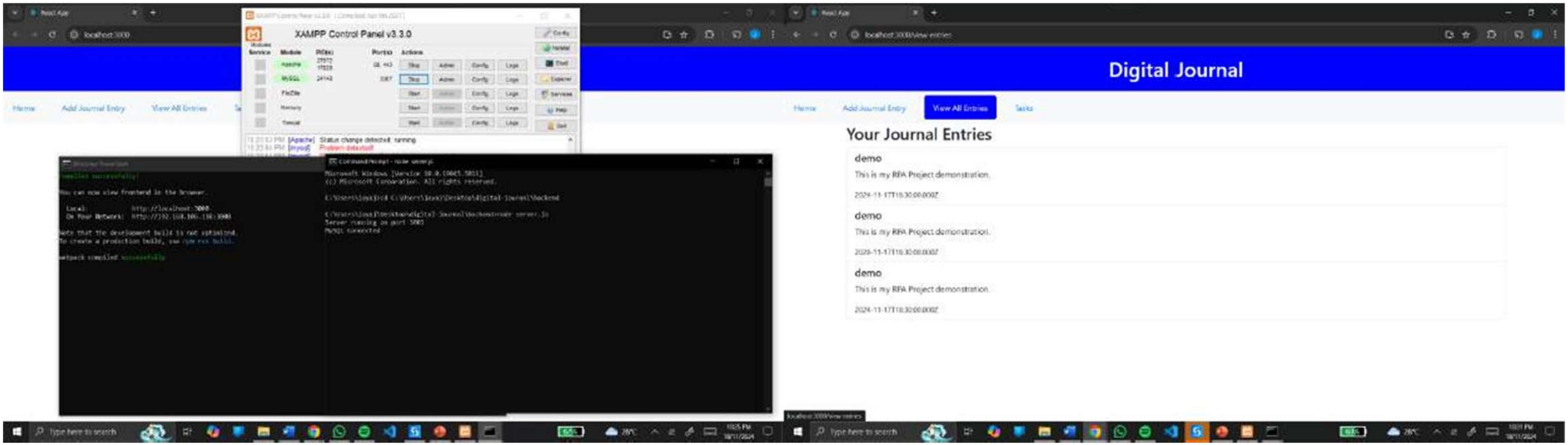
Module 4:

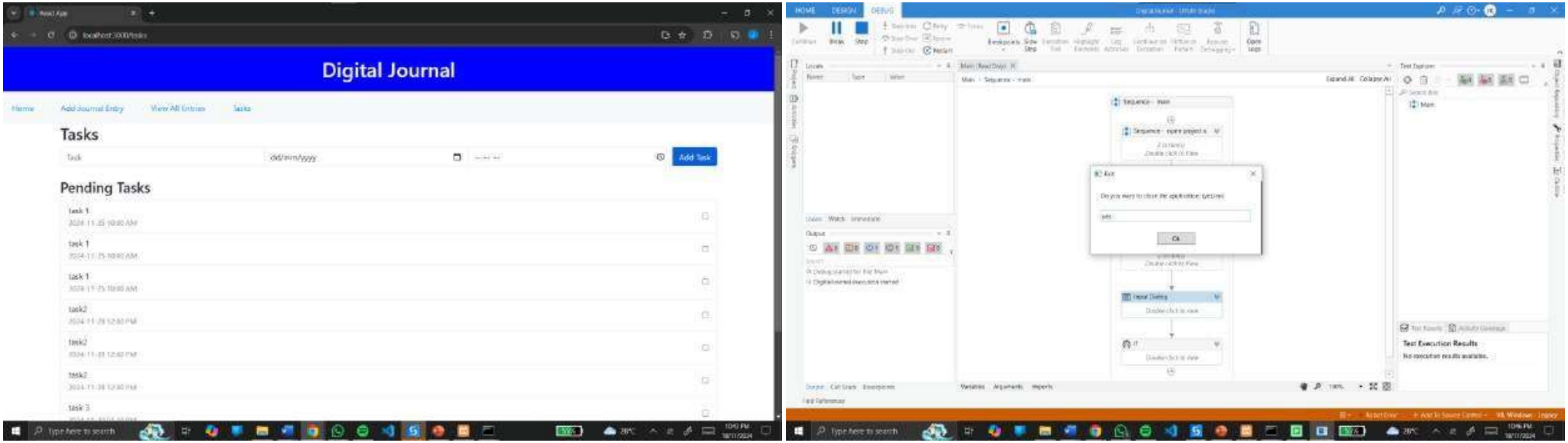
Application Control

- Display a prompt using Input Dialog to confirm closing applications.
- If "Yes," stop Apache/MySQL, close Command Prompt, and exit XAMPP using Kill Process and Close Application.



Testing


XAMPP Control Panel v3.3.0
Digital Journal
Your Journal Entries
demo
This is my RPA Project demonstration.
demo
This is my RPA Project demonstration.
demo
This is my RPA Project demonstration.


Digital Journal
Tasks
Add Task
Pending Tasks

Conclusions

- The proposed system successfully integrates Robotic Process Automation (RPA) with a React-based digital journal application, streamlining repetitive tasks such as server management, data extraction from PDFs and Excel files, and task updates. By automating these processes using UiPath, the system improves efficiency, reduces manual errors, and enhances productivity. Additionally, the user-friendly prompts for managing application shutdown add flexibility and control. Overall, this automation solution simplifies operations, saving time and effort, while ensuring accurate and consistent handling of journal entries and tasks. The system can be easily scaled or modified for future enhancements.

Future Enhancement

- **Multi-User Support:** Allow multiple users to maintain their own journal and tasks with separate logins.
- **Cloud Backup:** Enable saving journal entries and tasks on the cloud for easy access from any device.
- **Task Reminders:** Add a reminder feature to notify users about upcoming tasks and deadlines.

References

- **UiPath Documentation: https://docs.uipath.com**
- **Excel Automation Tutorials, Online Resources.**
- **www.Chatgpt.com**

Queries

Demonstration

Thank You