ERP ATTENDANCE MONITORING AUTOMATION

A PROJECT REPORT

Submitted by

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in partial fulfillment for the course

OAI1903 - INTRODUCTION TO ROBOTIC PROCESS AUTOMATION

for the degree of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

RAJALAKSHMI ENGINEERING COLLEGE

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NOVEMBER 2024

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BONAFIDE CERTIFICATE

Certified that this project report "**ERP ATTENDANCE MONITORING AUTOMATION**" is the bonafide work of "**SANJEEVAN HARI SUDHAKAR (220701251)**" who carried out the project work for the subject OAI1903-Introduction to Robotic Process Automation under my supervision.

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ACKNOWLEDGEMENT

Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavour to put forth this report. Our sincere thanks to our Chairman **Thiru. S.Meganathan, B.E., F.I.E.,** our Vice Chairman **Mr. M.Abhay Shankar, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) Thangam Meganathan, M.A., M.Phil., Ph.D.,** for providing us with the requisite infrastructure and sincere endeavouring in educating us in their premier institution.

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

Sanjeevan Hari Sudhakar (220701251)

ABSTRACT

The ERP Attendance Monitoring Automation is an innovative Robotic Process Automation (RPA) solution designed to streamline and optimize the process of attendance tracking and reporting in educational institutions. Developed using UiPath, this system automates the manual, time-consuming tasks of logging into the ERP portal, extracting attendance data, organizing it into structured Excel reports, and emailing the reports to students. By leveraging the power of automation, the system ensures accuracy, consistency, and efficiency while significantly reducing human effort.

This project addresses common challenges in attendance management, such as errors in manual data handling, delays in communication, and the repetitive nature of the process. It provides an automated, end-to-end solution that enhances the efficiency of administrative workflows and ensures timely dissemination of critical information to students.

By automating these tasks, the system not only saves time but also improves accuracy and reliability, empowering educational institutions to focus on more meaningful academic and administrative goals. The ERP Attendance Monitoring Automation showcases the transformative potential of RPA in education, paving the way for broader adoption of automation technologies in academic environments.

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LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE

ABBREVIATION	ACRONYM
RPA	Robotic Process Automation
ERP	Enterprise Resource Planning

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The **ERP Attendance Monitoring Automation** is a sophisticated **Robotic Process Automation (RPA)** solution specifically designed to streamline the process of attendance tracking and reporting in educational institutions. This system addresses the common challenges associated with traditional manual methods of handling attendance, such as inefficiencies, errors, and significant time consumption. By automating repetitive and rule-based tasks, the system ensures that administrative operations are handled seamlessly, with minimal human intervention.

At its core, the system automates the end-to-end workflow of retrieving attendance data directly from the **college ERP portal**. Traditionally, administrators or educators must log in to the ERP manually, navigate through various sections, and extract attendance records. These records are then organized into individual reports for each student, which are sent via email. However, this manual approach is often prone to human error, inconsistencies in data handling, and significant delays in communication. By leveraging **UiPath's robust automation capabilities**, this project simplifies and accelerates the entire process, ensuring higher accuracy, timeliness, and efficiency.

This system significantly reduces manual effort while ensuring data accuracy and timeliness. It eliminates the errors that often occur with manual data entry and ensures that students receive accurate attendance information, enabling them to track their academic performance effectively. Additionally, by

automating repetitive tasks, administrators can focus on more meaningful activities, such as student engagement and academic planning, thereby improving the overall efficiency of the institution.

In summary, the **ERP Attendance Monitoring Automation** is an innovative and reliable RPA solution designed to address the specific challenges faced by educational institutions. By leveraging UiPath's automation capabilities, it ensures a smooth and efficient process for managing attendance data, generating reports, and communicating with students. This project not only highlights the potential of RPA in streamlining administrative processes but also serves as a blueprint for other automation initiatives in education and beyond.

1.2 OBJECTIVE

The ERP Attendance Monitoring Automation aims to revolutionize the process of attendance tracking and reporting in educational institutions by leveraging the capabilities of Robotic Process Automation (RPA). This system is designed to replace manual methods with a fully automated workflow that enhances efficiency, accuracy, and timeliness. The primary objective is to streamline the process of extracting attendance data, generating reports, and sending them to students via email, thereby reducing human effort and minimizing the risk of errors. Ultimately, the objective is to deliver a robust, user-friendly solution that enhances the experience for both students and administrators.

1.3 EXISTING SYSTEM

In the traditional system, attendance tracking is primarily a manual process that involves logging into the ERP portal, extracting attendance records, and generating individual reports for students. This method is not only time-consuming but also prone to human errors, such as incorrect data entry, missed updates, and miscommunication. Administrators often face challenges in managing large volumes of data, especially when dealing with multiple students across various subjects and classes.

Another limitation of the existing system is the inefficiency in report generation and communication. Administrators or faculty members must manually compile attendance data into reports and send them individually to students via email or other communication channels. This process is labour-intensive and delays the timely dissemination of critical information. Additionally, the lack of automation means that any discrepancies or inaccuracies in the data may go unnoticed until they cause significant issues.

The manual nature of the existing system also impacts scalability. As student numbers grow, the workload for administrators increases exponentially, leading to potential bottlenecks in the attendance management process. Furthermore, the reliance on human intervention makes it difficult to maintain consistent accuracy and reliability. These challenges underscore the need for an automated solution that can address the limitations of the existing system and deliver significant improvements in efficiency and accuracy.

1.4 PROPOSED SYSTEM

The Proposed ERP Attendance Monitoring Automation utilizes Robotic Process Automation (RPA) to automate the attendance management process, addressing inefficiencies in the existing system. Using UiPath, the bot automates secure login to the ERP portal, extracts attendance data (subject names, classes attended, and attendance percentages), and generates a detailed Excel report. The report highlights subjects with attendance below thresholds like 75% or 80%.

Once the report is created, the system automatically emails it to students with a personalized subject line, message body, and the report attached. This ensures timely and accurate communication of attendance information. Robust error-handling mechanisms are included to manage any interruptions, such as connectivity issues.

The proposed system is efficient, accurate, and scalable, reducing manual effort while managing large volumes of data effortlessly. By automating repetitive tasks, it enables administrators to focus on more critical academic

responsibilities, delivering significant improvements in productivity and reliability.

CHAPTER 2

SYSTEM DESIGN

2.1 SYSTEM FLOW DIAGRAM

A flowchart is a type of diagram that represents an algorithm, workflow or process. The flowchart shows the steps as boxes of various kinds, and their order by connecting the boxes with arrows. This diagrammatic representation illustrates a solution model to a given problem. The system flow diagram for this project is in Fig. 2.1.

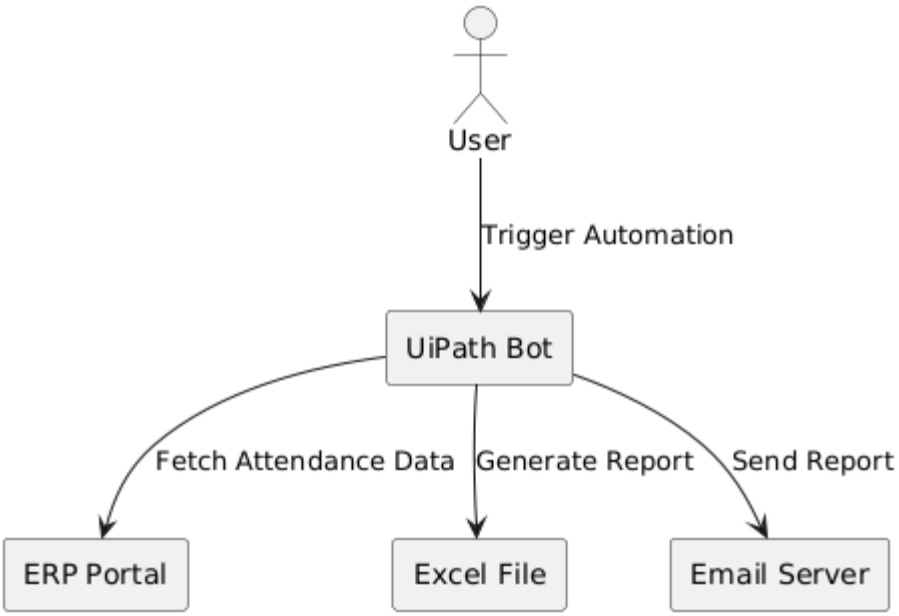


Fig. 2.1 System Flow Diagram

2.2 ARCHITECTURE DIAGRAM

An architecture diagram is a graphical representation of a set of concepts that are part of an architecture, including their principles, elements and components. The architecture diagram for this project is in Fig. 2.2.

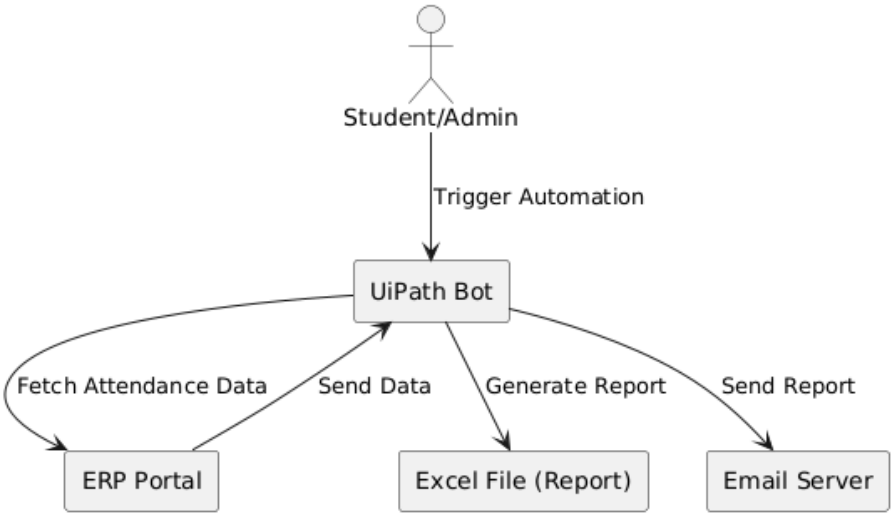


Fig. 2.2 Architecture Diagram

2.3 SEQUENCE DIAGRAM

A sequence diagram is a type of interaction diagram because it describe and s how in what order a group of objects works together. The sequence diagram for this project is in Fig. 2.3.

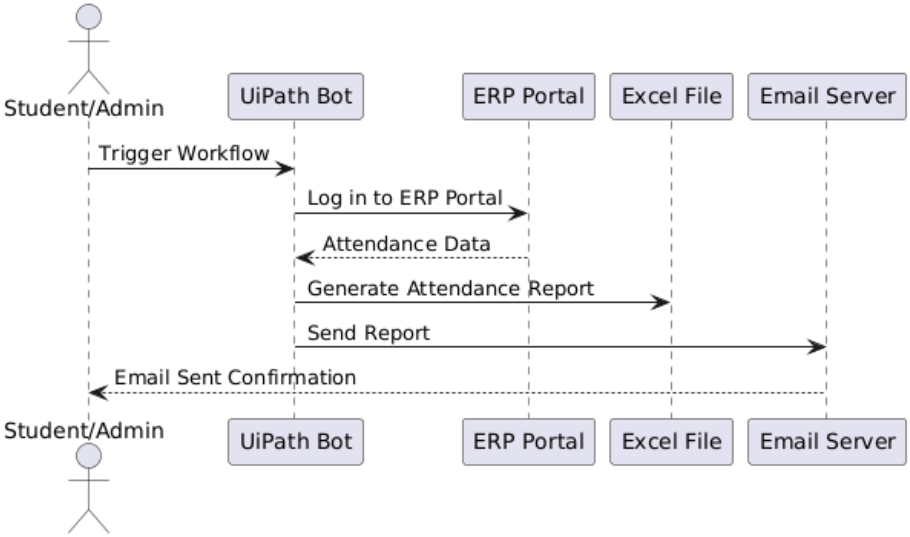


Fig. 2.3 Sequence Diagram

CHAPTER 3

PROJECT DESCRIPTION

The **ERP Attendance Monitoring Automation** is a comprehensive **Robotic Process Automation (RPA)** project developed using UiPath to streamline the attendance tracking and reporting process in educational institutions. This intelligent automation eliminates the inefficiencies of manual workflows, providing administrators with an efficient tool to manage attendance data and ensure timely communication with students. By automating repetitive tasks such as data retrieval, report generation, and email distribution, this system improves accuracy, reduces human effort, and enhances overall administrative productivity.

3.1 MODULES

3.1.1 INPUT HANDLING AND INITIALIZATION

3.1.1.1 Folder Selection

The bot receives user input to determine the parent folder path where the generated reports will be stored.

3.1.1.2 Subfolder Selection

Lists all subfolders within the specified parent folder.

Allows the user to select the target subfolder corresponding to a specific class or batch.

3.1.1.3 Excel Report Initialization

Dynamically creates an Excel report named "Attendance Report" in the selected subfolder.

Prepares the report with predefined headers such as Subject, Classes Attended, Total Classes, and Attendance Percentage.

3.1.2 DATA EXTRACTION AND ANALYSIS

3.1.2.1 Attendance Data Retrieval

Logs into the college ERP portal using secure credentials.

Navigates to the attendance section and extracts data such as subject names, attended classes, and attendance percentages.

3.1.2.2 Threshold Analysis

Iterates through the extracted data to identify subjects with attendance below specific thresholds (e.g., below 75% and 80%).

Flags subjects that require attention and appends them to respective lists for detailed reporting.

3.1.3 RESULT MANAGEMENT

3.1.3.1 Result Storage

Updates the dynamically created Excel report with attendance data for each subject.

Adds separate sections to the report highlighting subjects below the 75% and 80% thresholds.

3.1.3.2 Real-Time Updates

Provides real-time updates to the user during the automation process, including progress indicators for data extraction, report generation, and email distribution.

3.1.4 COMPLETION AND REPORTING

3.1.4.1 Email Distribution

Automatically sends the generated Excel report to each student via email.

Customizes the email body with a personalized message and subject line, ensuring clear communication.

3.1.4.2 Completion Message

Concludes the automation process with a message indicating the successful generation and distribution of attendance reports.

CHAPTER 4

OUTPUT SCREENSHOTS

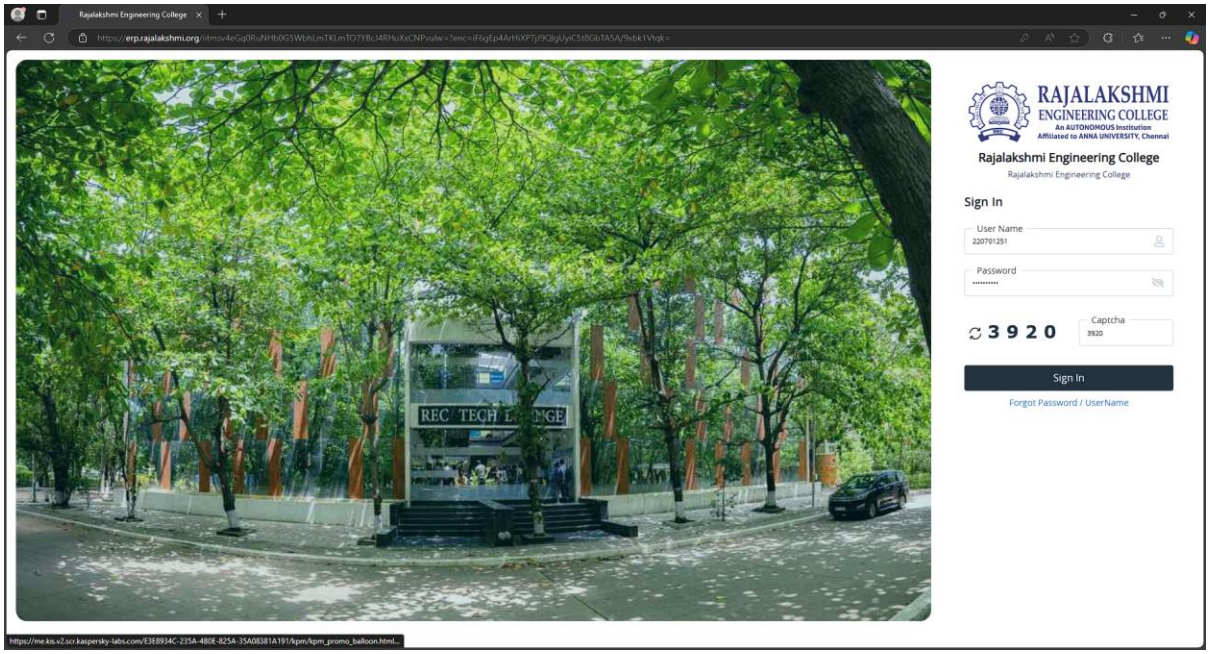


Fig. 4.1 ERP Portal Credentials Entry

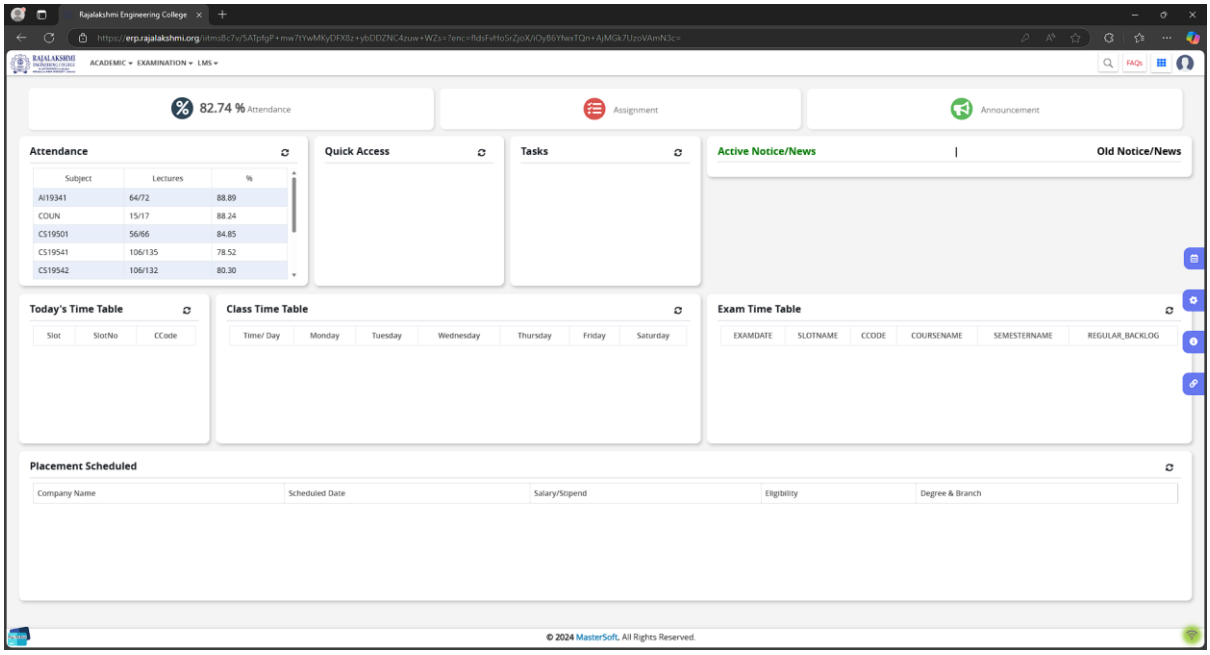


Fig. 4.2 ERP Portal Attendance Page

	A	B	C	D
1	Subject	Lectures	%	
2	AI19341	64/72	88.89	
3	COUN	15/17	88.24	
4	CS19501	56/66	84.85	
5	CS19541	106/135	78.52	
6	CS19542	106/132	80.3	
7	LIB	10/14	71.43	
8	NPTEL	17/17	100	
9	OAI1903	48/62	77.42	
10	VAP	30/34	88.24	

Fig. 4.3 Extracted Data in Excel Sheet

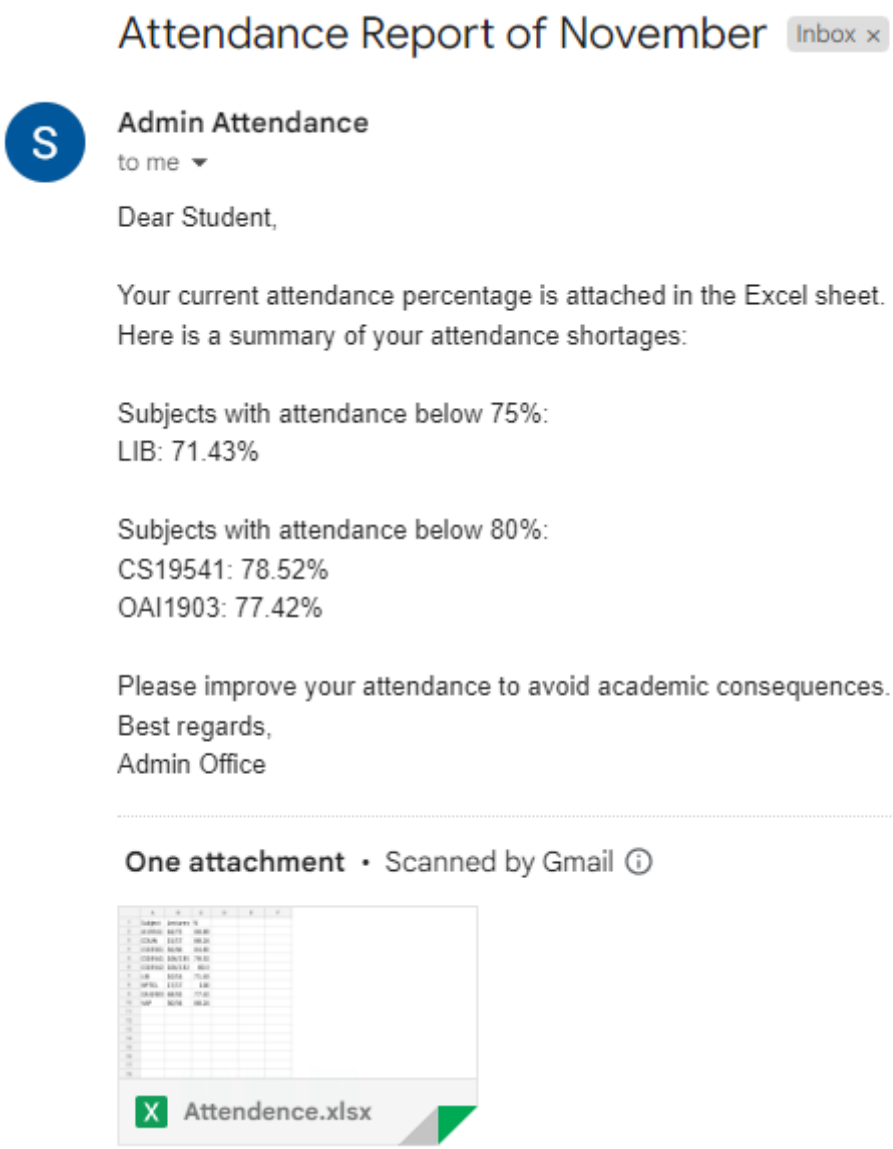


Fig. 4.4 Report E-Mail along with Attachment

CHAPTER 5

CONCLUSION

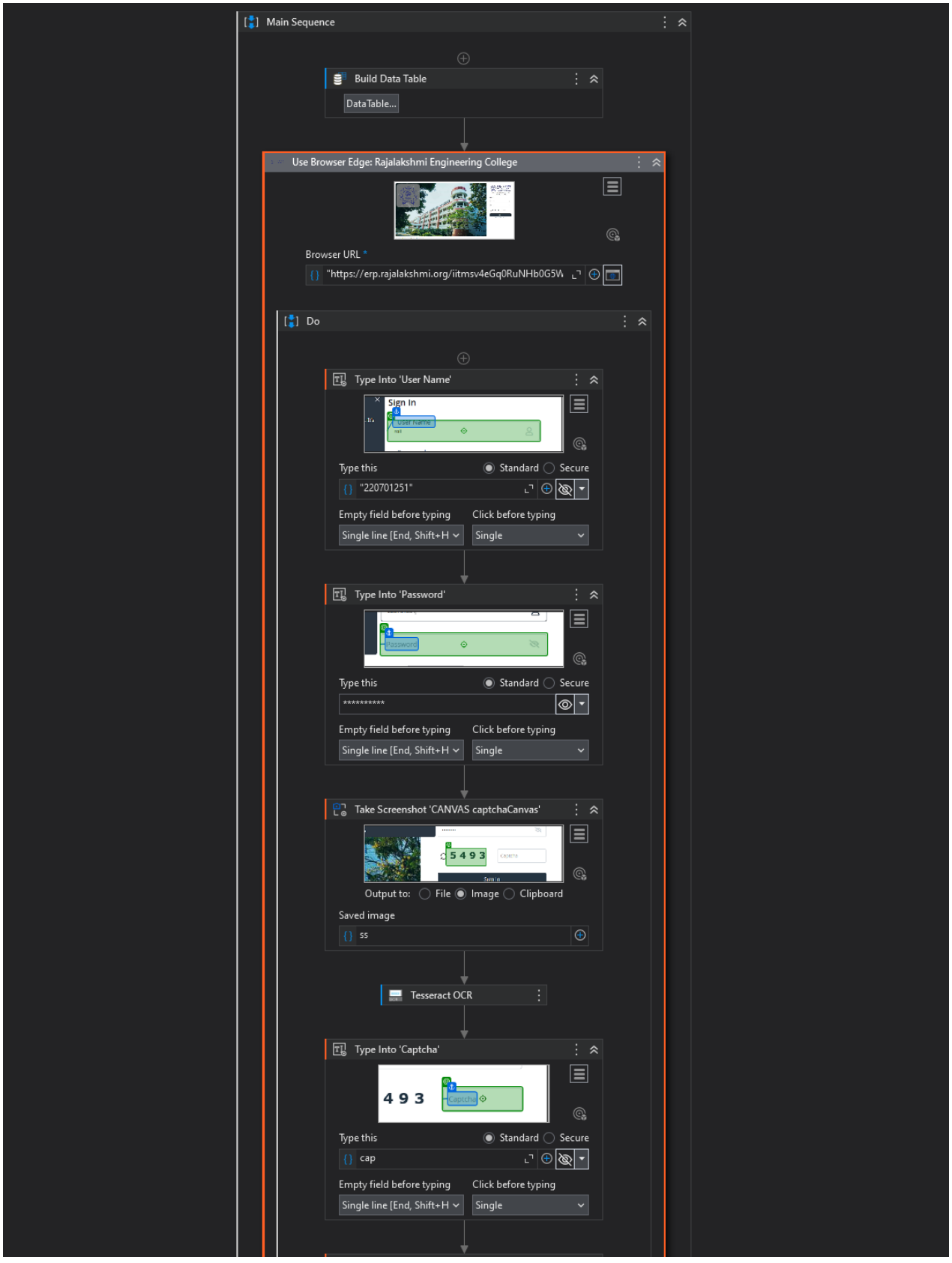
The **ERP Attendance Monitoring Automation** showcases the transformative potential of **Robotic Process Automation (RPA)** in the realm of education. By automating the tedious and error-prone process of attendance tracking, report generation, and email distribution, the system significantly enhances efficiency, accuracy, and productivity for administrators. Students benefit from timely and accurate attendance reports, which help them monitor their performance and take necessary actions in case of attendance discrepancies.

This system streamlines administrative workflows, reducing manual intervention and human errors. It ensures that attendance data is retrieved seamlessly from the ERP portal, formatted accurately into Excel reports, and communicated to students without delay. The integration of advanced features, such as threshold analysis and automated email distribution, further enhances the system's value and usability. The system is highly scalable, adaptable to various institutional requirements, and capable of handling increasing student populations effortlessly. By implementing this solution, educational institutions can improve operational efficiency, reduce administrative burdens, and provide students with timely feedback on their attendance.

In conclusion, the **ERP Attendance Monitoring Automation** is a valuable tool for modernizing attendance management in educational institutions, making it an essential solution for schools and colleges aiming to optimize their administrative processes and improve communication with students.

APPENDIX

APPENDIX 1: PROCESS WORKFLOW



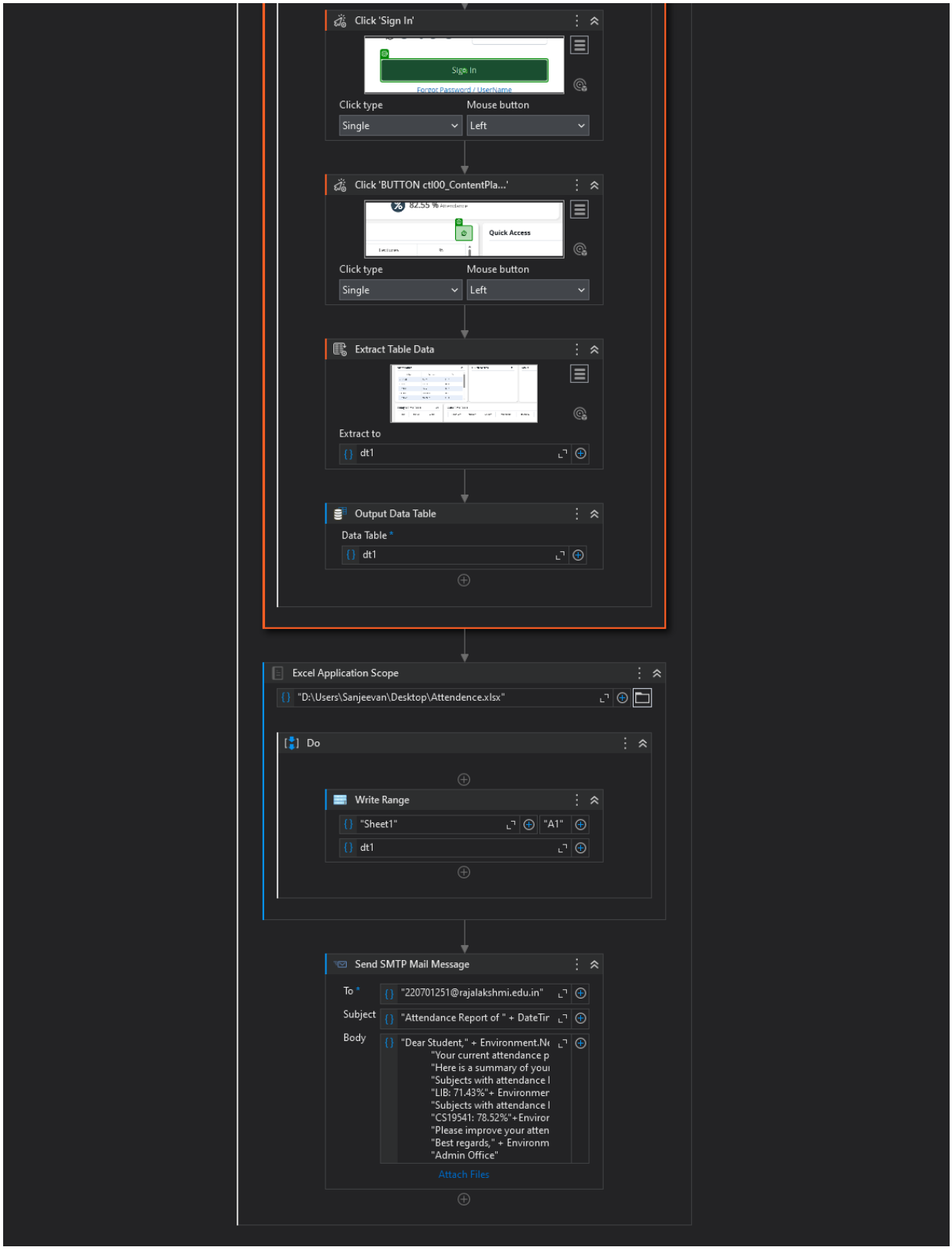
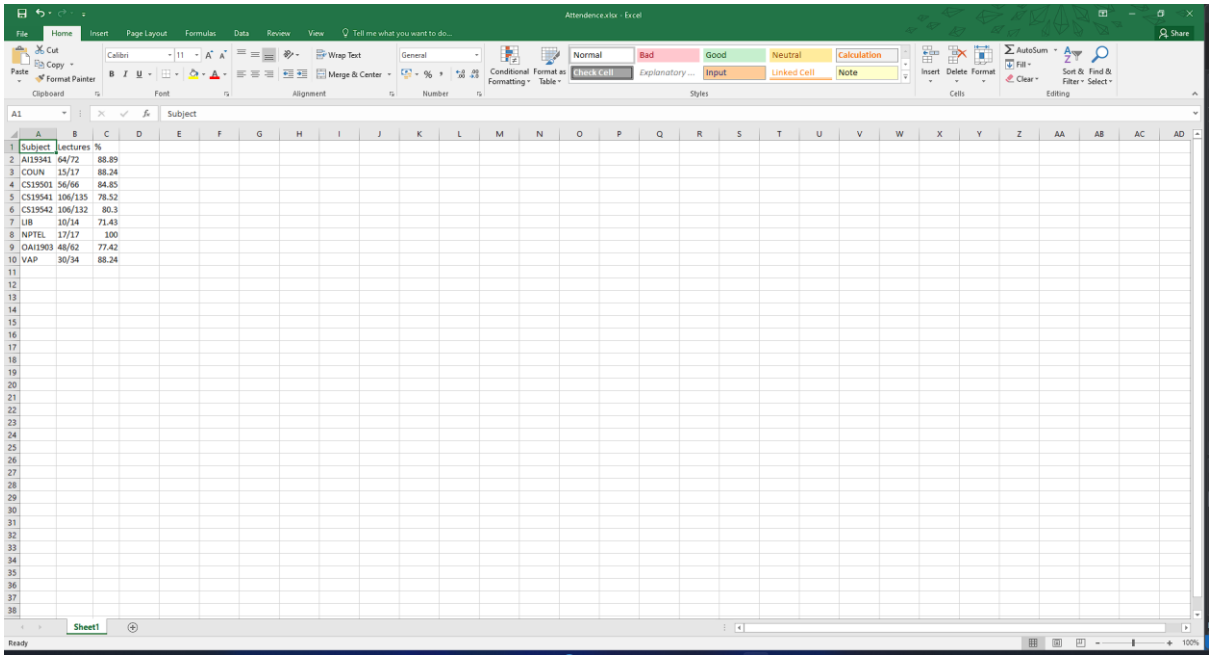


Fig. A.1 Project Workflow

APPENDIX 2: EXCEL REPORT



Subject	Lectures	%
AI19341	64/72	88.89
COUN	15/17	88.24
CS19501	56/66	84.85
CS19541	106/135	78.52
CS19542	106/132	80.3
UI8	10/14	71.43
NPTEL	17/17	100
OAI1903	48/62	77.42
VAP	30/34	88.24

Fig. A.2 Excel Report

APPENDIX 3: LOG FILE

```
[Debug] Execution started for file: Main
[Info] ERP Attendence Checker execution started
[Debug] Audit: Using Web App. Browser: Edge URL:
https://erp.rajalakshmi.org/iitmsv4eGq0RuNHb0G5WbhLmTKLmTO7
YBcJ4RHuXxCNPvuIw=?enc=iF6gEp4ArHiXP7jJ9QlgUyiC5t8GbTA5
A/9xbk1Vtqk=
[Debug] Audit: Extract Data. From: <html app='msedge.exe'
title='Rajalakshmi Engineering College' />
[Info] ERP Attendence Checker execution ended in: 00:00:21
```

Fig. A.3 Log File

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