Introduction to
Robotic Process Automation

AUTOMATED STUDENT COURSE REGISTRATION AND DOCUMENTATION BOT

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Abstract

The Student PDF Generator Bot is a project that creates personalized PDF files for students using either manual input or data from an excel file. It collects student details, fills a Word template with the information, and converts it into a PDF. These PDFs are then organized and sent to the students' email addresses. The project uses UiPath to handle tasks like taking input, reading Excel files, editing Word documents, and sending emails, making the process fast and efficient.

Need for the Proposed System

1. **Automation of Tasks**: Manual creation and distribution of student documents is slow and inefficient. The system automates these tasks to save time and effort.
2. **Ease of Distribution**: Automates the process of sending documents via email, reducing the need for manual follow-ups.
3. **Error Reduction**: Manual data entry can lead to errors, while automation ensures accuracy in document generation.
4. **Improved Productivity**: Frees up staff time for more critical tasks by eliminating repetitive work.
5. **Cost Efficiency**: Saves resources by reducing paper usage and minimizing manual work.

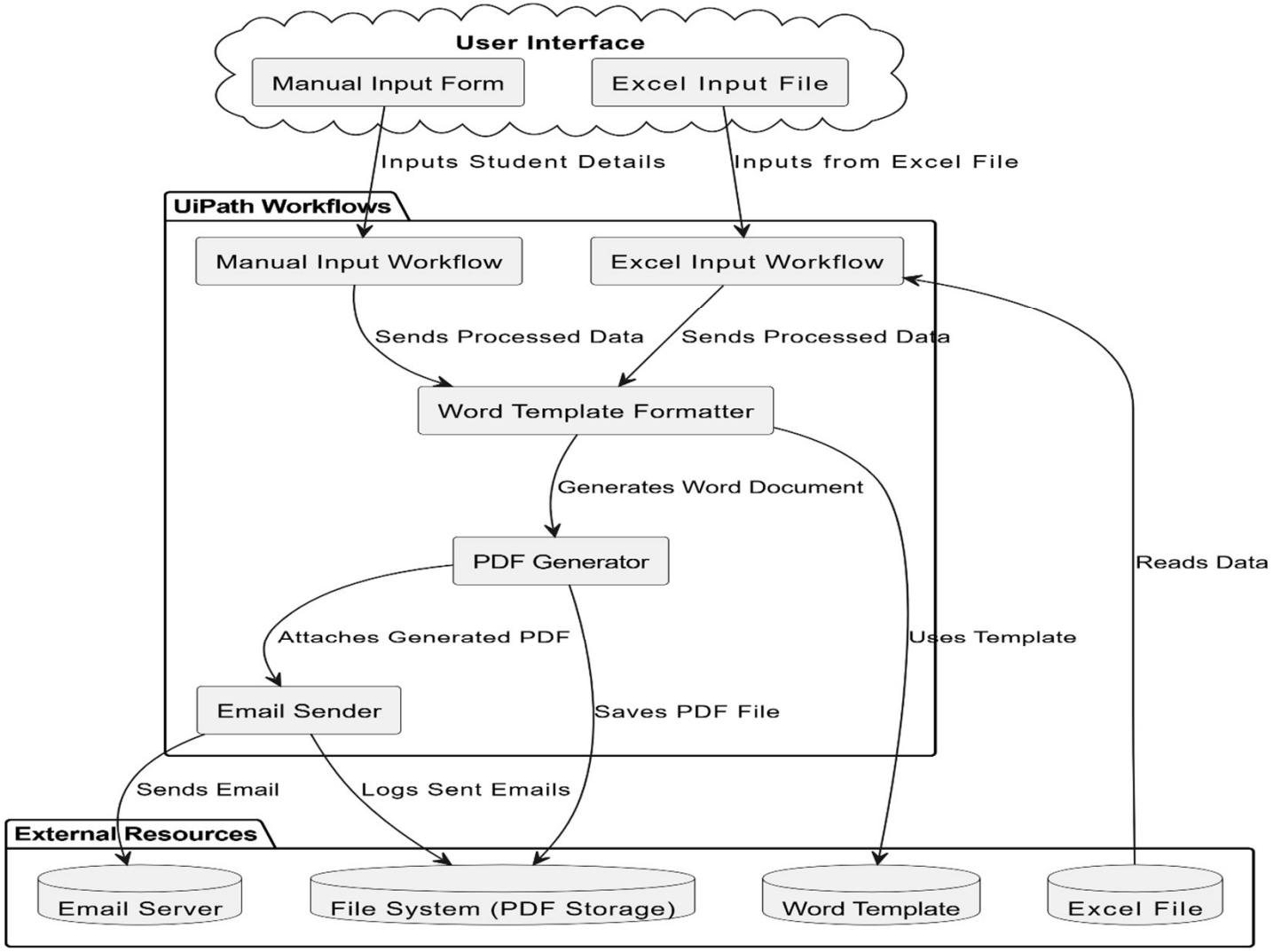
Advantages of the Proposed System

- 1. **Time-Saving**: Automates tasks like document creation and email sending, reducing the time spent on manual work.
- 2. **Efficiency**: Handles large volumes of student data quickly and consistently.
- 3. **Consistency**: Produces documents in a uniform format, maintaining a professional standard.
- 4. **Cost-Efficient**: Reduces dependency on paper-based processes and manual labor, saving resources.

Main Objective

The **main objective** of this project is to automate the process of generating and distributing personalized student documents efficiently and accurately. By using input from manual entry or Excel files, the system creates professional PDF documents, organizes them systematically, and sends them directly to students' email addresses. This reduces manual effort, ensures consistency, minimizes errors, and enhances productivity in managing student records and communication.

Architecture



System Requirements

- Software:
  - UiPath Studio (Version 24.10.5 or above)
  - Microsoft Office: Word, Excel
  - PDF Reader
  - SMTP Configuration
  - Operating System : Windows 10 or above
- Hardware:
  - Processor: Intel i3 or above
  - RAM: 4 GB minimum
  - Internet Connection

Functional Description

- **Module 1: Manual Input**

This module allows users to manually enter student details through input dialogs in UiPath. The collected information is used to populate a predefined Word template, which is then converted into a personalized PDF file. The generated PDF is saved in a specified folder for further use or distribution.

- **Module 2: Excel Input**

This module processes student details from an Excel file. Each row of the file is read and used to dynamically fill the Word template. A personalized PDF is generated for each student and saved in an organized folder structure, ready for distribution.

Table Design

- ERD

Process Design

- Main Process

1. **Input Collection**: Gather student information (either from manual input or an Excel file).
2. **Data Validation**: Make sure the input data is correct and complete.
3. **PDF Generation**: Create the PDF document with the student's details.
4. **Email Creation**: Write an email with the PDF attached.
5. **Email Sending**: Send the email to the student with the attached PDF.

Process Design

- Sub Process

1.Input Collection:

Manual Input: User enters student details (e.g., name, email).

Excel Input: User uploads an Excel file, and the system extracts student data.

2.Data Validation:

Check for Empty Fields: Ensure that required fields are filled (e.g., name, email).

3.PDF Generation:

Create Template: Choose or design a template for the student's details.

Fill Data: Populate the template with student information.

Generate PDF: Create the final PDF.

Process Design

4.Email Creation:

Compose Email: Write the subject and message.

Attach PDF: Attach the generated PDF to the email.

5.Email Sending:

Send Email: Use an email system to send the composed email with the attached PDF to the student.

Implementation

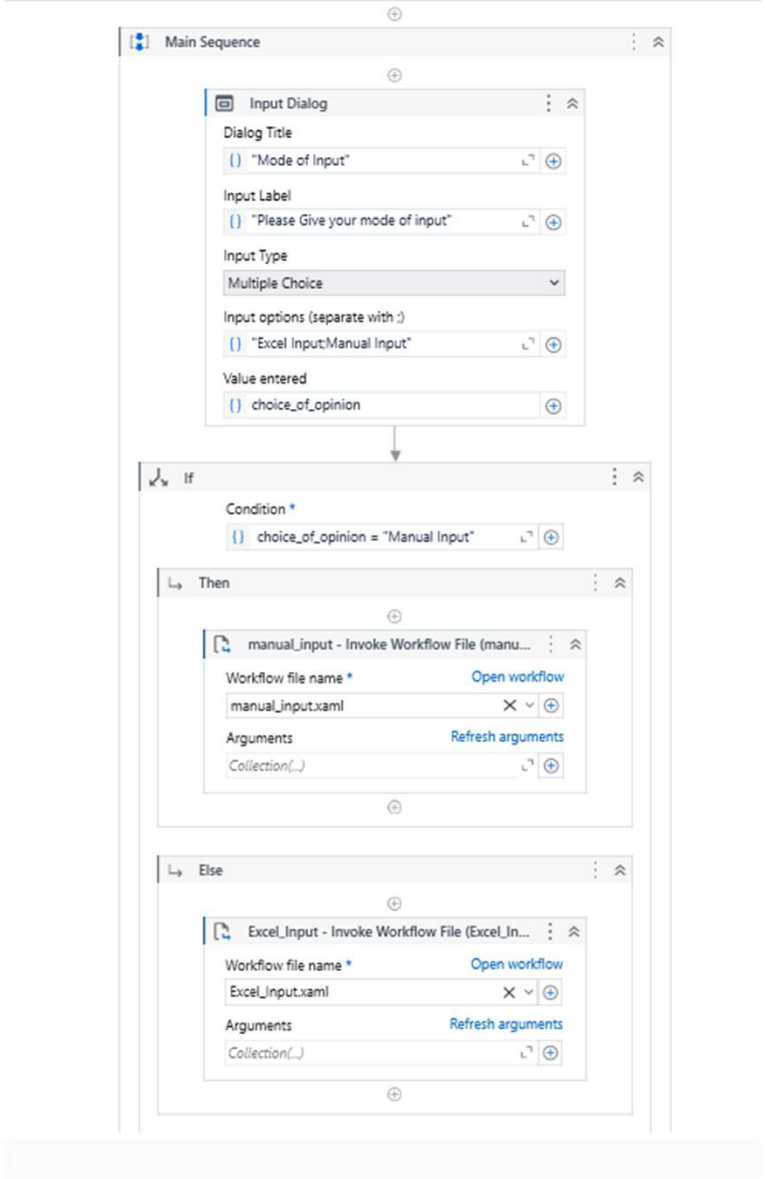
- Implementation of Module 1

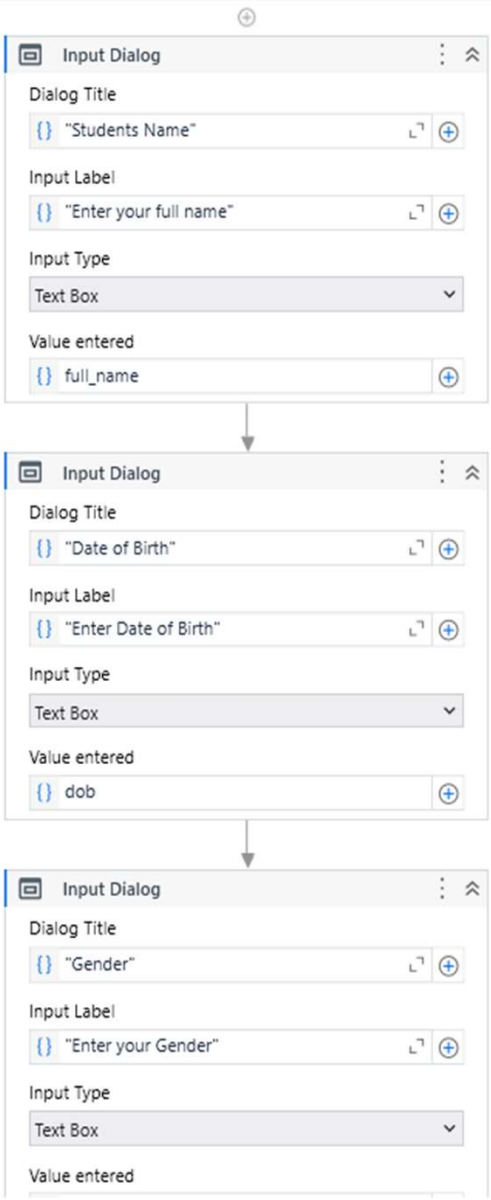
Module 1 focuses on gathering student details, which can be done by manual input.

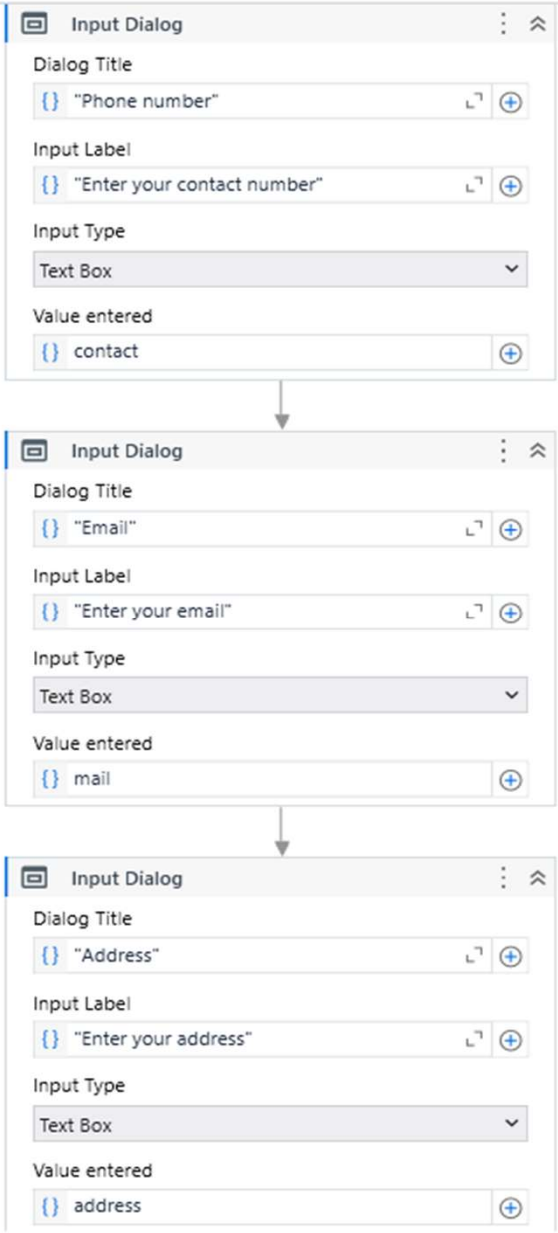
In this part of the module, the system allows the user to manually enter details of the student, such as:

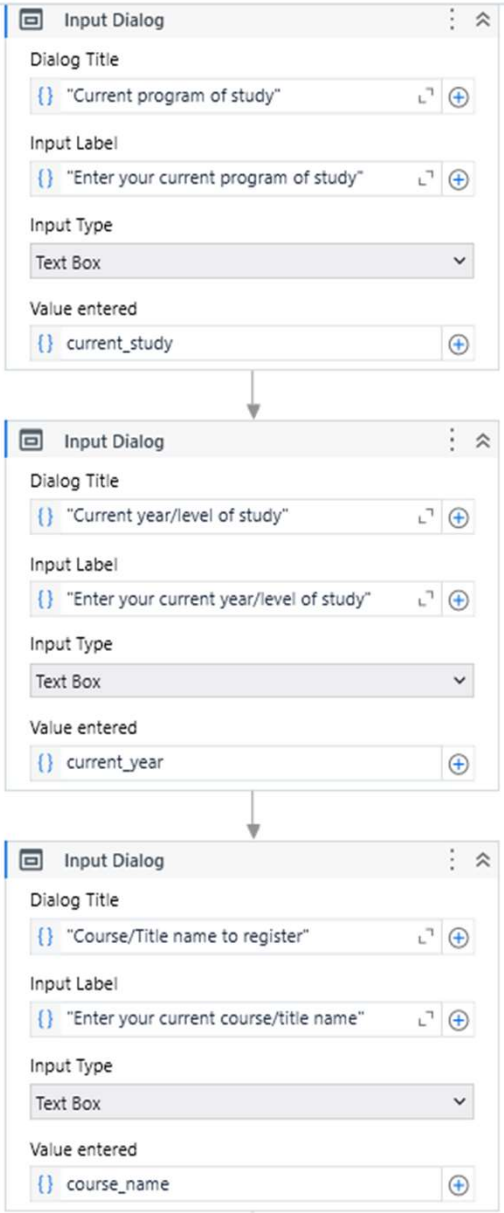
- Full Name
- DOB
- Gender
- Email ID
- Phone Number
- Other personal details

Implementation Screenshots




Input Dialog
Dialog Title
"Students Name"
Input Label
"Enter your full name"
Input Type
Text Box
Value entered
full_name
Input Dialog
Dialog Title
"Date of Birth"
Input Label
"Enter Date of Birth"
Input Type
Text Box
Value entered
dob
Input Dialog
Dialog Title
"Gender"
Input Label
"Enter your Gender"
Input Type
Text Box
Value entered


Input Dialog
Dialog Title
"Phone number"
Input Label
"Enter your contact number"
Input Type
Text Box
Value entered
contact
Input Dialog
Dialog Title
"Email"
Input Label
"Enter your email"
Input Type
Text Box
Value entered
mail
Input Dialog
Dialog Title
"Address"
Input Label
"Enter your address"
Input Type
Text Box
Value entered
address


Input Dialog
Dialog Title
"Current program of study"
Input Label
"Enter your current program of study"
Input Type
Text Box
Value entered
current_study
Input Dialog
Dialog Title
"Current year/level of study"
Input Label
"Enter your current year/level of study"
Input Type
Text Box
Value entered
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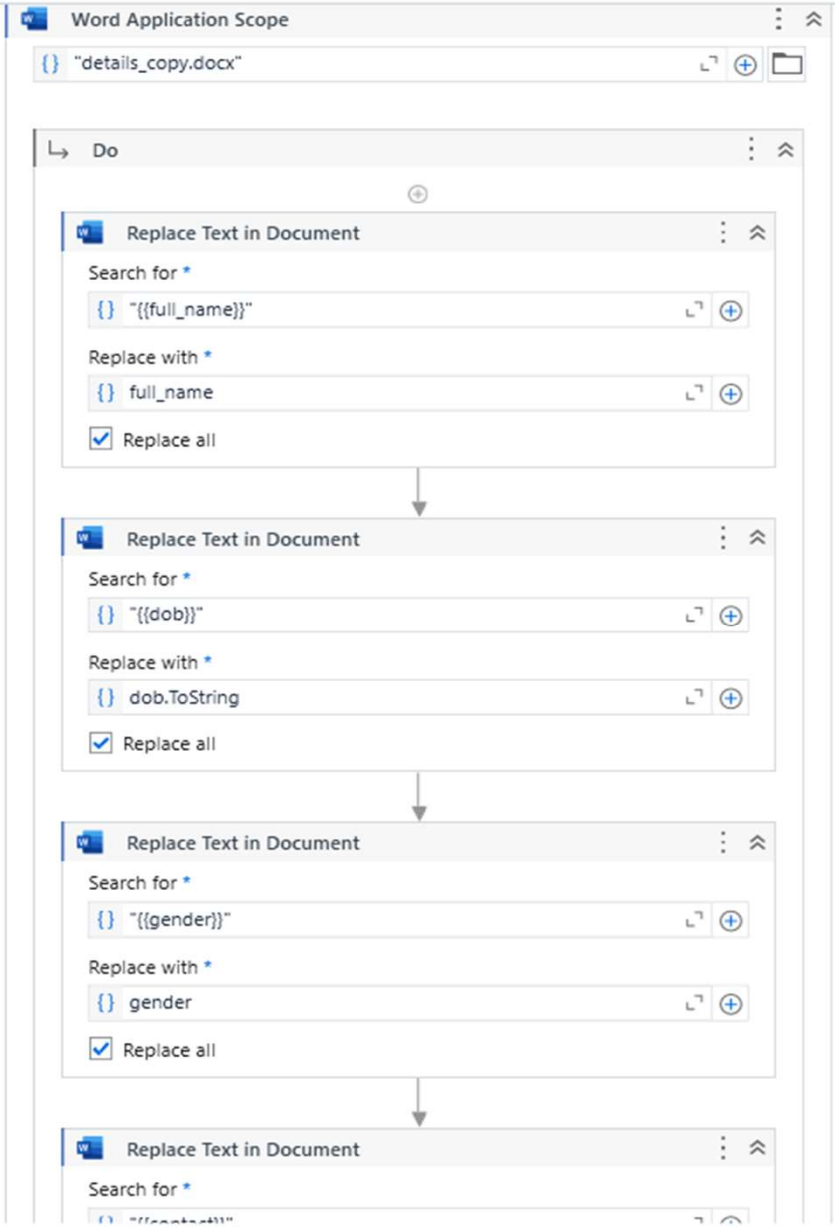
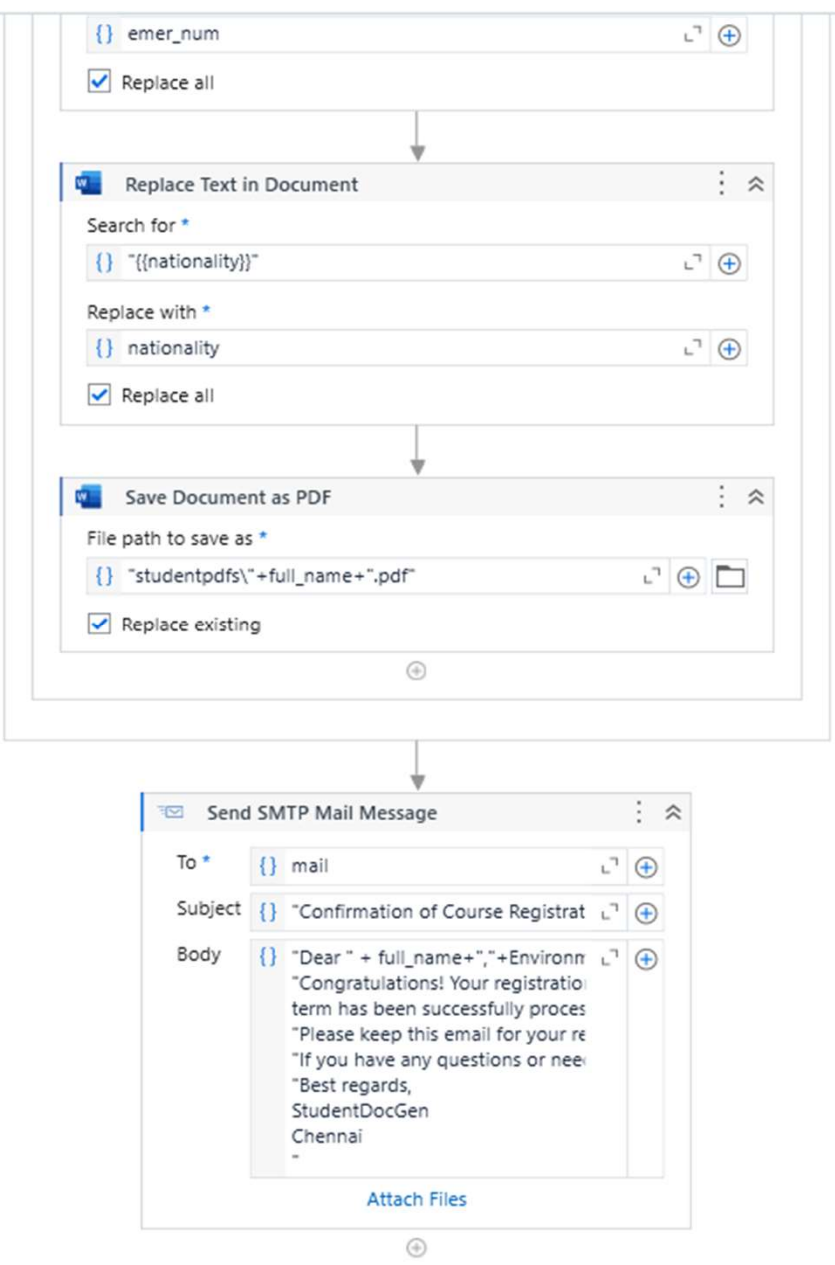
Dialog Title
"Course/Title name to register"
Input Label
"Enter your current course/title name"
Input Type
Text Box
Value entered
course_name


Word Application Scope
"details_copy.docx"
Do
Replace Text in Document
Search for *
"{{full_name}}"
Replace with *
full_name
Replace all
Replace Text in Document
Search for *
"{{dob}}"
Replace with *
dob.ToString
Replace all
Replace Text in Document
Search for *
"{{gender}}"
Replace with *
gender
Replace all
Replace Text in Document
Search for *

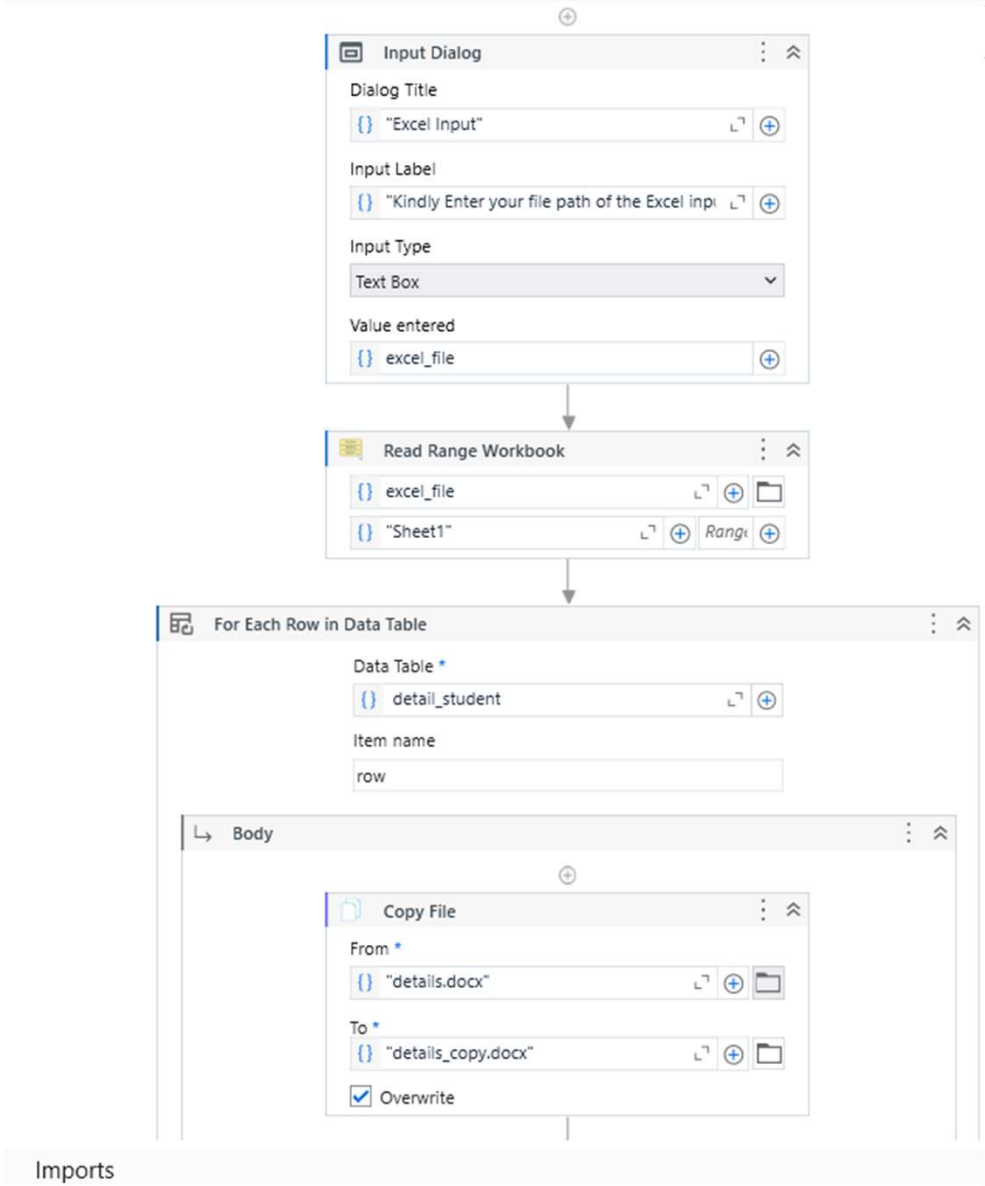

emer_num
Replace all
Replace Text in Document
Search for *
"{{nationality}}"
Replace with *
nationality
Replace all
Save Document as PDF
File path to save as *
"studentpdfs\"+full_name+".pdf"
Replace existing
Send SMTP Mail Message
To *
mail
Subject
"Confirmation of Course Registrat
Body
"Dear " + full_name+","+Environn
"Congratulations! Your registratio
term has been successfully proces
"Please keep this email for your re
"If you have any questions or nee
"Best regards,
StudentDocGen
Chennai
Attach Files

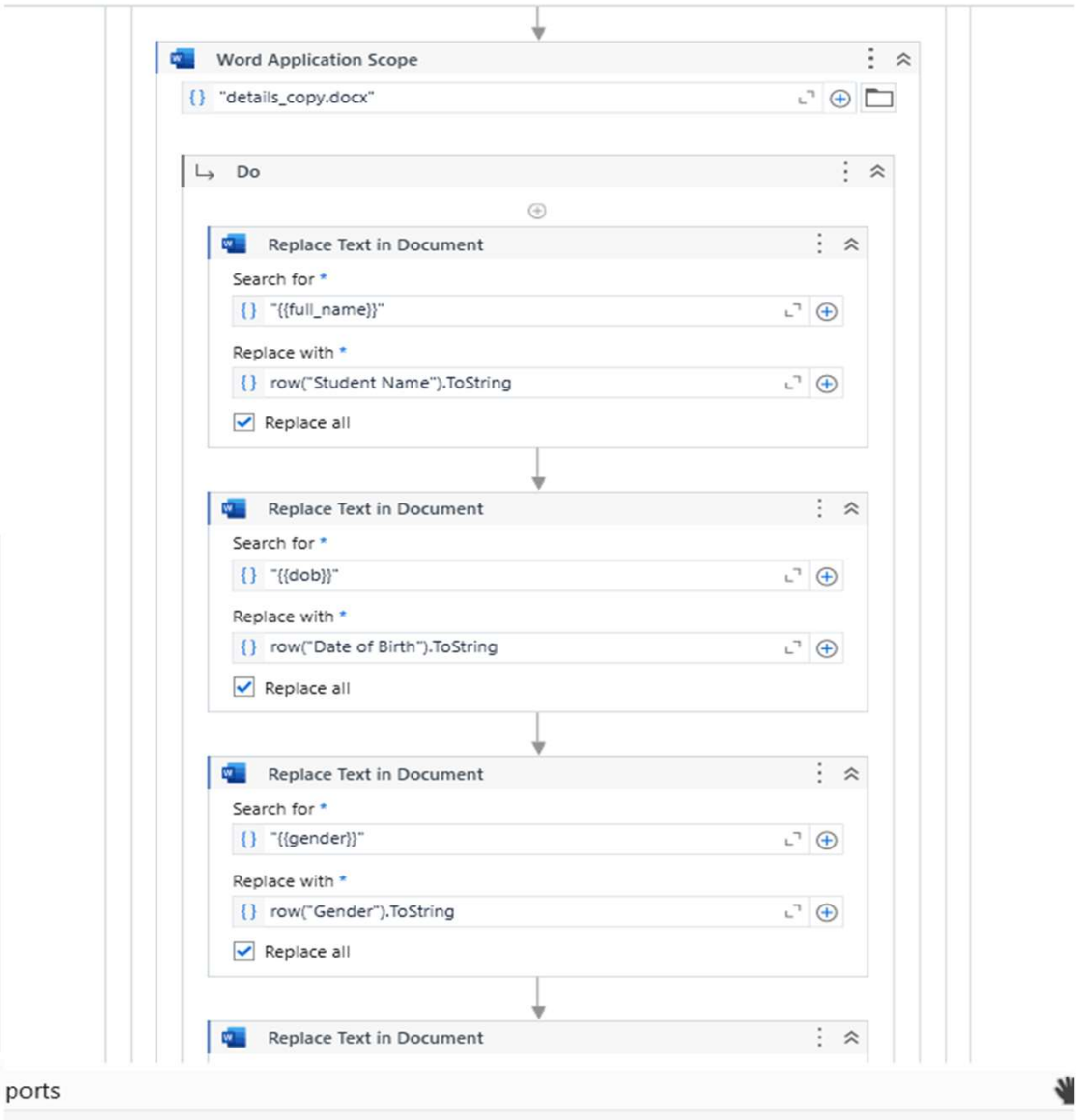
Implementation

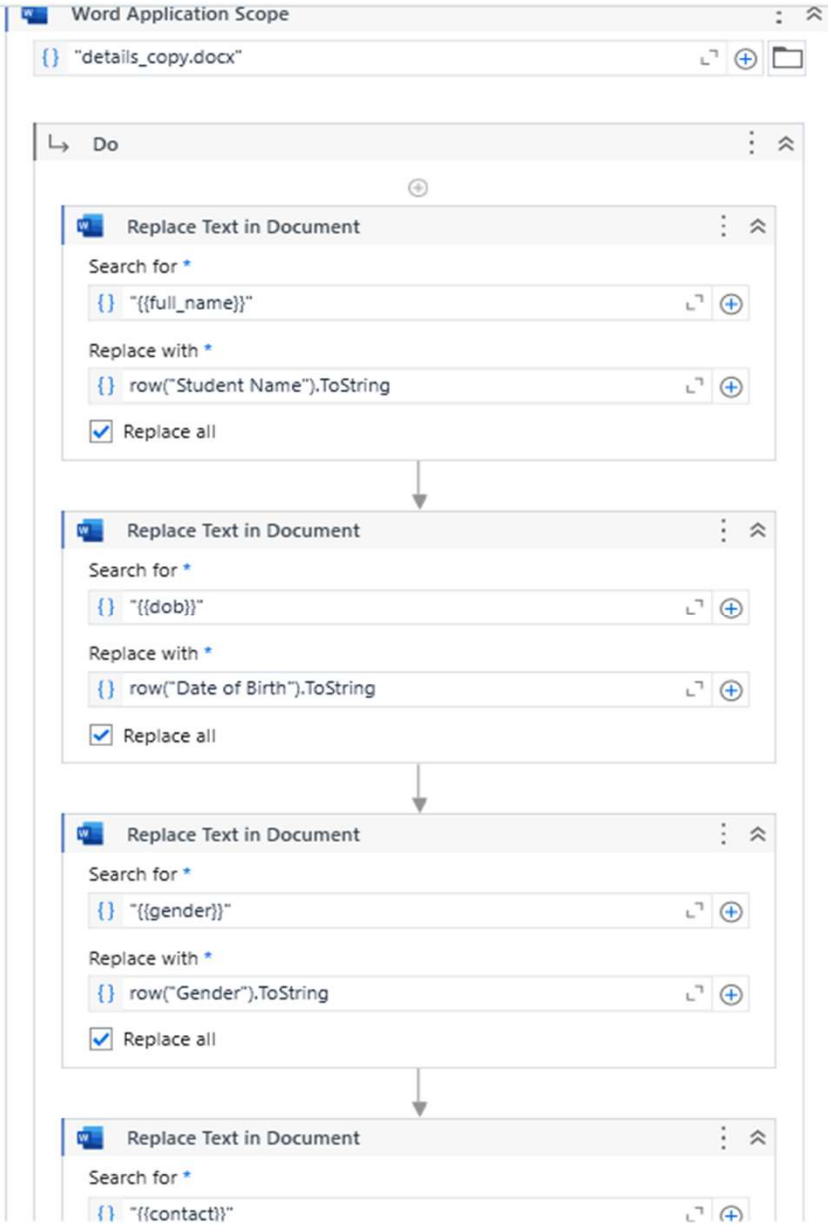
- Implementation of Module 2

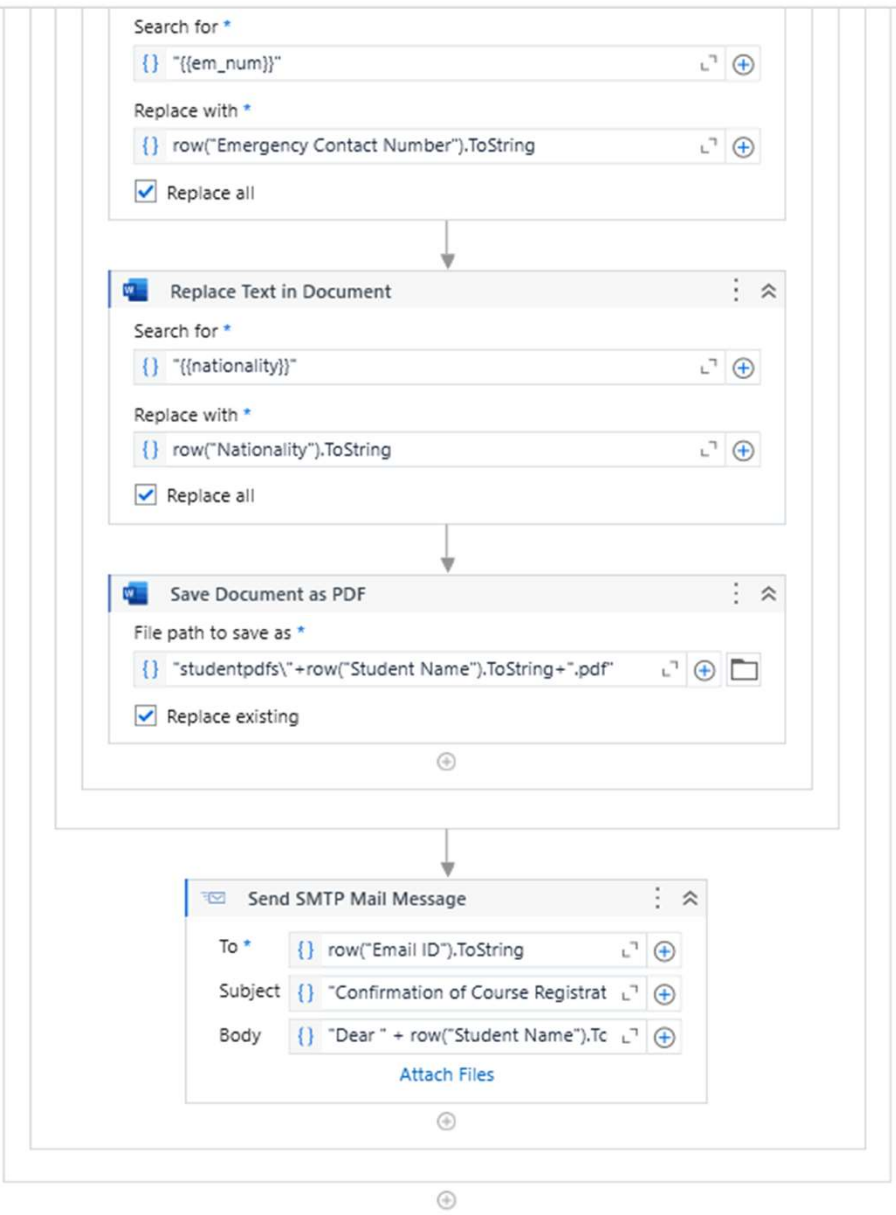
In this part, the system allows the user to upload an Excel file containing student data. The system will then extract this data and use it to generate the student PDF.

Implementation Screenshots






Word Application Scope
"details_copy.docx"
Do
Replace Text in Document
Search for *
"{{full_name}}"
Replace with *
row("Student Name").ToString
Replace all
Replace Text in Document
Search for *
"{{dob}}"
Replace with *
row("Date of Birth").ToString
Replace all
Replace Text in Document
Search for *
"{{gender}}"
Replace with *
row("Gender").ToString
Replace all
Replace Text in Document
Search for *
"{{contact}}"

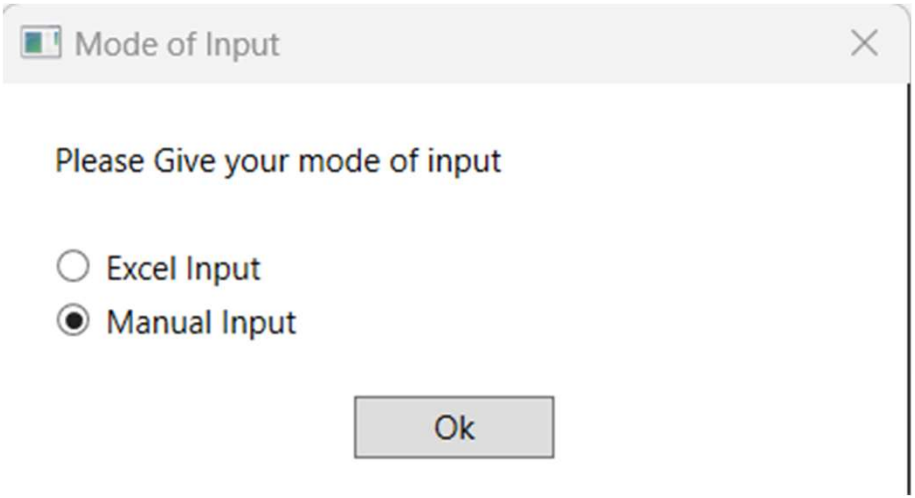

Search for *
"{{em_num}}"
Replace with *
row("Emergency Contact Number").ToString
Replace all
Replace Text in Document
Search for *
"{{nationality}}"
Replace with *
row("Nationality").ToString
Replace all
Save Document as PDF
File path to save as *
"studentpdfs\"+row("Student Name").ToString+".pdf"
Replace existing
Send SMTP Mail Message
To *
row("Email ID").ToString
Subject
"Confirmation of Course Registrat
Body
"Dear " + row("Student Name").Tc
Attach Files

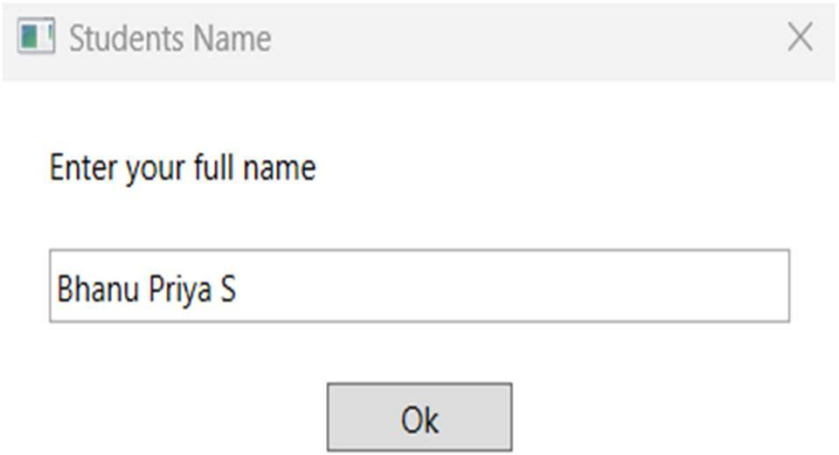
Testing

Module 1: Manual Input and Validation

Tests: Enter valid inputs for all required fields (e.g., name, email, course,gender,etc).

Expected Results: The system accepts the data without errors and proceeds to the next step.





Output

STUDENT COURSE DETAILS

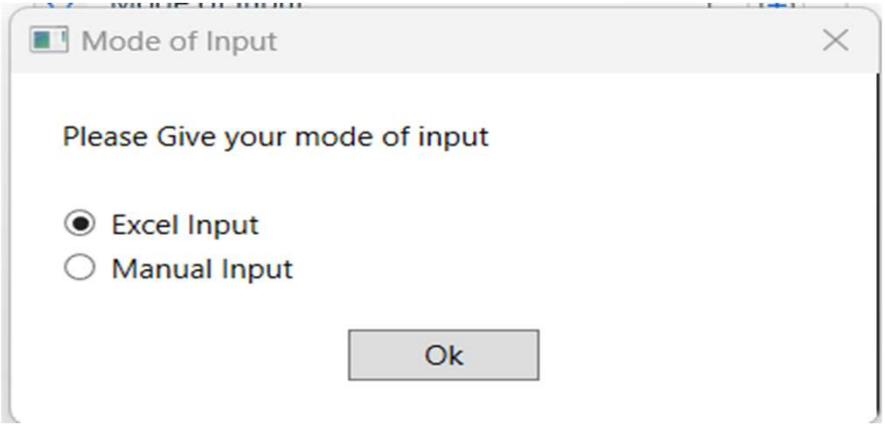
DETAILS	INFORMATION
Student Name	Bhanu Priya S
Date of Birth	2005-06-23
Gender	Female
Contact	9150860844
Email ID	220701040@rajalakshmi.edu.in
Address	Padi, Chennai
Current program of study	BE
Current year of study	III
Course registered	CSE
Preferred Class timing	Morning
Credits/Units	4
Emergency Contact Name	Srinivasan
Emergency Contact Number	6369106579
Nationality	Indian

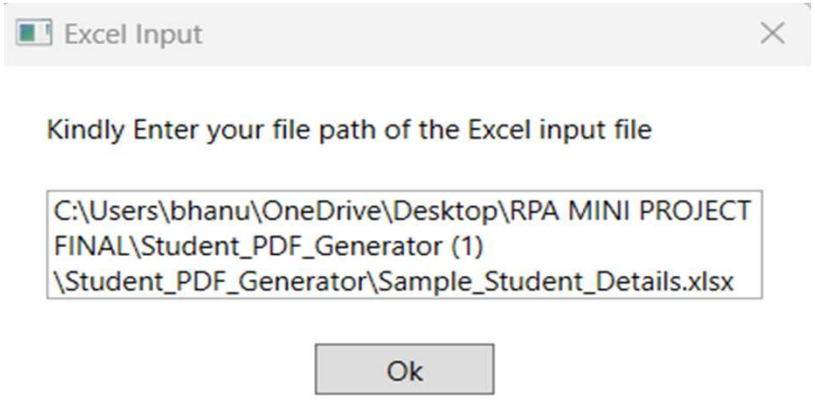
Testing

Module 2: Excel File Upload and Processing

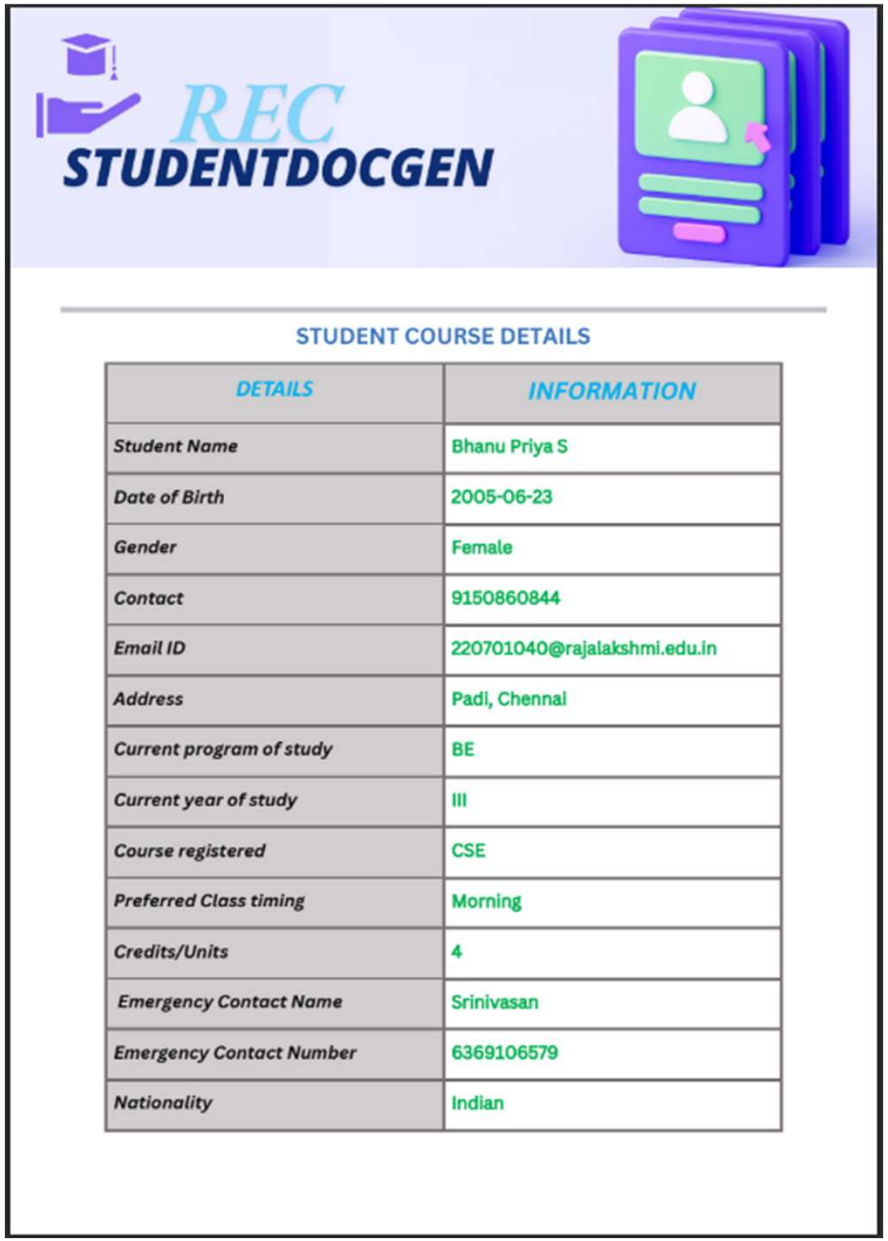
Tests: Upload an Excel file with all required fields filled correctly (e.g., name, email, roll number).

Expected Results: The system successfully reads and processes the data from the file without showing any errors, confirming that the data is valid.





Output



REC
STUDENTDOCGEN

STUDENT COURSE DETAILS

DETAILS	INFORMATION
Student Name	Bhanu Priya S
Date of Birth	2005-06-23
Gender	Female
Contact	9150860844
Email ID	220701040@rajalakshmi.edu.in
Address	Padi, Chennai
Current program of study	BE
Current year of study	III
Course registered	CSE
Preferred Class timing	Morning
Credits/Units	4
Emergency Contact Name	Srinivasan
Emergency Contact Number	6369106579
Nationality	Indian

Conclusions

The **Student PDF Generator** project successfully automates the process of collecting student details, processes it , generates personalized PDFs, and sending them via email. This system simplifies what was once a manual and time-consuming task, making it faster, more efficient. By offering both manual input and Excel upload options, it ensures flexibility for users to handle data in their preferred way. The automated PDF creation ensures uniformity in document formatting, while email integration adds convenience by delivering the results directly to the recipients.

Future Enhancement

- **Cloud Storage Integration**

The system can be improved to save the generated PDFs directly to cloud storage like Google Drive or OneDrive. This makes it easy to access, share, and keep documents safe as a backup.

- **Support for Multiple Languages**

In the future, the system can create PDFs and send emails in different languages. This will help students from various regions and make the system more user-friendly for everyone.

References

1. https://academy.uipath.com/courses/pdf-automation-in-studio-v202010
2. https://academy.uipath.com/

Queries

Demonstration

Thank You