ID CARD GENERATION AUTOMATION

A PROJECT REPORT

Submitted by

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RAJALAKSHMI ENGINEERING COLLEGE

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THANDALAM

CHENNAI – 602 105

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RAJALAKSHMI ENGINEERING COLLEGE

CHENNAI - 602105

BONAFIDE CERTIFICATE

Certified that this project report **"ID CARD GENERATION AUTOMATION"** is the bonafide work of **"RAGAVENDAR K (210701202)"** who carried out the project work for the subject OAI1903- Introduction to Robotic Process Automation under my supervision.

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

ABSTRACT

ID Card Generation using UI Path

ID Card generation is a crucial yet often repetitive task in various organizational settings. This project focuses on streamlining and automating the ID card creation process using UI Path, a popular Robotic Process Automation (RPA) tool.

Traditionally, ID card generation involves inputting employee details, such as name, photo, designation, and ID number, into a predefined template. This manual process can be time-consuming and prone to errors.

The proposed solution leverages UI Path's capabilities to create a bot that automates the entire ID card generation workflow. The bot takes user input or extracts information from a designated source, eliminating the need for manual data entry. The UI Path automation ensures consistent formatting and layout adherence across all generated ID cards.

The user-friendly interface allows users to input or select relevant information, such as employee details and template preferences. The bot then processes this data and generates ID cards in a standardized format.

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 **Mr. S.Meganathan, B.E, F.I.E.,** our Vice Chairman **Mr. Abhay Shankar Meganathan, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) Thangam Meganathan, 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, **Dr. N.Durai Murugan, M.E., Ph.D.,** Associate Professor, **Ms. Roxanna Samuel, M.E.,** Assistant Professor (SG), **Ms. J.Jinu Sophia, M.E.,** Assistant Professor (SG), Department of Computer Science and Engineering, Rajalakshmi Engineering College 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 and **Mr.B.Bhuvaneswaran, M.E.,** Assistant Professor (SG), Department of Computer Science and Engineering for his useful tips during our review to build our project.

RAGAVENDAR K (210701202)

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LIST OF ABBREVIATIONS

ABBREVIATION	ACCRONYM
RPA	Robotic Process Automation
ID Card	Identification Card
UI Path	User Interface Path
PDF	Portable Document Format
JPEG	Joint Photographic Experts Group
PNG	Portable Network Graphics
Excel	Microsoft Excel
SMTP	Simple Mail Transfer Protocol

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The ID Card Generation using UiPath project aims to provide a user-friendly and automated solution for creating identification cards. This tool is tailored for both experienced developers and beginners entering the realm of web development. By leveraging the capabilities of UiPath, the bot simplifies the ID card generation process, allowing users to concentrate on the essential aspects of their projects.

The bot offers a seamless environment setup for developers, eliminating the need for manual and repetitive tasks. It automates the creation of the ID card template, incorporating user-provided information efficiently. The generated code ensures a robust try-catch block, handling errors and exceptions transparently, thus relieving developers from explicit error-handling concerns.

UiPath, a renowned provider of Robotic Process Automation (RPA) solutions, plays a pivotal role in this project. UiPath's Automation Platform combines visual integrated development environments (IDEs) like Studio with client-side agents known as Robots. The processes created in Studio are executed by Robots, and their deployment, monitoring, and management are overseen by the central management tool called Orchestrator.

By adopting UiPath's robust features, the ID Card Generation using UiPath project presents a comprehensive and accessible solution for automating the ID card creation process, catering to both novice users and developers.

1.2 OBJECTIVE

The primary objective of the ID Card Generation using UiPath project is to simplify and automate the process of creating identification cards. The project focuses on achieving the following key goals:

1. **Streamlined ID Card Development:** The project aims to provide a seamless and user-friendly interface for generating ID cards. By leveraging UiPath's capabilities, the bot automates the creation of ID card templates, reducing the manual effort required from users.
2. **Efficient Environment Setup:** The project intends to streamline the setup process, allowing users to initiate the ID card generation directly through the UiPath environment. This includes handling repetitive tasks such as template design, data input, and code generation.
3. **User-Focused Logic Implementation:** The primary focus is to enable users, both developers and novices, to concentrate on building the logic for their ID card projects. The bot takes care of the intricate details of the ID card generation process, enabling users to emphasize the business logic without delving into the complexities of manual ID card creation.
4. **Error-Resilient Code Generation:** The generated code incorporates a robust try-catch block, enhancing error handling and ensuring the seamless execution of ID card generation processes. This feature aims to alleviate concerns related to unexpected errors during the development process.

1.3 EXISTING SYSTEM

In the current scenario of ID card generation, the process is predominantly manual and involves several repetitive and time-consuming tasks. The existing system is characterized by the following steps:

1. **Manual Environment Setup:** Developers are required to open a terminal each time they initiate the ID card generation process. This involves typing commands to set up the necessary environment for creating ID cards, leading to a repetitive and potentially error-prone setup procedure.
2. **App Creation Process:** When creating a new app within the ID card generation project, developers must navigate to the appropriate directory using the terminal, then execute commands to generate a new app. This manual intervention is consistent for every project and app creation, leading to inefficiencies and increased development time.
3. **File Editing and Creation:** After project and app creation, developers are tasked with manually editing various files that require modifications. Additionally, the creation of new files specific to the app demands further manual effort. This manual file management process is a common and repetitive aspect of ID card generation.
4. **Routing Configuration:** The responsibility of configuring routing for each API rests on the developer. This involves adding links in the urls.py file and creating corresponding functions in the views.py file. The manual nature of this task introduces the potential for errors and increases the overall complexity of the ID card generation process.

1.4 PROPOSED SYSTEM

The proposed ID Card Generation using UiPath system envisions a significant enhancement in the efficiency and user experience of ID card development. The key features of the proposed system include:

1. **Automated Django Environment Setup:** The bot will facilitate the development of Django projects by automating the setup process. By providing the project name, the bot will open a terminal, execute the necessary commands, and create a new project. It will intelligently edit the settings.py and urls.py files, streamlining the environment setup for the developer.
2. **Simplified App Creation:** Upon receiving the app name, the bot will execute the corresponding terminal commands to create a new app within the Django project. It will dynamically edit the required files and generate a new urls.py file within the app, eliminating the need for manual directory navigation and command execution.
3. **Efficient API Body Processing:** The bot is designed to process the body of the API efficiently. Developers can provide the API body, and the bot will generate the respective functions for each API, encapsulated within a try-catch block. This approach ensures robust error handling and simplifies the coding process for the developer.
4. **Automated Routing Configuration:** The proposed system automates the routing process for created APIs. The bot intelligently handles the configuration of links in the urls.py file and creates corresponding functions in the views.py file. This automation eliminates the need for manual intervention in the routing setup, reducing the likelihood of errors.
5. **Seamless File Management:** The bot continuously monitors and updates the project and app files as developers progress in their coding. This seamless file management allows developers to focus on writing their code without disruption, enhancing the overall development experience.

CHAPTER 2

LITERATURE REVIEW

The literature review for the proposed "ID Card Generation" using UiPath project provides insights into the existing body of knowledge related to similar endeavors. Current literature highlights the increasing prominence of Robotic Process Automation (RPA) tools, with UiPath standing out as a leader in the field. UiPath's capabilities in automating routine and repetitive tasks, as demonstrated in various industries, underline its potential application in streamlining the ID card generation process.

Studies and articles emphasize the advantages of integrating RPA tools like UiPath in office automation, particularly in tasks involving document creation and processing. The proposed project aligns with this trend, focusing on the automation of the traditionally manual and time-consuming task of ID card generation. The literature suggests that such automation not only enhances efficiency but also reduces errors associated with manual data entry and processing.

Additionally, the literature underscores the user-friendly nature of UiPath, making it accessible to individuals with varying levels of technical expertise. The proposed project leverages this characteristic by providing a simplified interface for users to initiate and customize the ID card generation process. This aligns with the broader trend of democratizing automation, enabling users with diverse backgrounds to harness the benefits of RPA tools.

In summary, the literature review supports the viability of the proposed "ID Card Generation" using UiPath project. The proposed project builds on this foundation, aiming to provide a seamless and accessible solution for ID card creation.

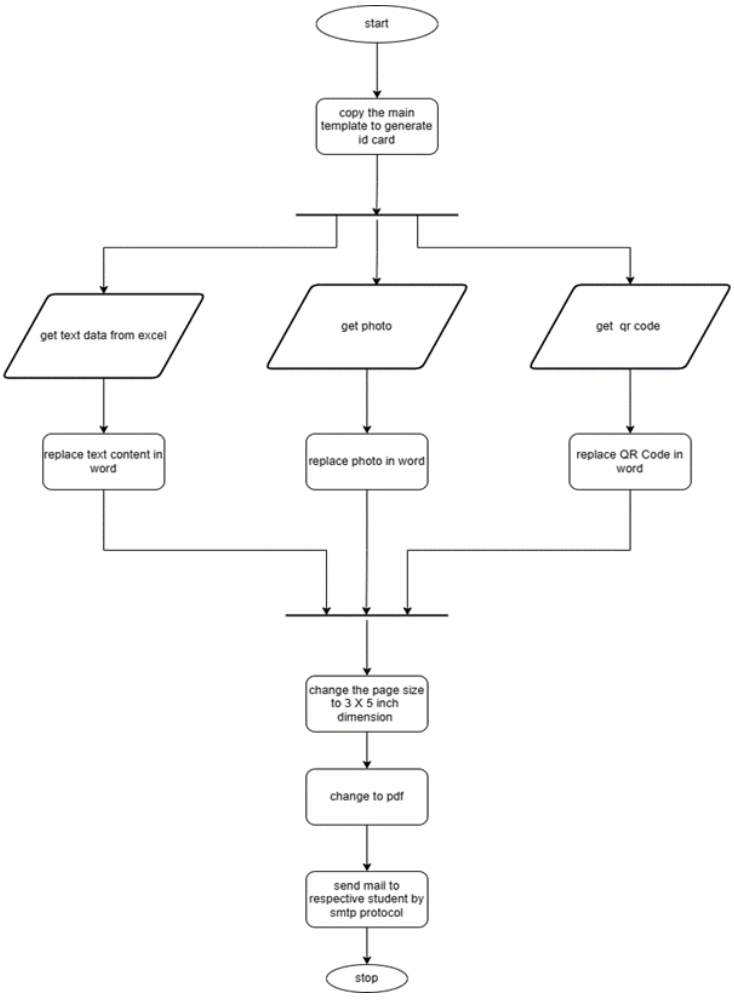
CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

A flowchart is a visual representation of the step-by-step processes involved in a system or project. The system flow diagram for the "ID Card Generation" using UiPath project is designed to illustrate the seamless flow of activities from initiation to the final output. The flowchart follows a logical sequence of actions and decision points, providing a clear overview of the entire process.

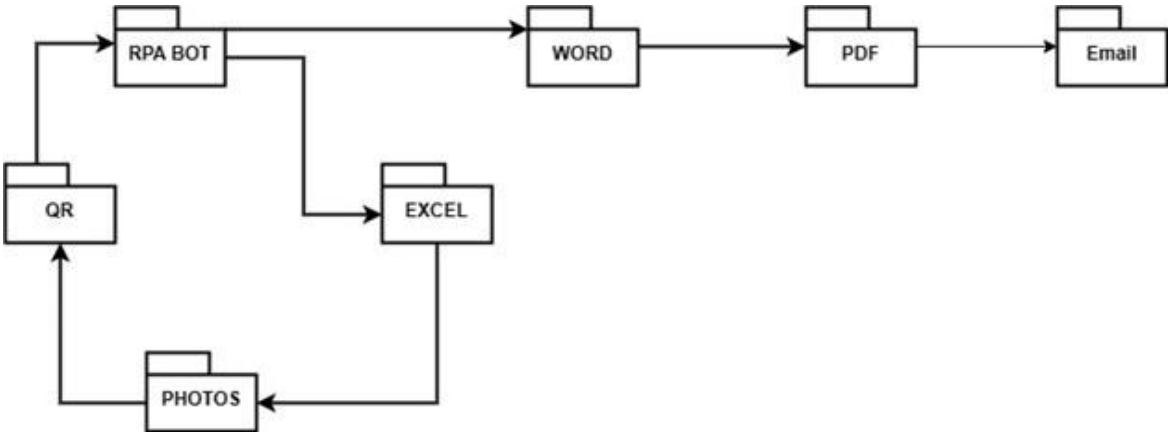
Fig 3.1 System Flow Diagram



3.2 ARCHITECTURE DIAGRAM

An architecture diagram serves as a visual representation of the key concepts, principles, elements, and components that constitute the "ID Card Generation" using UiPath project. The architecture is designed to illustrate the structural and functional aspects of the system in a comprehensive manner.

Fig 3.2 Architecture Diagram



3.3 SEQUENCE DIAGRAM

A sequence diagram is a type of interaction diagram because it describes how—and in what order—a group of objects works together.

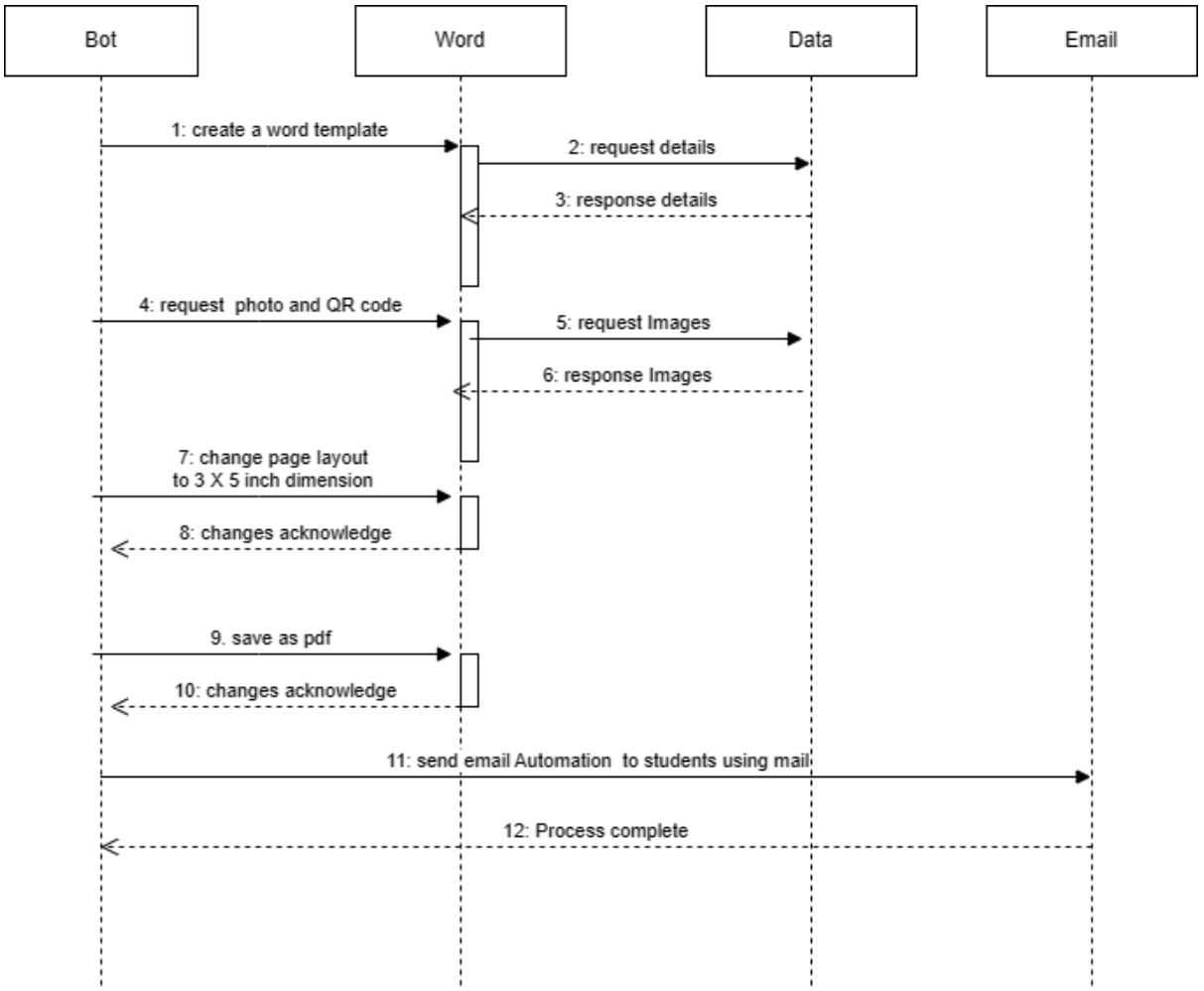


Fig 3.3 Sequence Diagram

CHAPTER 4

PROJECT DESCRIPTION

4.1 MODULES

MODULE 1: EXTRACTING DATA FROM EXCEL

In this initial module, the focus is on extracting essential employee information from structured Excel sheets. UiPath's automation capabilities allow users to define the format of the Excel sheet and efficiently extract data such as employee names, designations, and identification numbers. The module ensures accuracy in data extraction, laying a robust foundation for subsequent ID card generation processes.

MODULE 2: REPLACE CONTENT IN WORD TEMPLATE FOR ID CARD

Building upon the extracted data, Module 2 involves the dynamic replacement of content within a pre-designed Word template tailored for ID cards. UiPath's automation scripts intelligently identify placeholder content and seamlessly substitute it with the relevant employee information extracted in Module 1. This step ensures a standardized and visually appealing ID card layout, enhancing the professional quality of the final output.

MODULE 3: SAVING IT AS PDF

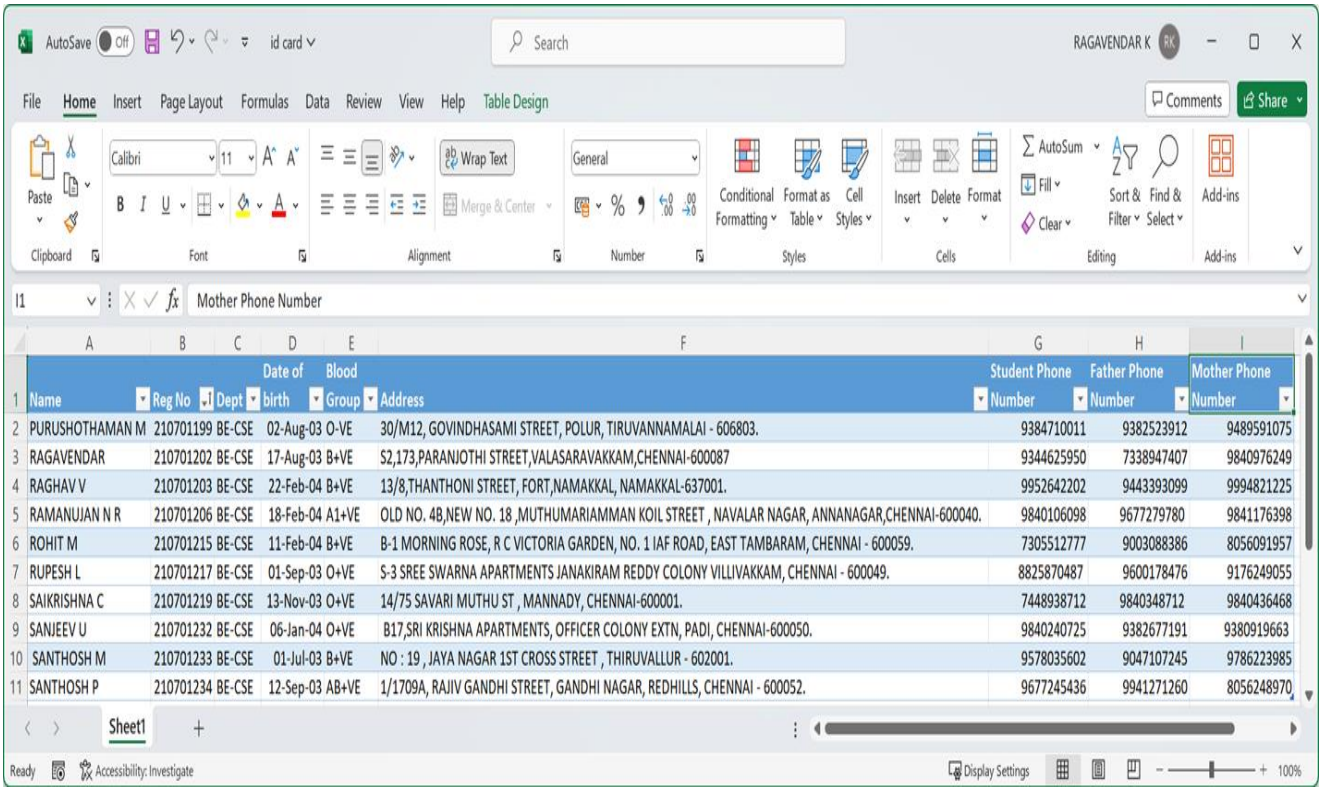
Following the content replacement in the Word template, Module 3 is dedicated to converting the modified document into a universally compatible PDF format. UiPath streamlines this process, allowing for the efficient saving of ID cards as PDF files. This format ensures ease of distribution, printing, and archiving, making the generated ID cards accessible across various platforms.

MODULE 4: SENDING EMAIL

The final module revolves around automating the email distribution of the generated ID cards. UiPath seamlessly integrates with the Simple Mail Transfer Protocol (SMTP) to send emails with the attached PDF ID cards. Users can specify recipients, subject lines, and additional content through the UiPath interface, facilitating a streamlined and user-friendly approach to distributing ID cards to relevant stakeholders.

CHAPTER 5

OUTPUT SCREENSHOTS



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SANTHOSH P	210701234	BE-CSE	12-Sep-03	AB+VE	1/1709A, RAJIV GANDHI STREET, GANDHI NAGAR, REDHILLS, CHENNAI - 600052.	9677245436	9941271260	8056248970

Fig 5.1 Exatracting data

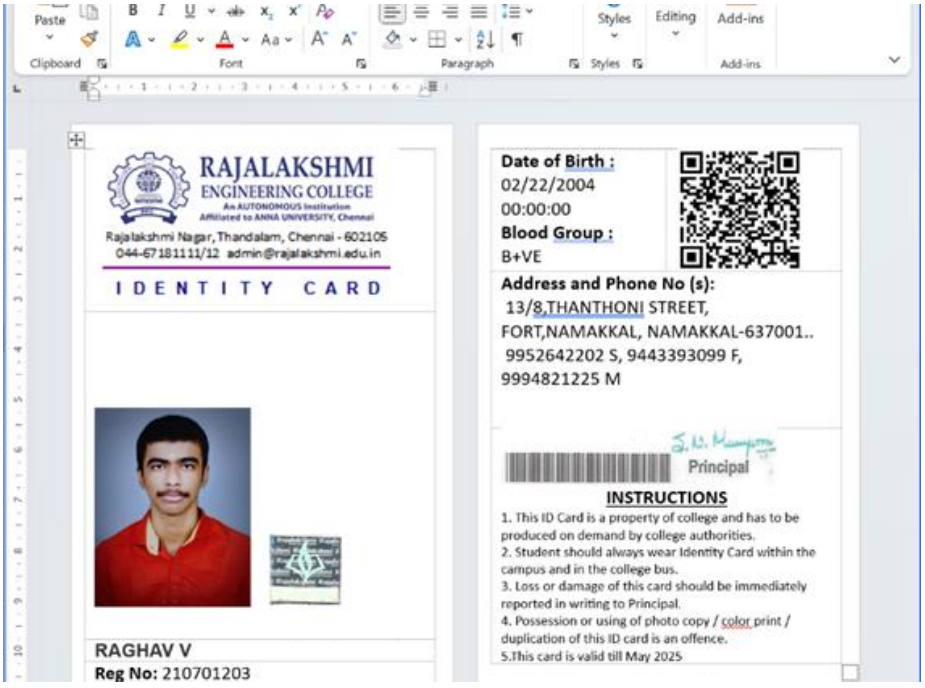


Fig 5.2 Editing template

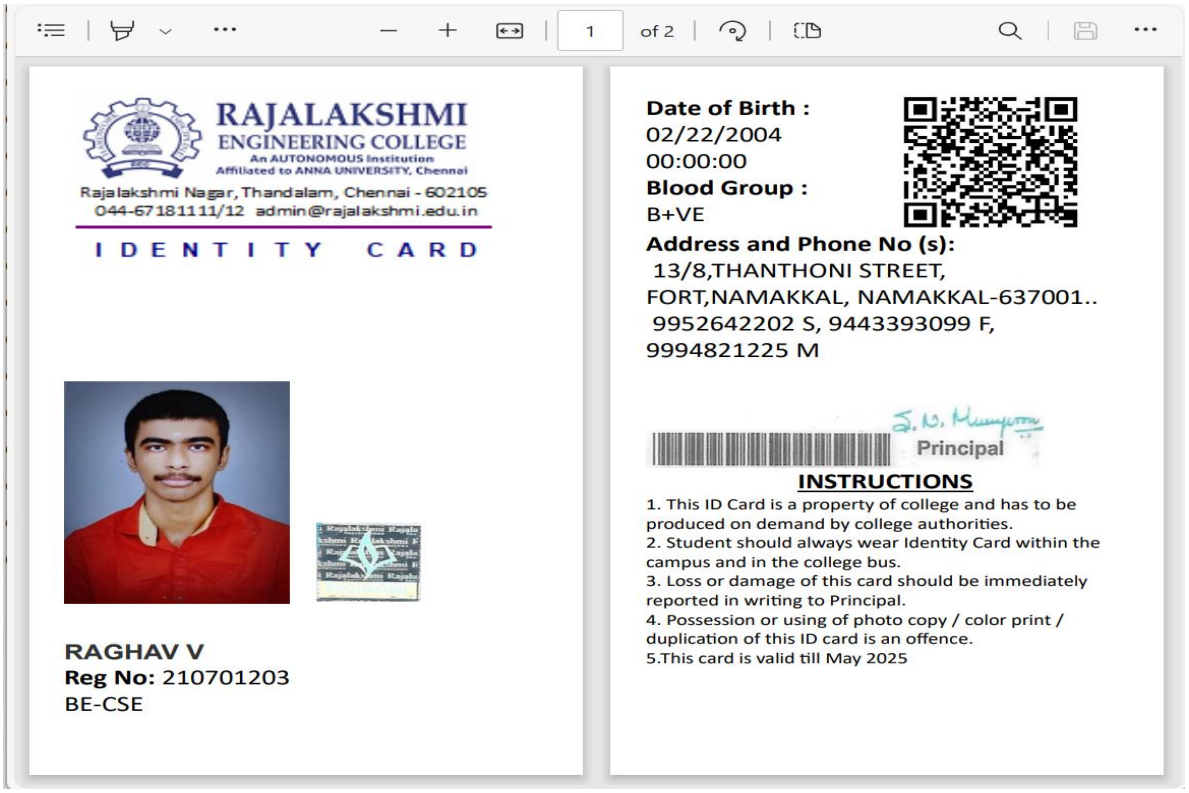


Fig 5.3 Converting pdf

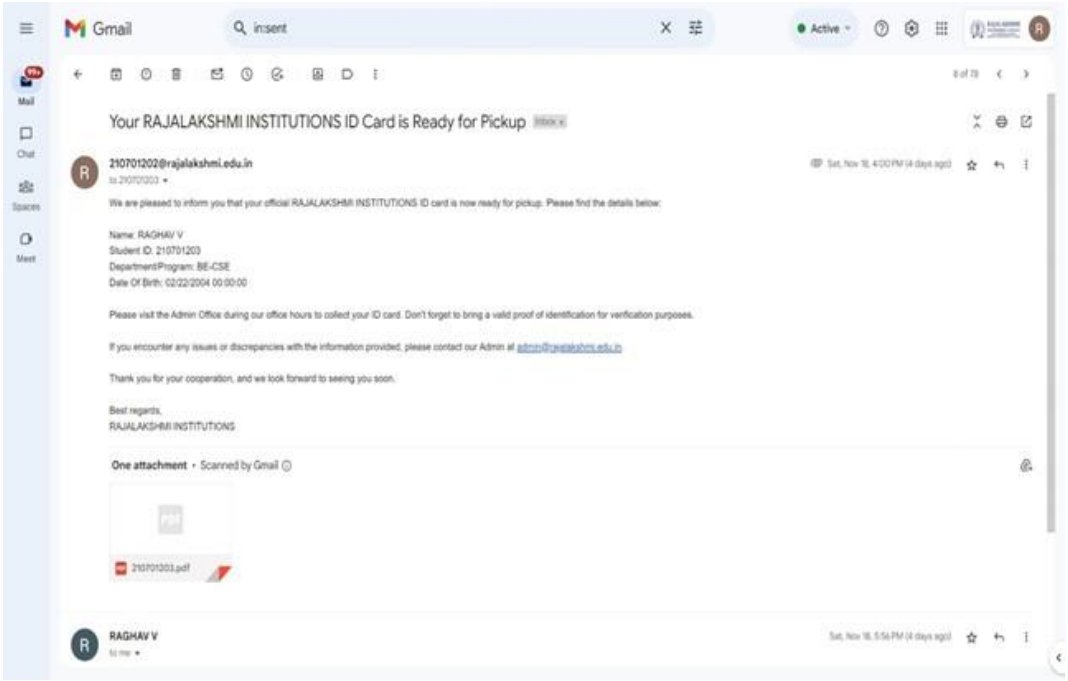


Fig 5.4 Send mail

CHAPTER 6

CONCLUSION

The ID Card Generation bot has been successfully developed, demonstrating robust performance in automating the creation of ID cards through the UI path. This solution empowers developers, even those unfamiliar with the UI path framework, to effortlessly generate ID cards using Python.

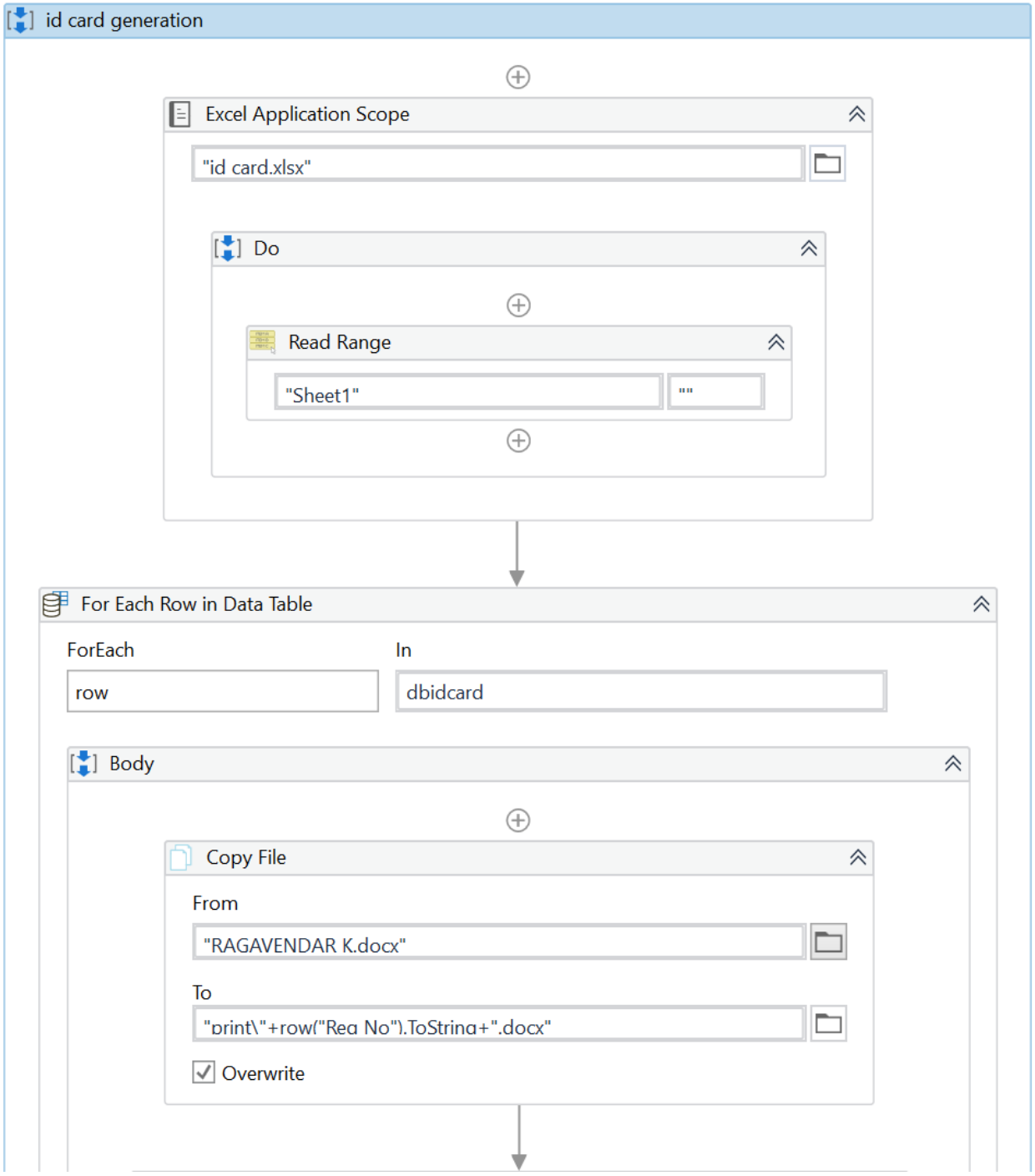
By leveraging the bot, developers only need a foundational understanding of Python programming to embark on their ID card generation projects within the UI path environment.

Future Features:

1. **Automated Database Connection:**
    - Enhance the bot's capabilities by introducing automated database connections. This feature will streamline the integration of database functionalities, providing a seamless experience for developers.
2. **Automated Testing Process:**
    - Integrate automated testing processes for common inputs, ensuring the reliability and accuracy of the ID card generation bot. This enhancement will contribute to the overall robustness of the system.
3. **Post Man API Verification:**
    - Implement Postman integration to validate the output of APIs. This addition will enhance the bot's functionality by enabling developers to verify the correctness of the ID card generation through a widely-used API testing tool.
4. **Framework Extension:**
    - Extend the capabilities of the bot to handle frameworks beyond the UI path. This expansion will broaden the applicability of the ID card generation bot, catering to a diverse range of developer preferences and project requirements.

APPENDIX

SAMPLE PROCESS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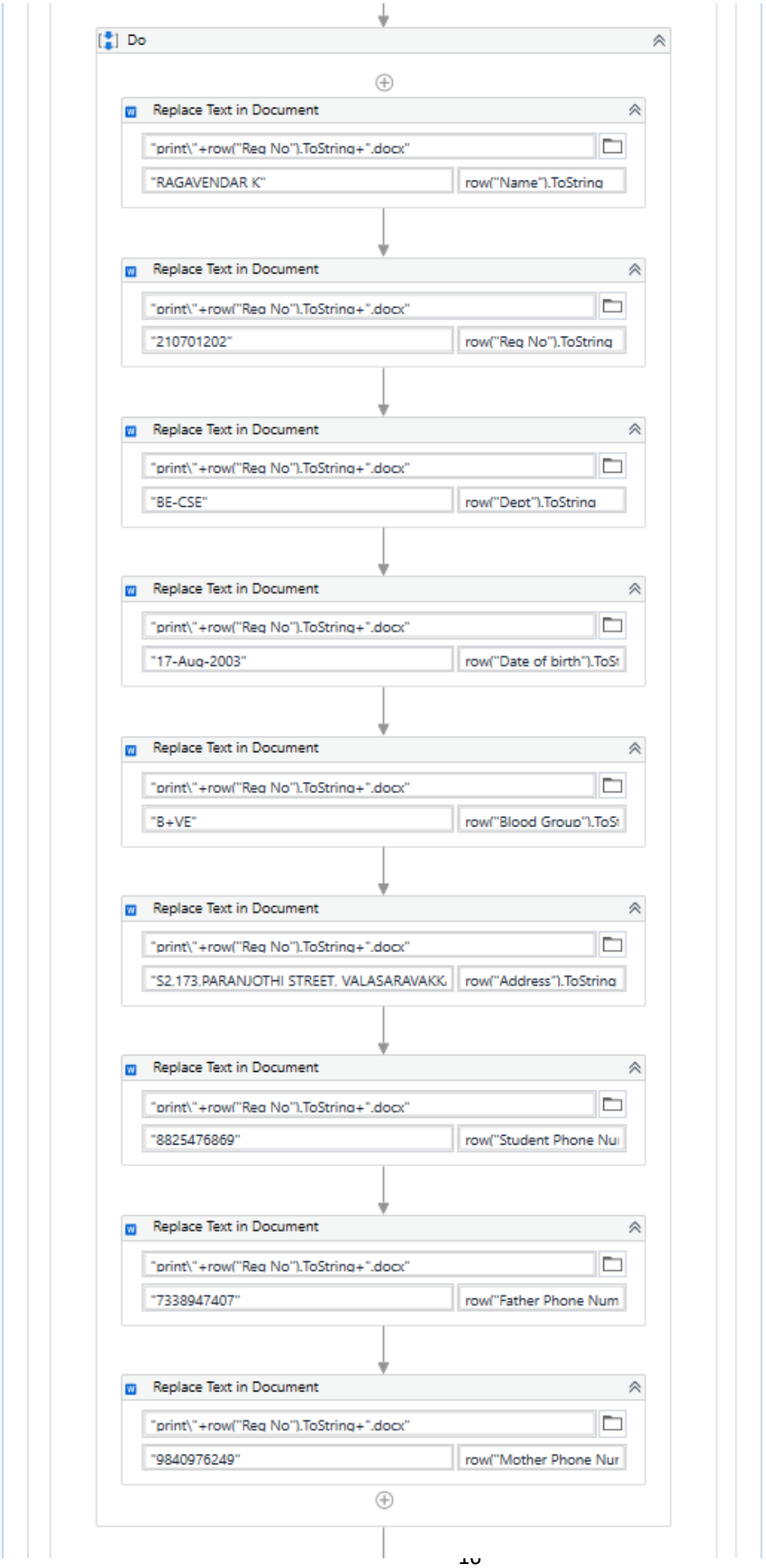
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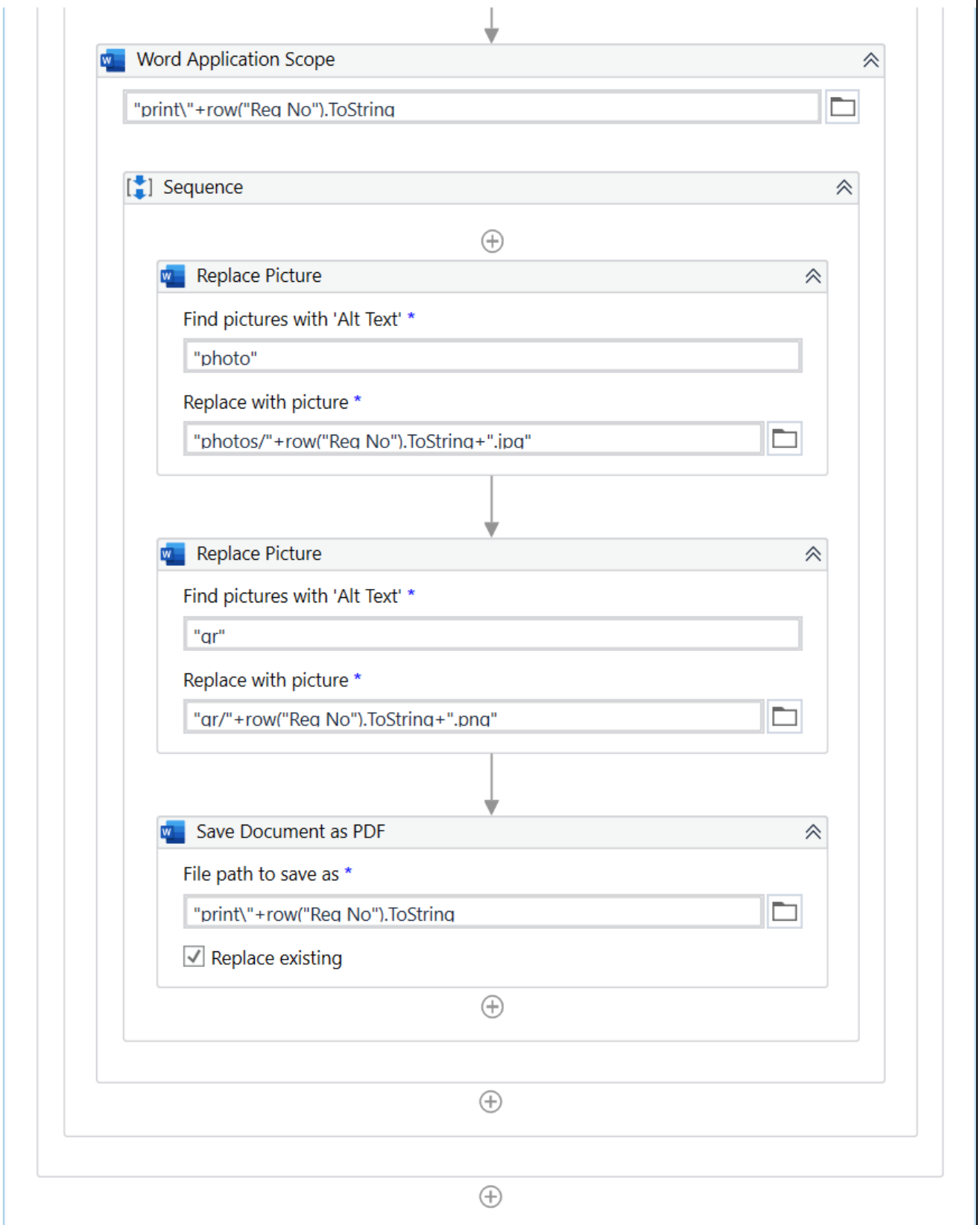
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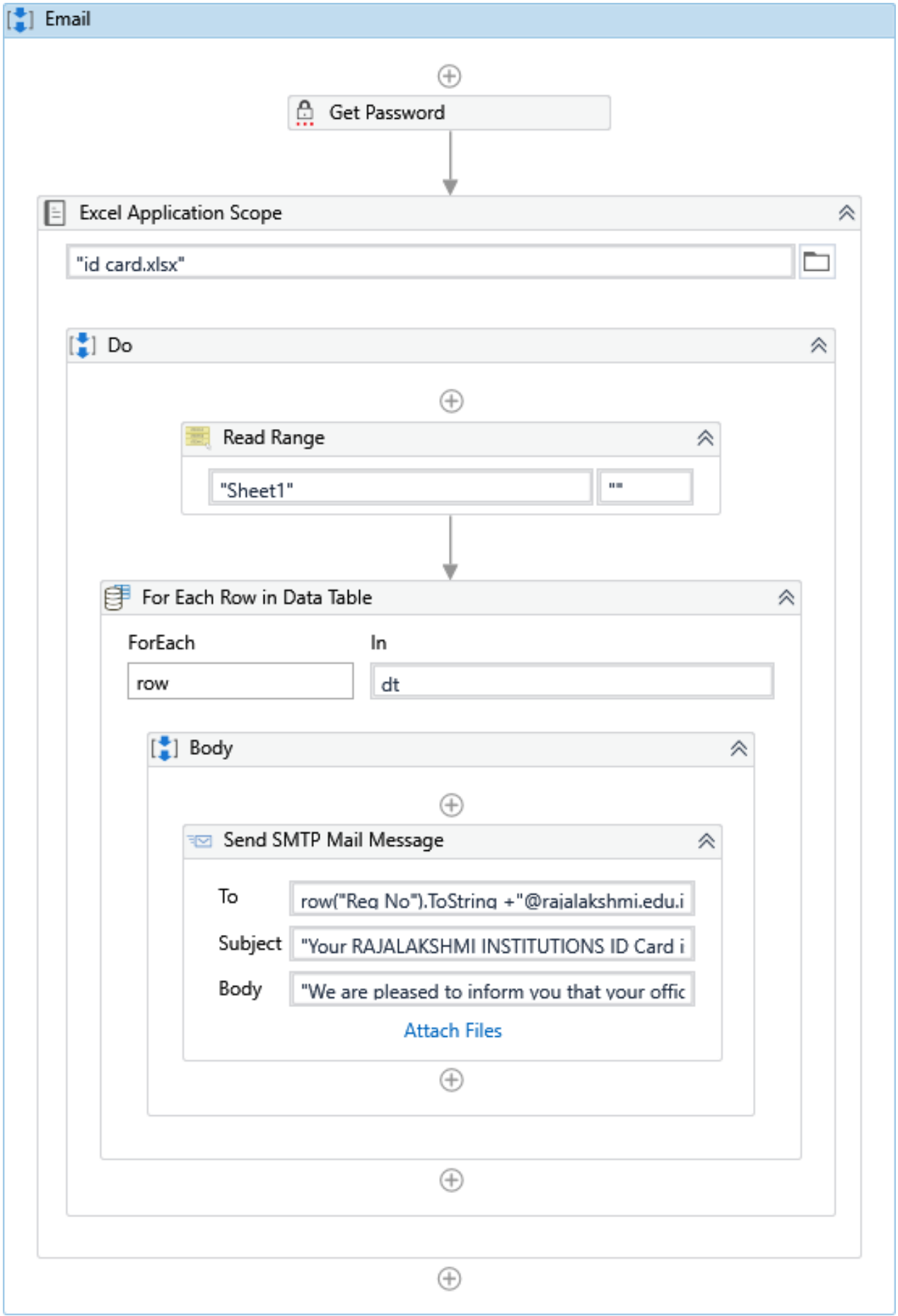
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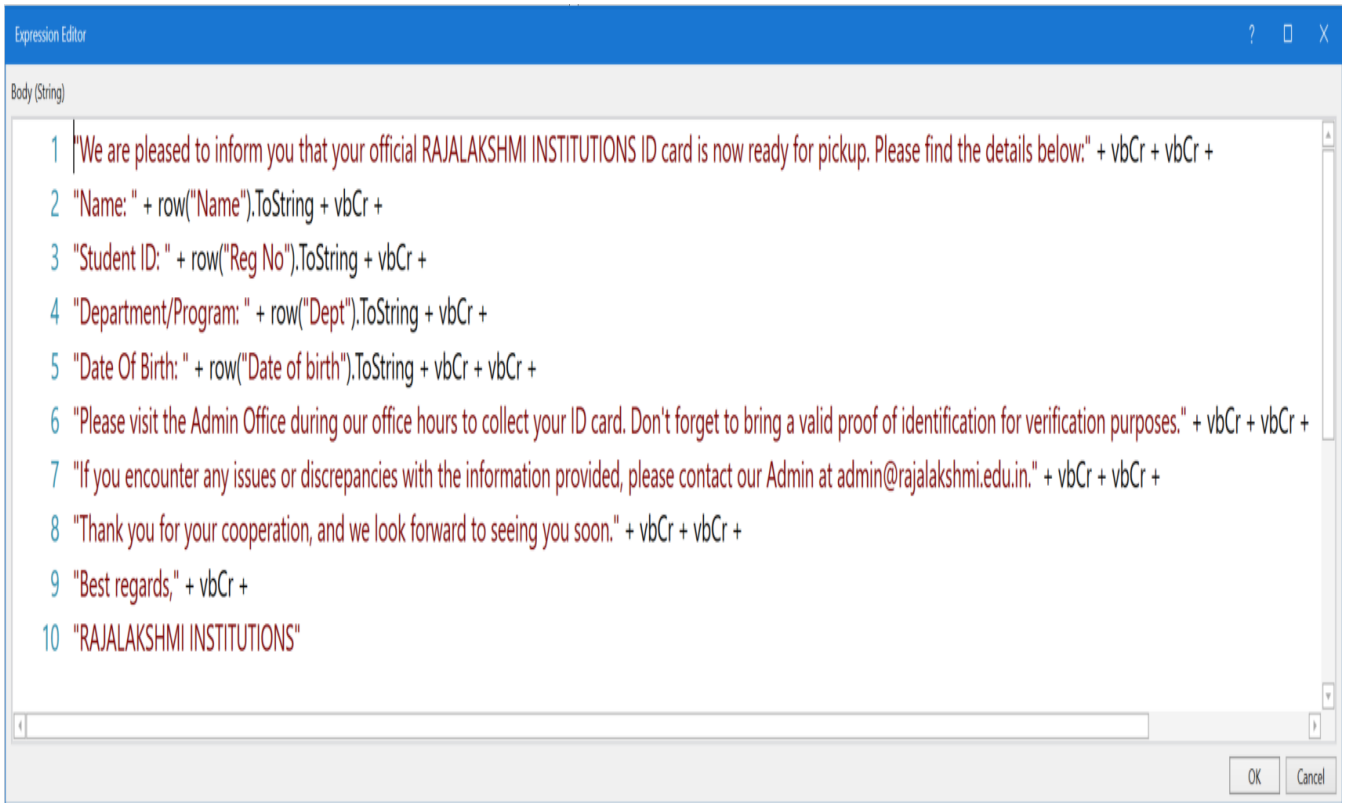

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1. **PDF Handling:**

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1. **Excel Integration:**

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1. **UiPath Automation Platform:**

   UiPath. (n.d.). UiPath Documentation. https://docs.uipath.com/

These references provided valuable insights into the functionalities and best practices associated wit h Microsoft Word, PDF, Excel, and UiPath, contributing to the successful implementation of the ID c ard generation project.