ST JOSEPH ENGINEERING COLLEGE

MANGALURU – 575 028

(An Autonomous Institution)

The Department of Intelligent Computing and business System

A Course Project Report

On

Emerging Technologies: A Primer - 22ETP58

Of the Fifth Semester offered in Association with SJEC AICTE IDEA Lab

CERTIFICATE GENERATION AND EMAIL AUTOMATION USING UIPATH

Submitted By

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Under the Guidance of

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Intelligent Computing and Business System

29 November 2026

ST JOSEPH ENGINEERING COLLEGE
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The Department of Intelligent Computing and Business System
CERTIFICATE OF COMPLETION

It is hereby certified that this Course Project Report is a bonafide work carried out by the students listed below under my guidance in the Department of Intelligent Computing and Business System . This work has been completed towards the partial fulfilment of the course Emerging Technologies: A Primer - 22ETP58, offered in the Fifth Semester.

It is further certified that the students have incorporated all the corrections/suggestions provided during the progress reviews and assessments. The project work has been evaluated and approved as it meets the requirements of project implementation as mandated by the Department.

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DECLARATION

We, the undersigned students of the Department of **Intelligent Computing and Business System**, hereby declare that the project work entitled **"CERTIFICATE GENERATION AND EMAIL AUTOMATION USING UIPATH"**, submitted in partial fulfilment of the requirements of the course Emerging Technologies: A Primer - 22ETP58, in the **Fifth Semester**, is an original Course Level Project carried out by us.We also certify that the work reported in this document has not been previously submitted to any institution or organization for any academic award, degree, or certification. We abide by the academic integrity and ethical standards of the Department and the Institution, and accept that any violation, if discovered later, may lead to appropriate action.

Students' Signatures:

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Date: 29 November 2025

Place: Mangaluru

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We are immensely thankful to the Head of the Department, Dr Harivinod N, for providing the necessary support and a conducive learning environment.

We acknowledge the institutional support provided by St Joseph Engineering College – Mangaluru for enabling us to explore real-world solutions through this project.

Finally, we thank all our classmates, respondents, users, and stakeholders who extended their cooperation and contributed to the successful completion of our project.

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ABSTRACT

This project focuses on automating the process of certificate generation and email distribution using UiPath. Traditionally, institutions manually prepare certificates for participants, which is time-consuming, repetitive, and highly prone to errors. The developed automation reads participant details from an Excel sheet, updates a PowerPoint-based certificate template with individual student information, converts it to PDF, and automatically emails the certificates to the respective recipients. The solution is built using the RE Framework to ensure robustness, modularity, and effective exception handling. The automation significantly reduces manual workload, improves accuracy, and enables institutions to process certificates for large batches efficiently. The project demonstrates the application of Robotic Process Automation (RPA) in solving real-world administrative challenges through a streamlined and fully automated workflow.

Keywords: RPA, UiPath, Email Automation, Certificate Generation

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Chapter – 1: Problem Description

Educational institutions frequently issue certificates for events, workshops, competitions, seminars, and academic programs. Traditionally, the process requires manually entering each student's name, USN, and other details into a certificate template and sending them individually via email. This is highly time-intensive, especially when dealing with large participant lists.

The manual procedure often leads to errors such as incorrect spellings, misplaced files, or sending certificates to the wrong email addresses. Additionally, administrative staff must repeat the same steps for every new event, causing inefficiencies.

The stakeholders affected by this problem include:

- **Event organizers**, who must manage hundreds of certificates
- **Administrative staff**, who manually prepare and send certificates.
- **Students**, who expect timely and accurate receipt of their certificates.

This repetitive and error-prone workflow demands an automated system that reduces workload and improves accuracy.

Chapter – 2: Problem Definition

Educational institutions frequently conduct events, workshops, seminars, competitions, and training programs where participation certificates must be issued to a large number of students. The traditional method of preparing certificates requires manually entering each student's details—such as name, USN, and email—into a certificate template, exporting it as a PDF, and individually sending it to the receiver. This manual workflow is slow, repetitive, and highly prone to human errors such as incorrect name spelling, wrong email addresses, and misplacement of files.

Moreover, administrative staff must repeat the same steps for every event, resulting in significant time consumption and reduced productivity. As the number of participants increases, the manual process becomes even more inefficient, creating delays in certificate distribution.

Therefore, there is a need for an automated, reliable, and scalable system that can read participant details from an Excel file, generate personalized certificates using a predefined template, convert them into PDF format, and automatically send them to the respective recipients via email. The system should minimize human effort, reduce errors, and ensure faster certificate delivery.

Chapter – 3: Project Objectives

Functional Requirements

- Read participant data (Name, USN, Email) from an Excel file.
- Load a PowerPoint certificate template automatically.
- Insert participant-specific details into the template.
- Export the generated certificate as a PDF.
- Send emails to participants with the certificate attached.
- Validate email credentials using IMAP/SMTP.
- Handle incorrect inputs gracefully using exception handling.

Non-Functional Requirements

- **Reliability:** Automation should complete all certificates without crashing.
- **Performance:** Should handle large participant lists efficiently.
- **Usability:** Simple user interaction for entering email credentials and subject.
- **Maintainability:** Structured using REFramework for easy updates.
- **Availability:** Works offline except for email sending.

Constraints

- Requires correct Excel and PPT file formats.
- Email sending depends on valid SMTP/IMAP credentials.
- Template formatting must remain consistent.
- Internet connection required for sending certificates.

Chapter – 4: Description of Work

4.1 Ideation & Design

System Architecture

Components:

1. **Initialization Module** – Loads Excel, PPT template, configuration files.
2. **Login Credentials Module** – Accepts email ID & password from user.
3. **Transaction Module** – Reads each student's data (Name, USN, Email).
4. **Certificate Generator Module** – Writes details into PPT and exports PDF.
5. **Email Automation Module** – Sends certificate to student.
6. **Exception Handler Module** – Manages invalid inputs & missing files.

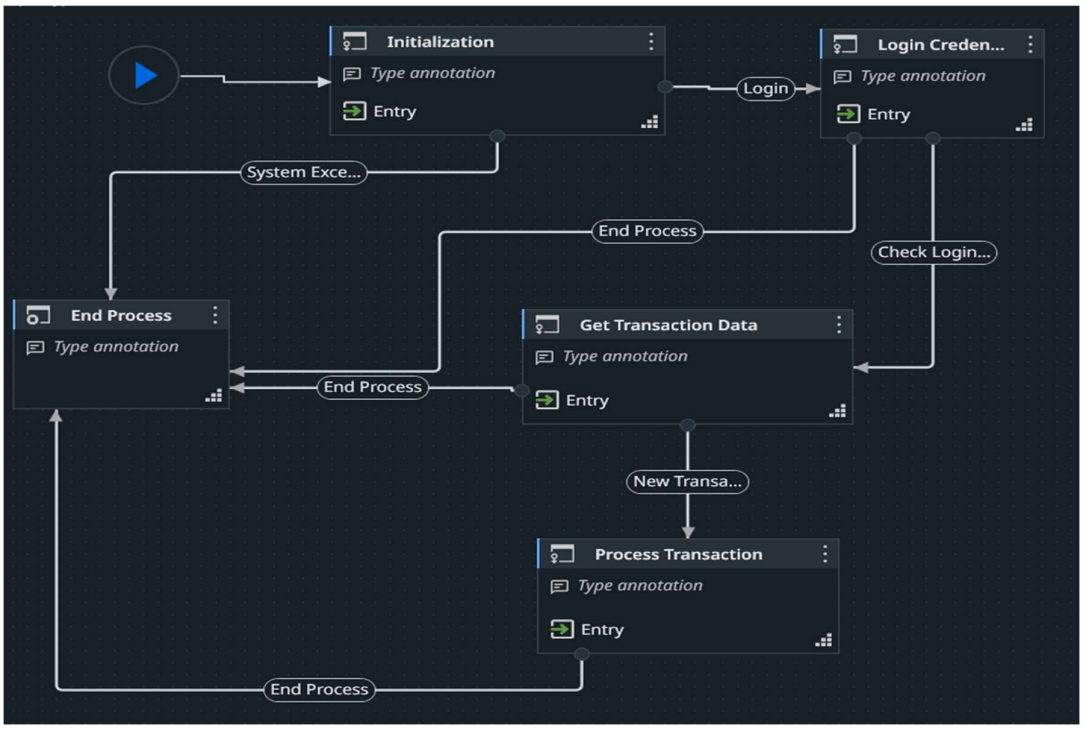
Each team member can be assigned:

- Excel/PPT automation – Harshith
- Email & Process automation – Sahil S Puthran
- RE Framework setup – Nandan Bhat K
- Error handling – Dhanush
- Documentation – Mohammed Aboobacker Cimak
- Documentation-Mohan BJ

4.2 Testing

Test Scenario	Expected Output	Actual Output	Status
Valid Excel file loaded	Data read successfully	Success	Pass
Missing Excel file	Error message shown	Error shown	Pass
Valid email login	IMAP connection established	Success	Pass
Certificate generated for each student	PDF generated	Works as expected	Pass
Wrong PPT template	Proper error message	Displayed	Pass

4.3 Results



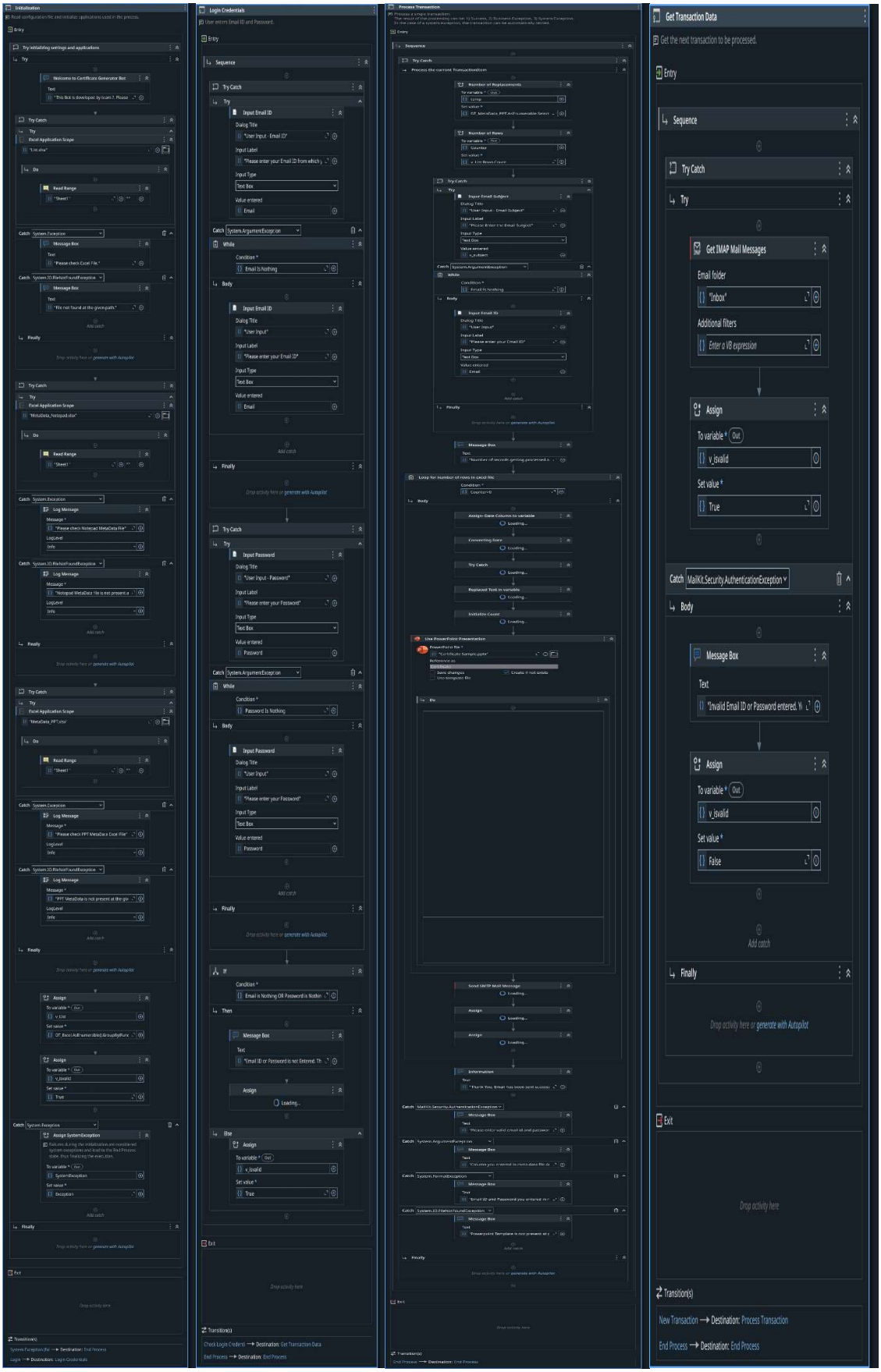
Initialization: Reads Excel and PPT templates, shows welcome popup.

Login Credentials: Inputs email ID and password through dialogs.

Get Transaction Data: Verifies email connection and retrieves student data.

Process Transaction: Generates certificates and emails them.

End Process: Displays completion message and closes all applications.


Initialization
Login Credentials
Process Transaction
Get Transaction Data
Get IMAP Mail Messages
Email Folder
"Inbox"
Additional Filters
Enter a VB expression
Assign
To variable * Out
v_isvalid
Set value *
True
Catch MailKit.Security.AuthenticationException
Body
Message Box
Text
"Invalid Email ID or Password entered. Vi
Assign
To variable * Out
v_isvalid
Set value *
False
Add catch
Finally
Drop activity here or generate with Autopilot
Exit
Drop activity here
Transition(s)
New Transaction → Destination: Process Transaction
End Process → Destination: End Process

Chapter – 5: Conclusion

This project successfully automates the entire certificate generation and distribution process using UiPath. By integrating Excel, PowerPoint, and email services, the workflow eliminates repetitive manual tasks, reduces errors, and saves significant administrative time. The RE Framework-based design ensures robustness and modularity, making the solution reusable for multiple events with minimal changes. The project enabled us to apply automation concepts learned in the course to solve a practical problem faced in educational environments. Overall, the solution proved efficient, scalable, and highly effective.

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