Introduction to
Robotic Process Automation

ASSIGNEMNT SUBMISSION AUTOMATION

220701264
SHARAN KUMAR D
Dr. N. DURAIMURUGAN M.E., Ph.D
Computer Science and Engineering

RAJALAKSHMI
ENGINEERING COLLEGE

Abstract

The Assignment Submission Automation system leverages Robotic Process Automation (RPA) using UiPath to streamline and enhance the process of student assignment submission in an Enterprise Resource Planning (ERP) platform. This project addresses the challenges of manual assignment submission, such as inefficiency, human error, and time consumption, by automating repetitive tasks.

The system integrates Excel as a data source to store student details and assignments, UiPath Robots for data validation and workflow automation, and the ERP system to authenticate and finalize submissions. Key functionalities include reading and validating assignment data from Excel, dynamically submitting assignments to the ERP system, and updating the submission status for real-time tracking.

Need for the Proposed System

ERP System:

Acts as the central repository where students submit their assignments, and data is processed and stored.

User Interaction Interface:

Students provide their details and assignments via a form or portal that the robot processes in real time.

Email Notification System:

Sends automated email updates to students regarding the status of their assignment submissions.

Error Handling and Logging System:

Captures any issues during submission and provides feedback to students or administrators for corrective actions.

ADVANTAGES OF THE PROPOSED SOLUTION

- **Real-Time Notifications:**

Students receive instant email updates about the status of their submissions, ensuring they are informed of successful submissions or required corrective actions without delays.

- **Elimination of Manual Effort:**

Automates repetitive and time-consuming tasks such as data entry, file uploads, and validation, reducing the workload for both students and administrative staff.

- **Direct ERP Integration:**

The solution interacts directly with the ERP system, eliminating the dependency on external data sources like Excel, which simplifies the process and improves efficiency.

- **Enhanced Accuracy and Consistency:**

Validates submissions in real-time, minimizing errors such as incomplete data or incorrect uploads, thereby ensuring accurate record-keeping in the ERP system.

Literature Survey

1.Automation of Student Data Management Systems Using RPA

2.Real-Time Task Automation in Educational ERPs

3. Email Notifications for Workflow Automation

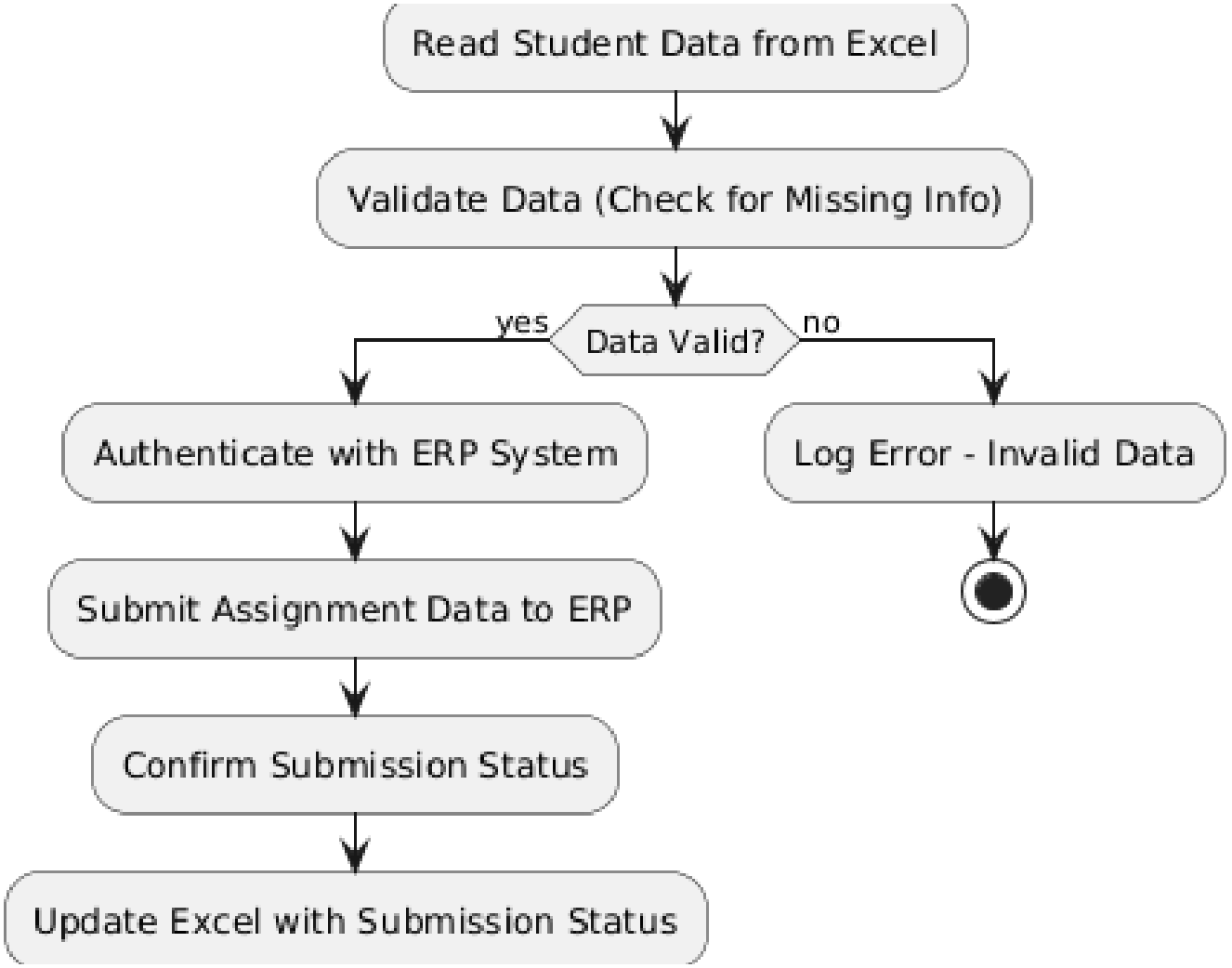
4.Data Validation Using RPA in Educational Systems

5.Error Handling in Automated Educational Systems

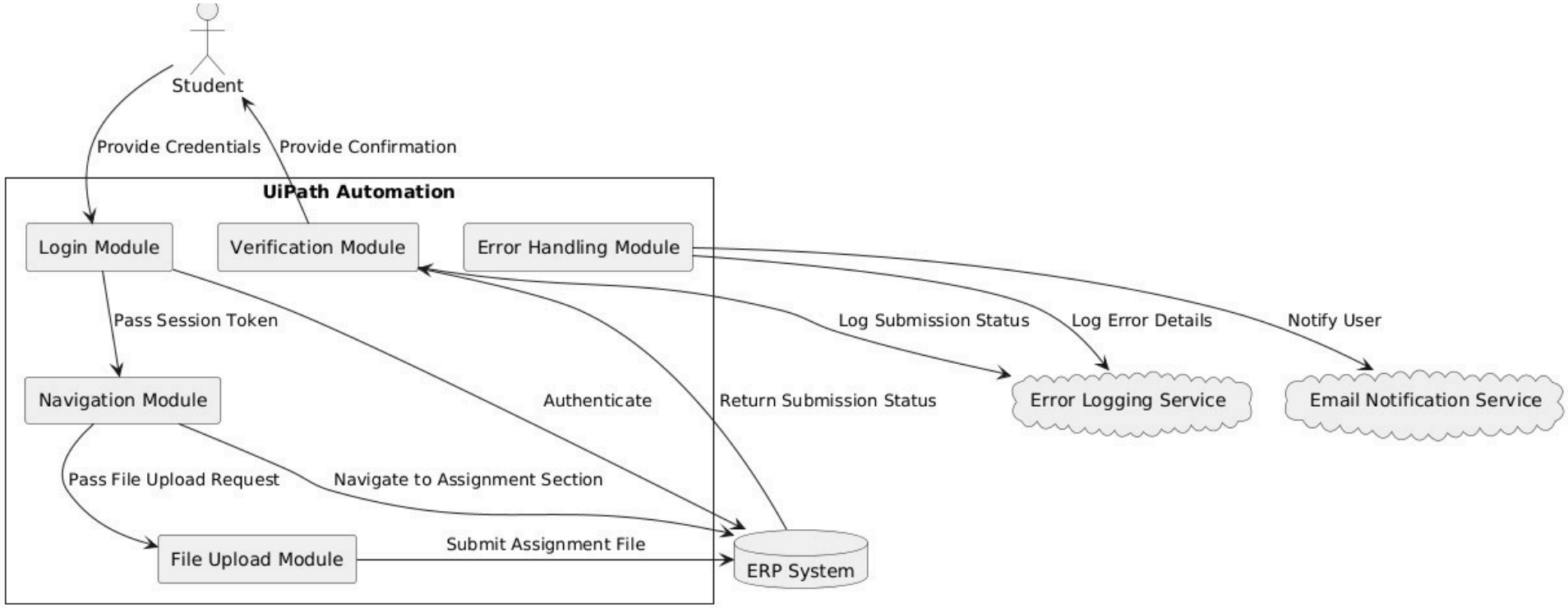
Main Objective

- To automate the process of submitting and tracking student assignments in an ERP system, reducing manual effort and improving operational efficiency.
- To develop an intuitive and user-friendly interface that enables students to upload assignments and receive submission status seamlessly.
- To implement automated email notifications to inform students of successful submissions or errors, enhancing communication and transparency.
- To integrate robust error-handling and logging mechanisms to ensure system reliability and provide insights for troubleshooting and optimization.
- To eliminate dependency on external data sources, such as Excel, by directly interacting with the ERP system for data validation and submission tracking.

FLOW DIAGRAM



ARCHITECTURE DIAGRAM



System Requirements

UiPath Studio: For developing and deploying automation workflows.

ERP System API: To integrate assignment submission with the organization's ERP.

SMTP Email Services: For sending email notifications regarding submission statuses.

Windows 10 or Higher: Operating System for optimal compatibility with UiPath Studio and associated tools.

Functional Description

Module 1: User Input Module

Accepts user input for assignment details such as student name, assignment title, and file upload.

Validates inputs to ensure all required fields are complete and accurate

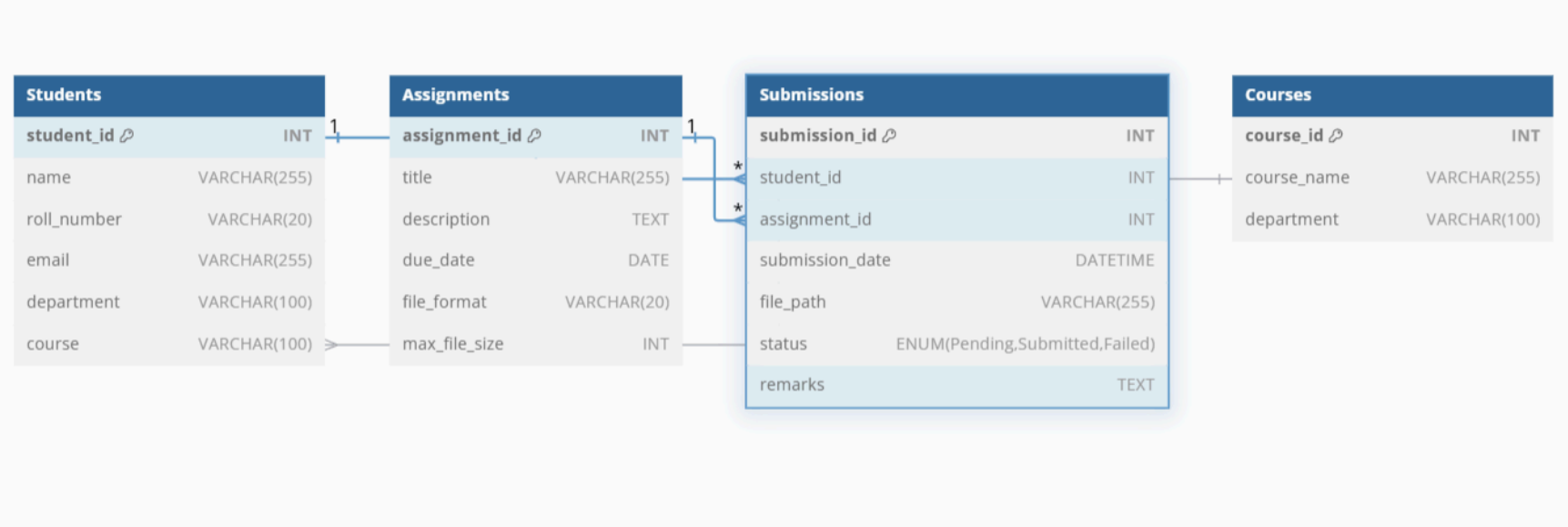
Module 2: Assignment Processing Module

Communicates with the ERP system to ensure proper assignment categorization.

Module 3: Submission Module

Monitors the submission process and handles any errors or retries in case of failure.

Table Design



Implementation

Module 1: Assignment Processing Module

Communicates with the ERP system to ensure proper assignment categorization.

Formats data for seamless submission to the ERP

Module 2: Submission Module

Submits the assignment data to the ERP system via API or direct integration.

Monitors the submission process and handles any errors or retries in case of failure.

Testing

Workflow Accuracy: Ensured that each step, from login to assignment submission and logout, was executed precisely without any deviations.

File Upload Validation: Implemented checks for file size, format, and assignment deadlines to maintain compliance with submission requirements.

Error-Handling Robustness: Simulated errors such as incorrect file formats, missing files, and network interruptions to validate exception handling and ensure proper logging and error notifications.

Smooth Module Interaction: Verified seamless integration between different modules, including login automation, navigation, file upload, and submission confirmation.

Submission Verification: Ensured accurate feedback on whether the assignment submission was successful, including generating confirmation logs.

Conclusions

The project automates assignment submission processes in the ERP system, saving time and minimizing errors. It demonstrates the potential of RPA to improve productivity and streamline academic workflows for students and institutions alike.

The implemented system enhances operational efficiency and reduces dependency on manual intervention, ensuring timely and accurate submissions while paving the way for further advancements in academic process automation.

The project demonstrates the effectiveness of integrating RPA tools with ERP technologies, providing a scalable solution for managing repetitive tasks such as assignment submissions, with potential for expansion to other academic and administrative functions.

Future Enhancements

Support for Multiple ERP Platforms: Expanding the solution to support integration with various ERP systems used by different institutions.

Advanced Submission Tracking: Adding analytics and insights to monitor submission trends, student participation, and on-time completion rates.

Enhanced Error Notifications: Incorporating real-time alerts via email, SMS, or messaging platforms like WhatsApp, Slack, or Microsoft Teams for failed or delayed submissions.

Improved Security Measures: Implementing advanced security features such as two-factor authentication and encryption for sensitive data like login credentials and submitted files.

Customizable Assignment Validation: Providing options to customize validation rules, such as file formats, submission deadlines, and unique requirements for different courses or departments.

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Thank You