



Institute of Technology of Cambodia
Department of Information and Communication Engineering



Library Management System

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Duration : 12 February 2023 – 11 May 2023

Academic Year 2022-2023

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INTRODUCTION

1. INTRODUCTION

1.1 Company Overview

STEM Library is a collection of science, technology, engineering, and mathematics books developed since 1981 to help students, researchers, and lecturers do their research activity.



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1. INTRODUCTION

1.2 Company Service



Place for study



Borrow book



Discussion room



Printing and Copying

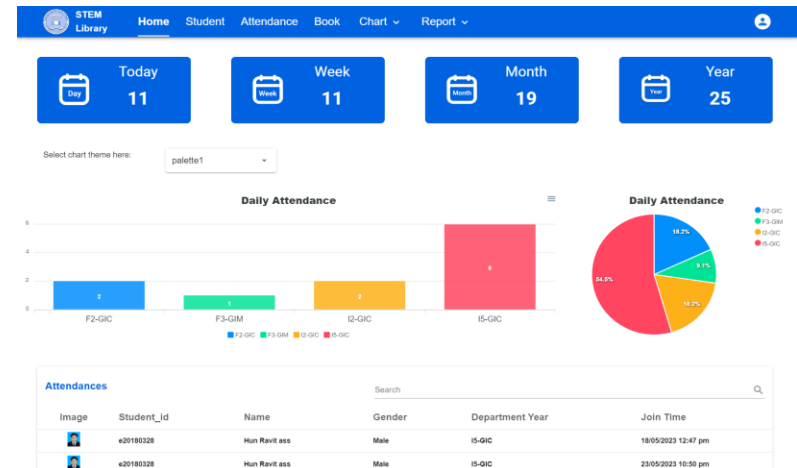


Computer for searching
the internet

1. INTRODUCTION

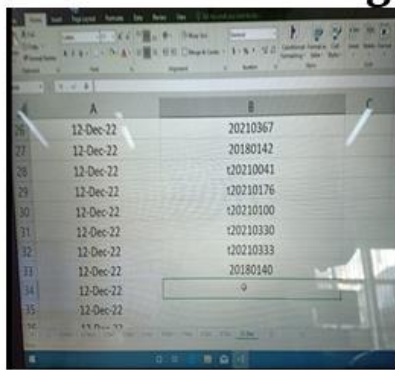
1.3 What is Library Management System?

Library System Management is a website project to digitalize the traditional register attendance in Excel to adapt to the new age of IT evolution. It will be used to register all attendance candidates who join the library and find books.



1. INTRODUCTION

1.4 Problems Overview



STEP 2: MS Excel



The reason that we propose to build this system is:

- Difficult to keep Excel files that students register
- Easy to lose data if someone deletes
- Cannot manage time student register
- Cannot store candidate information and candidate type
- Cannot keep history record

1. INTRODUCTION

1.5 Objectives



STEP 3: Web Application



Build a website application that can provide:

- Manage candidate information
- Book management
- Export report

1. INTRODUCTION

1.6 Project Scope

1 User and access management

- Login and Register
- User Roles
- Access control of each role

3 Book management

- Manage book information
- Manage book location
- Check available

2 Candidate management

- Manage candidate type, department, and department option
- Manage candidate register

4 Report management

- Report of attendance
- Report of payment
- Report as Excel and Bar chart

1. INTRODUCTION

1.7 Planning

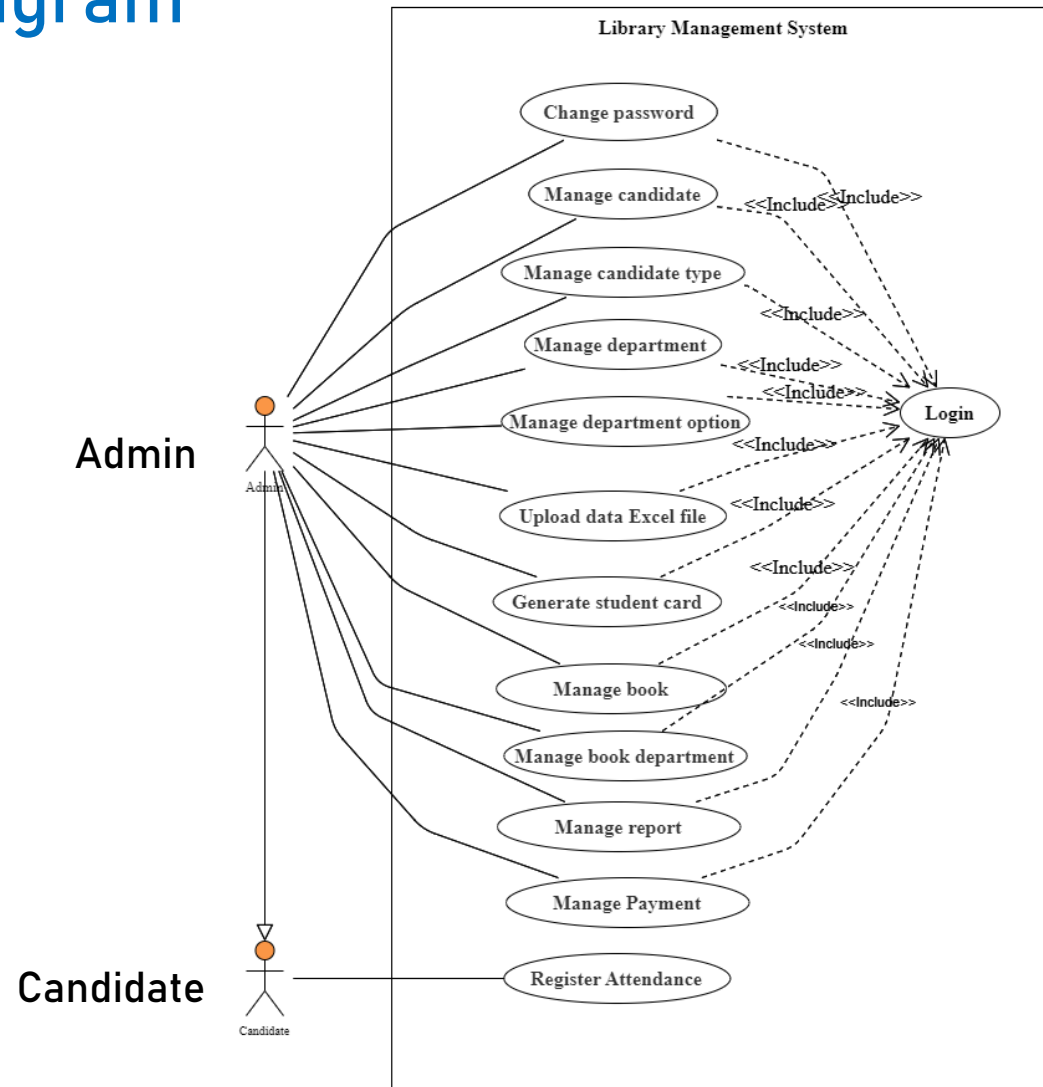
| Tasks | Weeks | | | | | | | | | | | |
|---------------------------|-------|---|---|---|---|---|---|---|---|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Get the requirement | | | | | | | | | | | | |
| Define the project scope | | | | | | | | | | | | |
| Wireframing and prototype | | | | | | | | | | | | |
| Implement | | | | | | | | | | | | |
| Testing and Bug Fix | | | | | | | | | | | | |
| Prepare for deployment | | | | | | | | | | | | |



ANALYSIS AND DESIGN

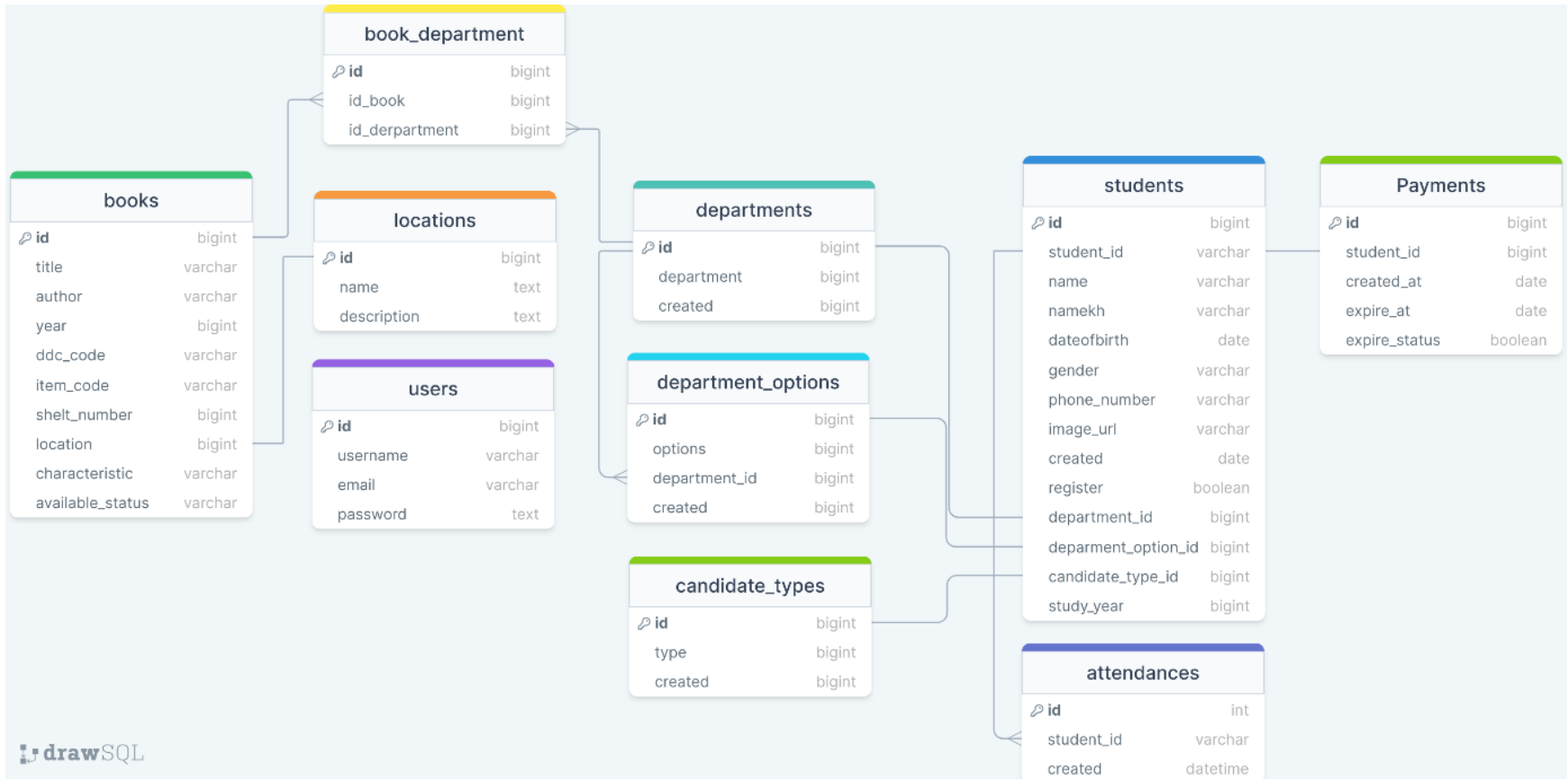
2. ANALYSIS AND DESIGN

2.1 Use Case Diagram



2. ANALYSIS AND DESIGN

2.2 Database Schema



2. ANALYSIS AND DESIGN

2.3 Choice of Technologies

Technologies



Tools



Database



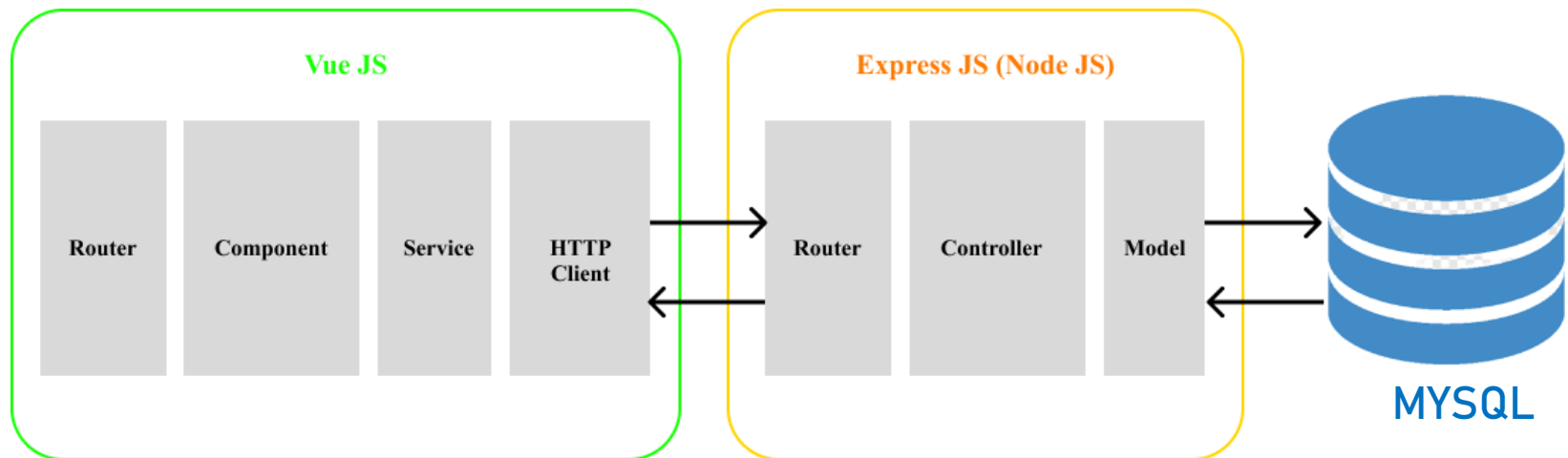
2. ANALYSIS AND DESIGN

2.4 Physical Architecture



2. ANALYSIS AND DESIGN

2.5 Logical Architecture



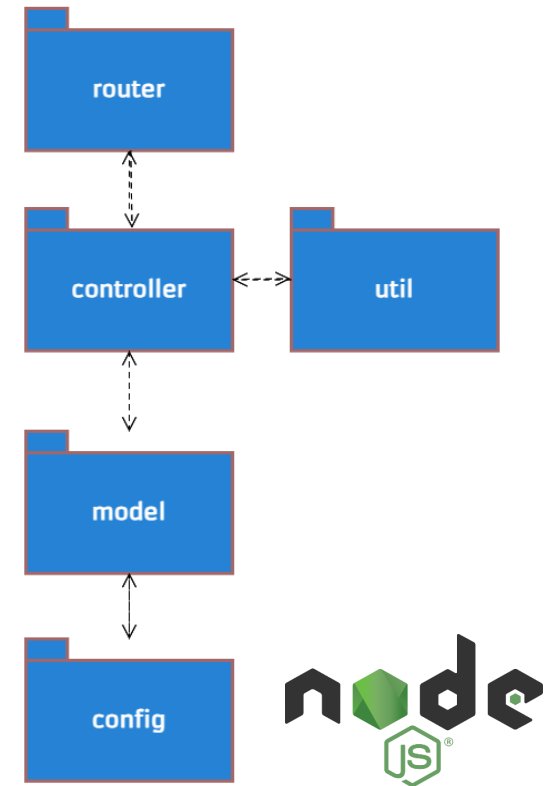


IMPLEMENTATION

3. IMPLEMENTATION

3.1 Project Structure

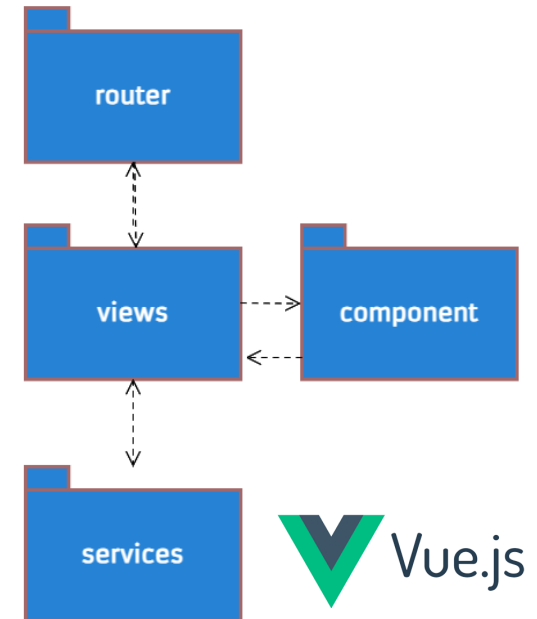
- config: store configurations such as database configuration
- controller: store logically for handling incoming requests
- uploads: store all file images and Excel that upload from the user
- utils: store helper functions that can be used across the application



3. IMPLEMENTATION

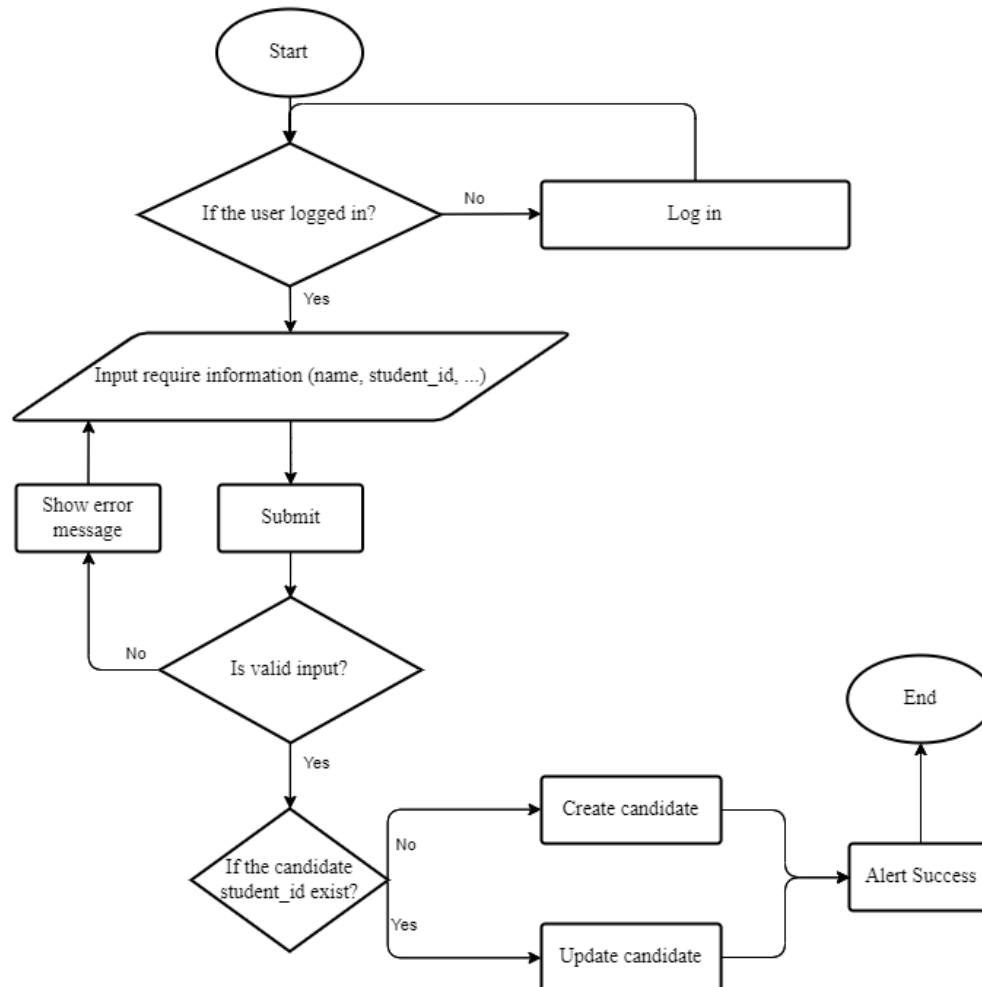
3.1 Project Structure

- component: store component that is re-used multiple time
- assets: store images and third-party files
- service: store service for communicating with API
- views: store all pages design
- router: store the Vue router configuration file and path



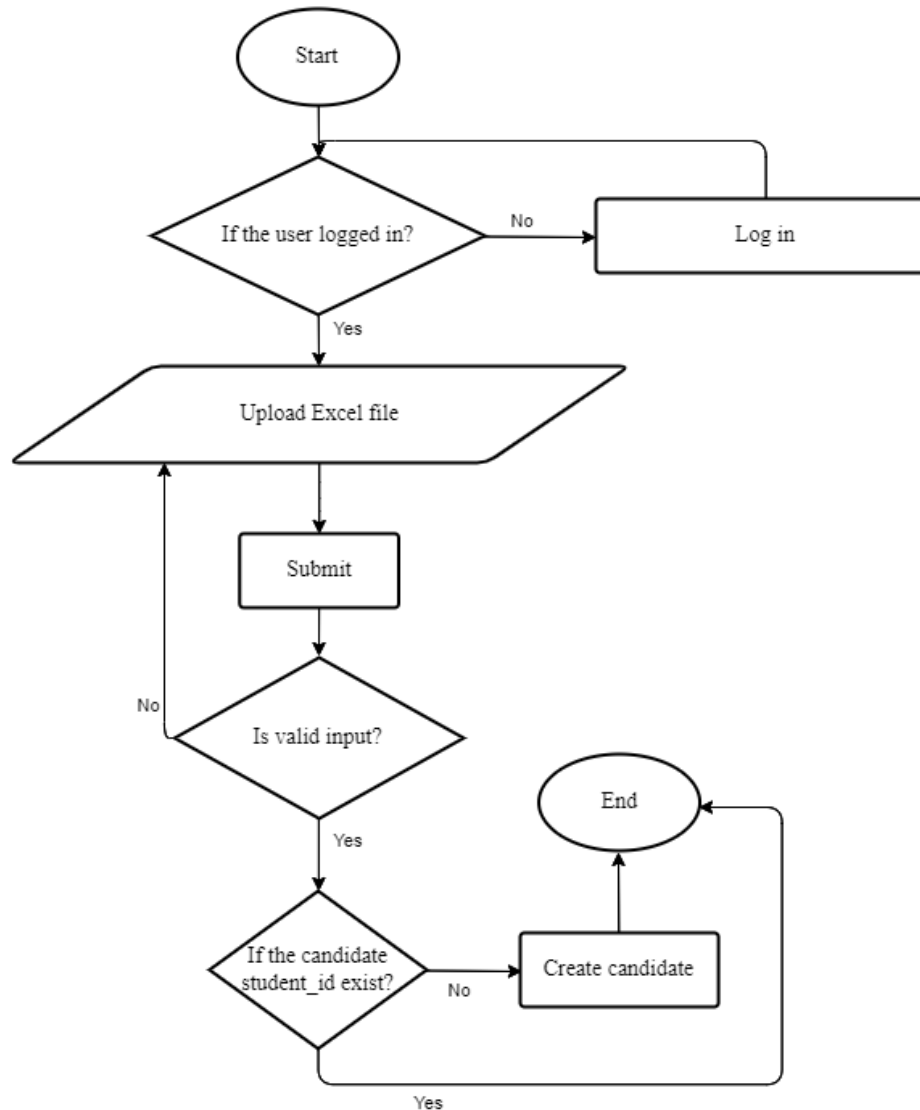
3. IMPLEMENTATION

3.2 Flowchart for create new candidate



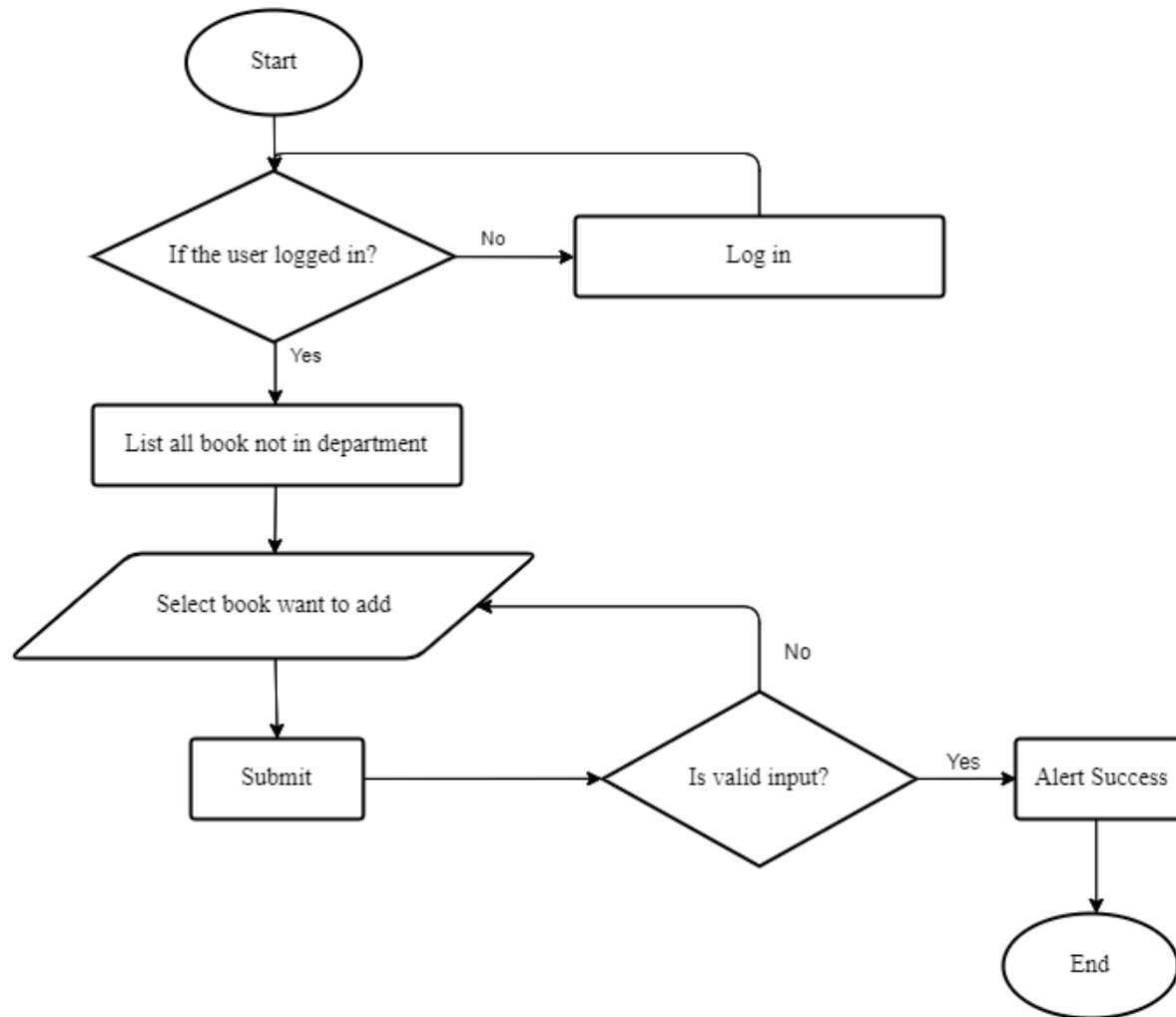
3. IMPLEMENTATION

3.3 Flowchart of upload Excel file (create candidate)



3. IMPLEMENTATION

3.4 Flowchart for add book to department





CONCLUSION

4. CONCLUSION

Result

| Task | Completed | Uncompleted |
|---------------------------------|-----------|-------------|
| Login authentication | ✓ | |
| Register attendance | ✓ | |
| CRUD candidate | ✓ | |
| CRUD candidate type | ✓ | |
| CRUD department | ✓ | |
| CRUD department option | ✓ | |
| CRUD book | ✓ | |
| CRUD book location | ✓ | |
| Add the book to the department | ✓ | |
| Generate report excel | ✓ | |
| Generate report bar chart | ✓ | |
| Upload candidate by Excel file | ✓ | |
| Change password | ✓ | |
| Generate an image student card | ✓ | |
| Generate image top ten register | ✓ | |
| Apply Open Policy Agent | | ✗ |

4. CONCLUSION

Difficulties

- Dealing with a new library
- Learning management time
- More requirements in the project
- Manage time for each task

Experiences

- Learn new useful libraries
- Understand how to work with the client
- Experience using a different framework

4. CONCLUSION

Perspective

- Improve responsive website
- Improve code structure
- Improve performance code
- Add new useful feature



DEMONSTRATION





THANK YOU
&
QUESTIONS

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