Library Management System

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Company Advisor : Mr. SOK Kimheng

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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Duration : 12th February – 11th May 2023

1. INTRODUCTION

1.2 Company Service

Place for study
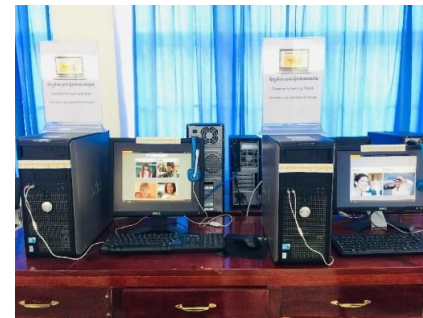

Borrow book

Discussion room

Printing and Copying

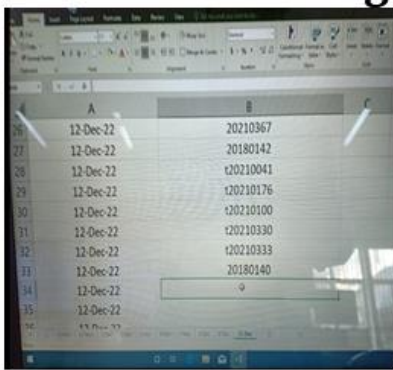
Computer for

searching the internet

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

1.5 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

2 Candidate management

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

3 Book management

- Manage book information
- Manage book location
- Check available

4 Report management

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

1. INTRODUCTION

1.7 Planning

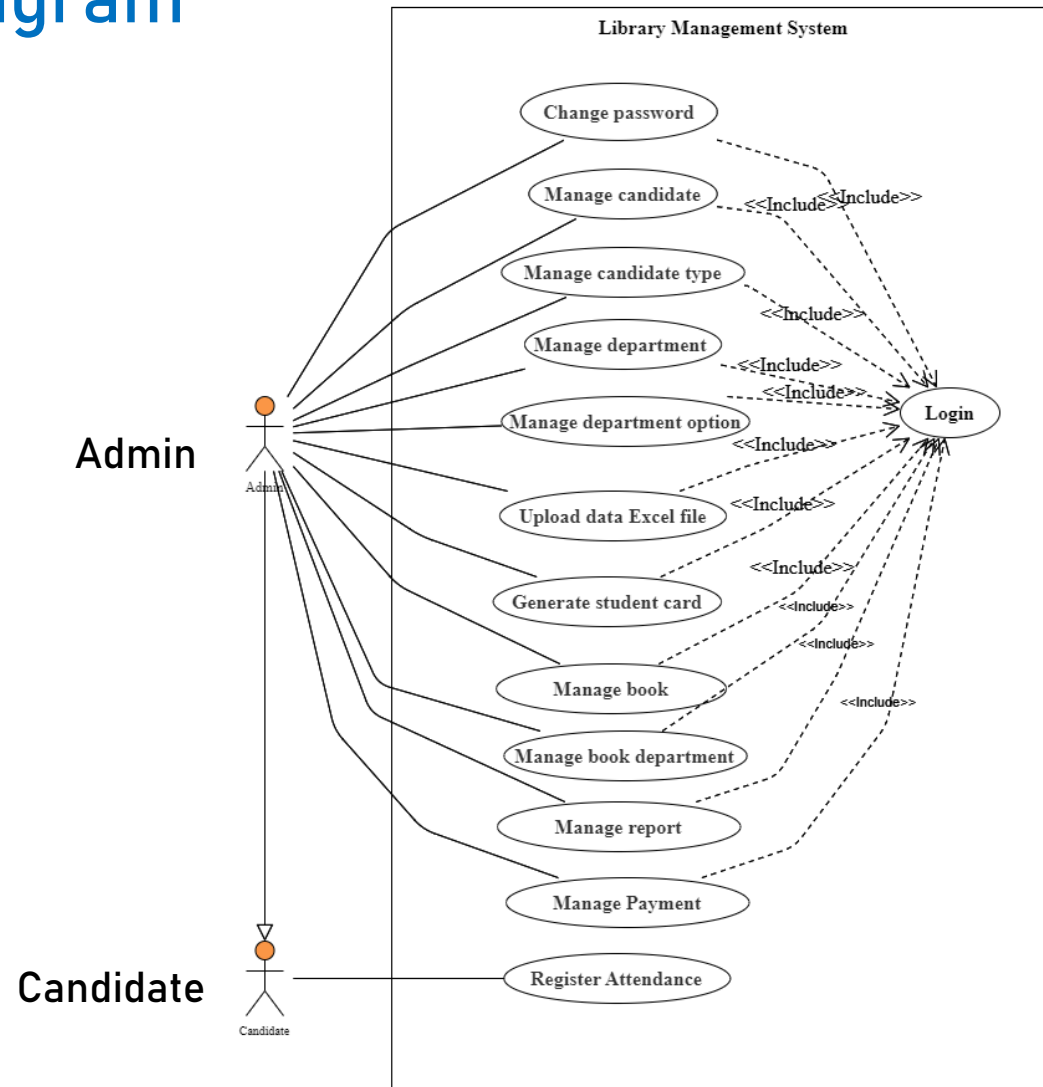| Tasks	Weeks											
	1	2	3	4	5	6	7	8	9	10	11	12
Get the requirement	■											
Define the project scope	■											
Wireframing and prototype		■	■									
Implement				■	■	■	■	■	■			
Testing and Bug Fix										■	■	
Prepare for deployment												■

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ANALYSIS AND DESIGN

2.1 Use Case Diagram

2.2 Database Schema

2.3 Choice of Technologies

➢ **Technologies**

➢ **Tools**

➢ **Database**

2.4 Physical Architecture

Client   Request → Respond ←   Web Server   Request → Respond ←   Database Server(MYSQL)
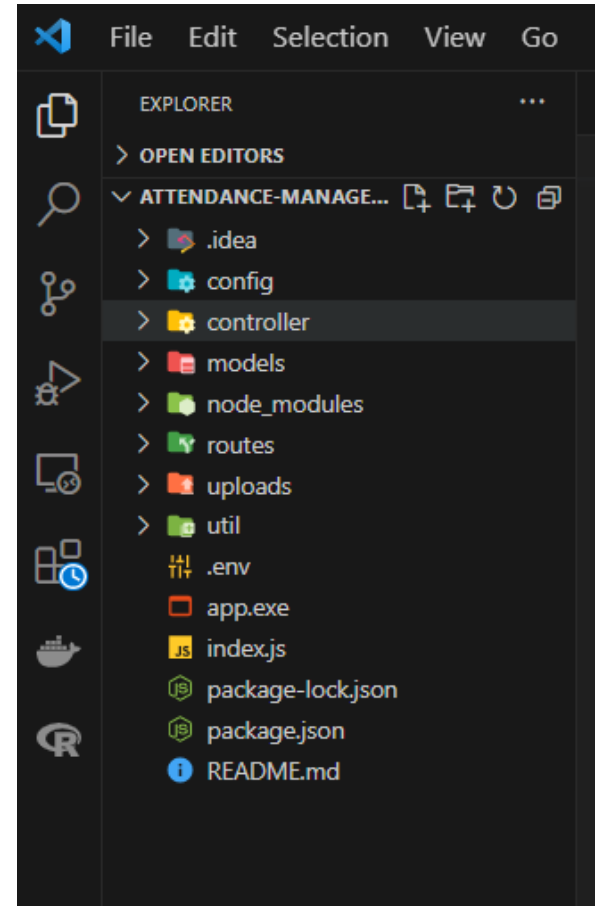
2.5 Logical Architecture
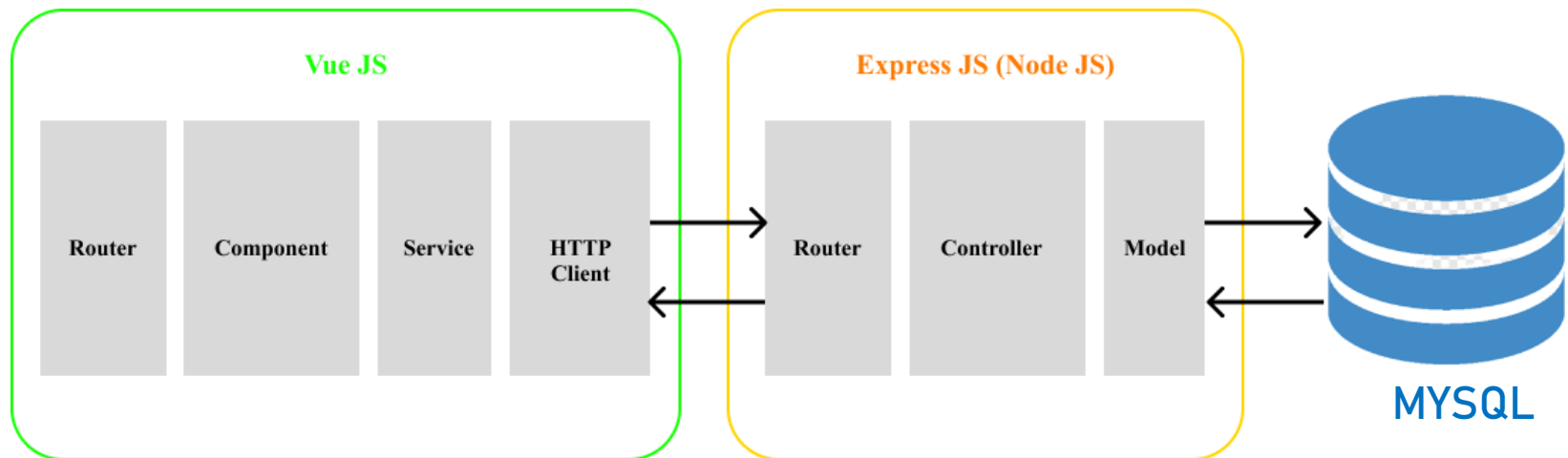
IMPLEMENTATION
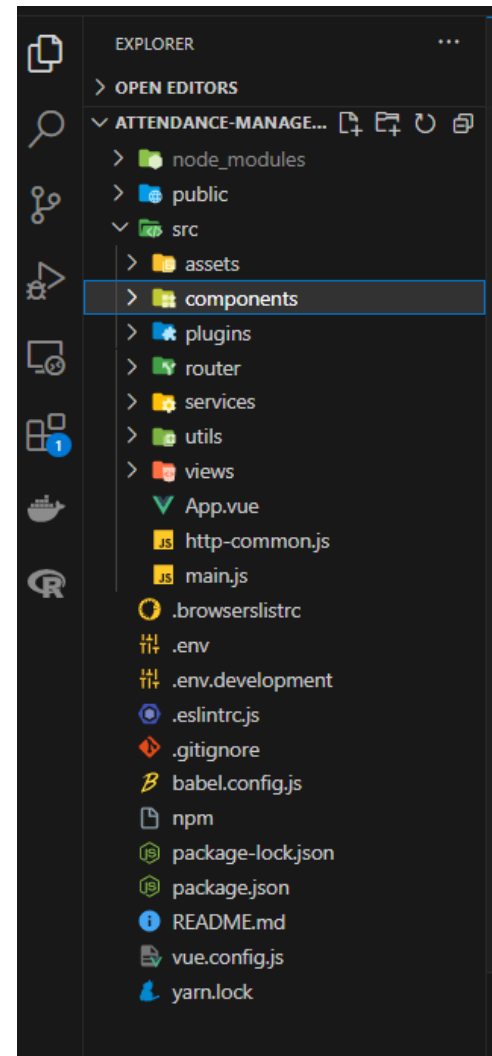
3. IMPLEMENTATION

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**

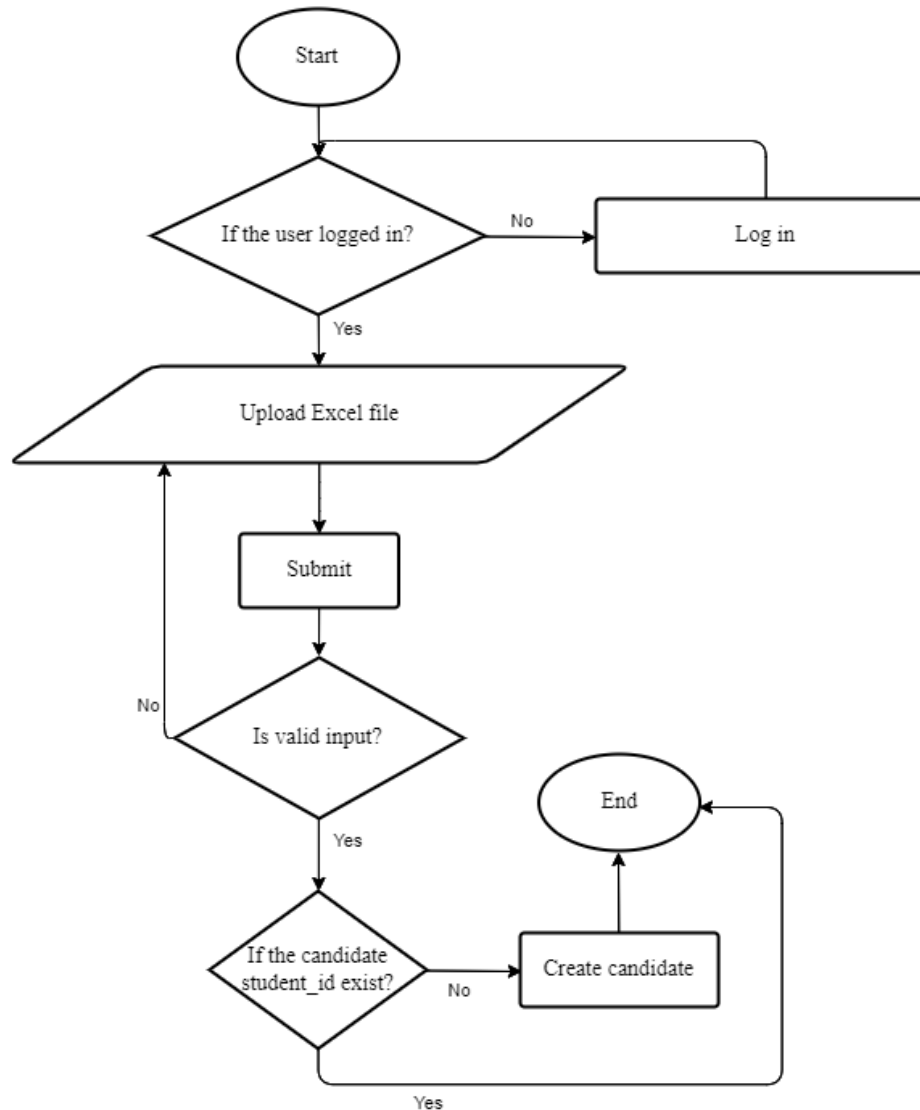- **router: store the Vue router configuration file and path**
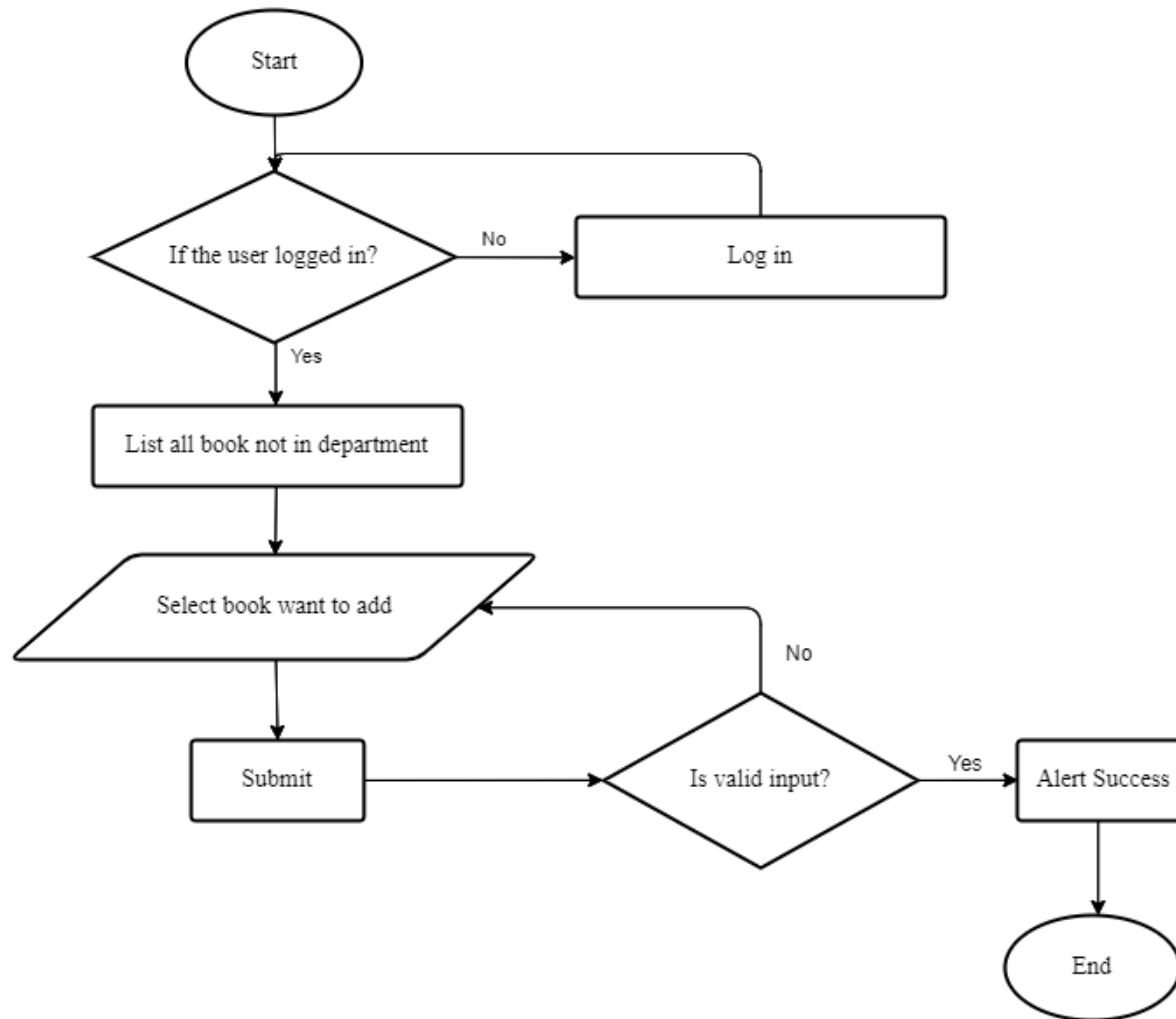
3.2 Flowchart for create new candidate
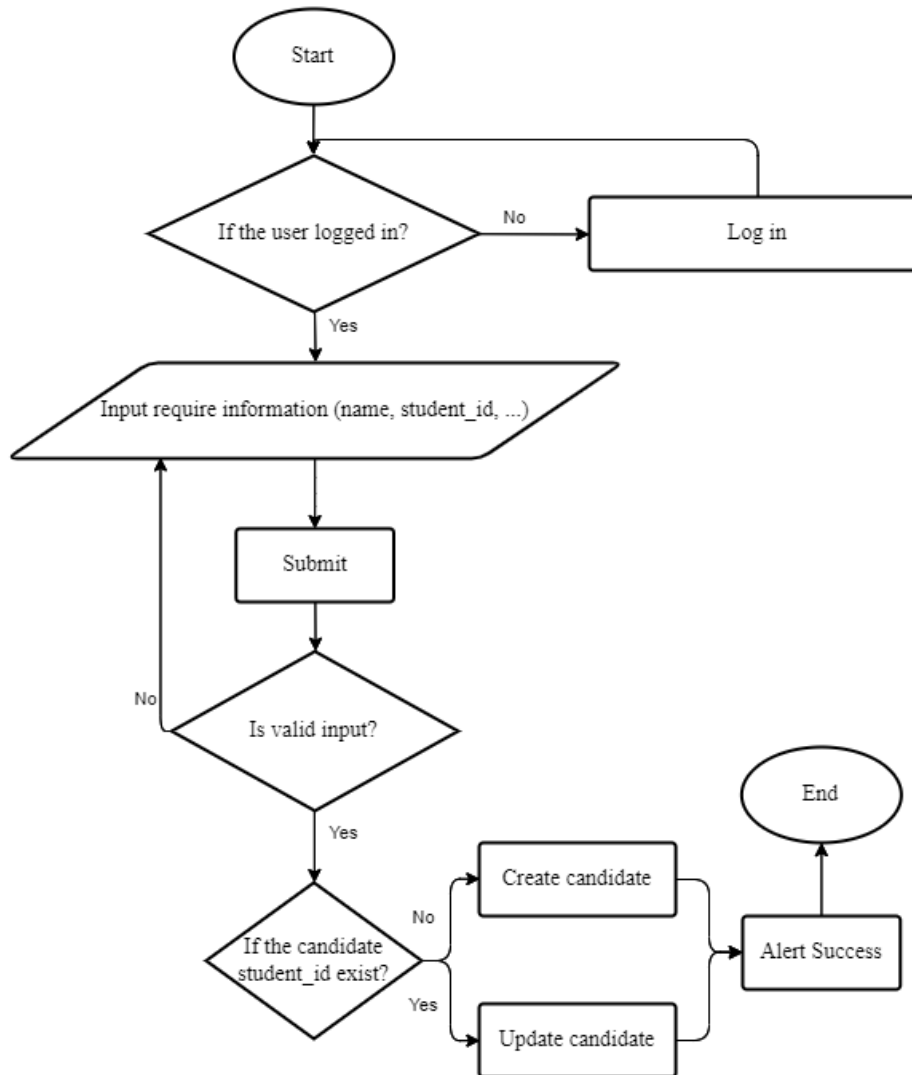
3.3 Flowchart of upload Excel file (create candidate)

3.4 Flowchart for add book to department

4

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 to manage time

- More requirements in the project

- Manage time for each task

Experiences

- Learn new technology

- Better manage time

- Project management and process

- Understand how to work with the client

4. CONCLUSION

Perspective

- **Improve responsive website**

- **Improve code structure**

- **Improve performance code**

- **Complete Access control (Open Policy Agent)**

5

DEMONSTRATION

THANK YOU
&
QUESTIONS

REFERENCE

- Introduction to Node JS. (n.d.). Introduction to Node JS. Retrieved June 10, 2023, from   https://nodejs.org/en

- Introduction to HTML. (n.d.). Introduction to HTML. Retrieved June 10, 2023, from https://www.w3schools.com/html/html_intro.asp

- CSS Introduction. (n.d.). Retrieved June 10, 2023, from https://www.w3schools.com/css/css_intro.asp

- JavaScript.com. (n.d.). Retrieved June 10, 2023, from https://www.javascript.com/

- VueJS.org. (n.d.). Retrieved June 10, 2023, from https://vuejs.org/

- Vuetifyjs.com. (n.d.). Retrieved June 10, 2023, from https://vuetifyjs.com/en/getting-started/installation/

- Mysql.com. (n.d.). Retrieved June 10, 2023, from https://www.mysql.com/

- Github.com. (n.d.). Retrieved June 10, 2023, from https://docs.github.com/en

- Postman API Platform | Sign Up for Free. (n.d.). Postman. Retrieved June 10, 2023, from https://www.postman.com/

- Apachefriends.com. (n.d.). Xampp. Retrieved June 10, 2023, from https://www.apachefriends.org/index.html

- Heidisql.com. (n.d.). HeidiSQL. Retrieved June 10, 2023, from https://www.heidisql.com/

- IntelliJ IDEA: The Capable & Ergonomic Java IDE by JetBrains. (n.d.). JetBrains. Retrieved June 10, 2023, from https://www.jetbrains.com/idea/