Role-Based Access Control(RBAC)

Introduction

This project is to be improving the existing Visual Schedule Builder website in U of R into a better user-friendly design.

Scope Implementation

The project is mainly focused on the students, which is to give assistance for them to organize and plan out the course timetable wisely without the waste of time. The making a website to an interactive course schedule builder, with the advising system of the courses to take, and the course detail visualization that can help the students to layout the desired course schedule with nicer time arrangement. In addition, it can benefit the advisor with their work, to save up time on the unnecessary things and concentrate more on the important ones.

Resources

The use of **AWS EC2** for this project, it stands for Amazon Elastic Compute Cloud which provides scalable computing capacity in the Amazon Web Services Cloud. As it is extendable that can easily change the instance type to achieve faster computing or greater storage. And, the changing of the instance type will not damage any lines of code.

The project will be working with the several computer coding languages, in order to build up the website;

- Coding Languages:
    - **HTML:** the standard markup language that to set out the web pages
    - **CSS:** the styling design of the website pages
    - **JavaScript:** the programming language for the website's functionality
    - **PHP:** a server scripting language which is to make the web pages into dynamic and interactive for the users
    - **MySQL:** the domain-specific language that to build up the database tables and to managing the data in a relational database management system
    - **JSON:** a text format that to do the work of storing and exchanging the data for the website
    - **Python:** a programming language that has a large number of third-party libraries, to do the data parsing as to get text from the websites and store in JSON, and also to be use as the tester for the web pages
- **Jenkins:** the pipeline/server automation, which to make easier for developers to integrate changes to the project and simply to obtain a fresh build for users, in order to for a faster development of the new products and to maintain the existing deployments with no trouble
- **MariaDB:** be supported with MySQL, that the data storage is more flexible than local JSON files which to have more complex queries needed to be use for the website

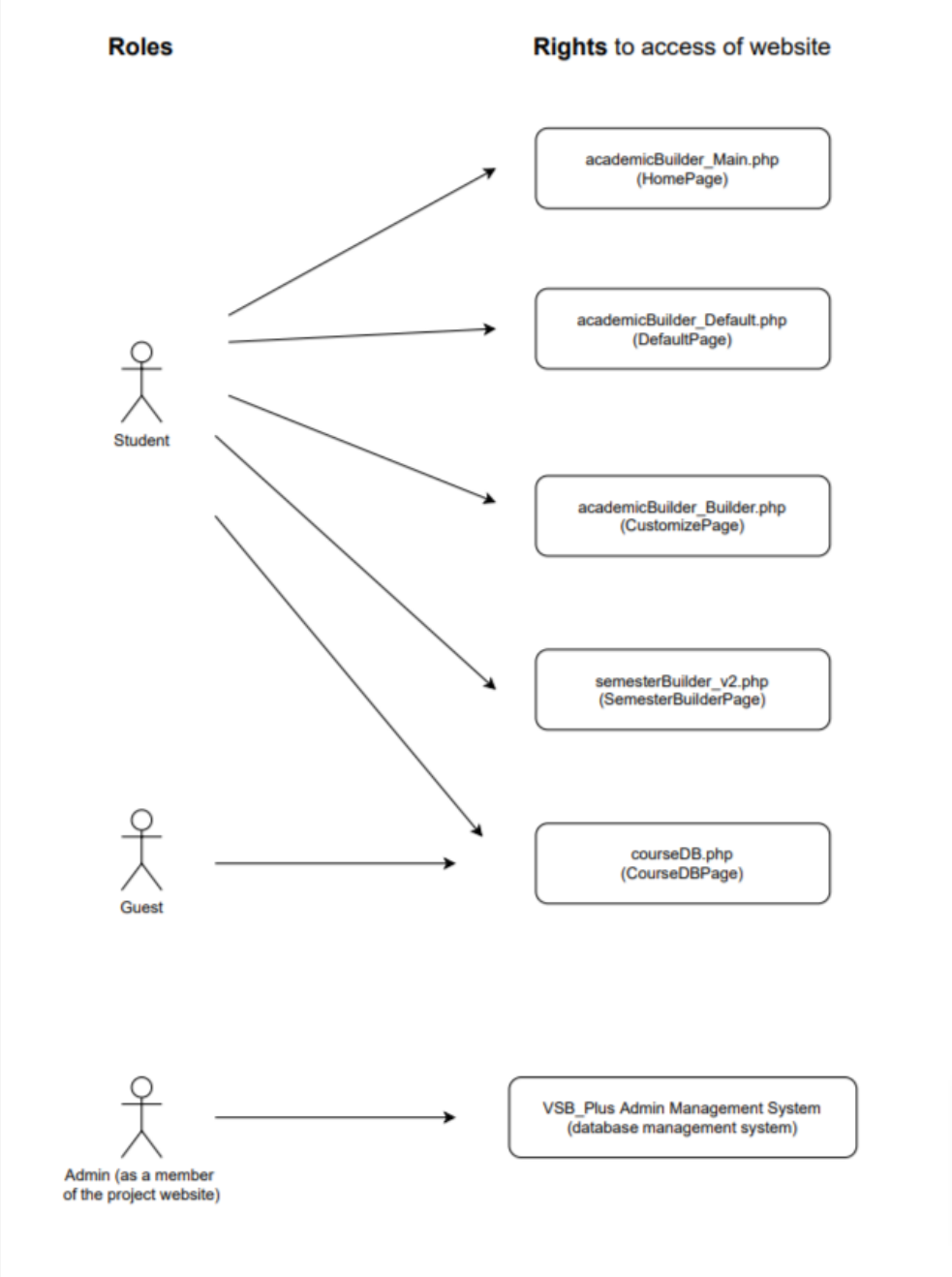
The data for this project will be using the make up data from the group members. The use of a database management system for this project is a free software tool that is written in PHP, named **phpMyadmin**. By building the SQL database inside the phpMyadmin, and then to use JSON to fetch the data for the website.

As well, some open sources to study and to be use in our project;

- Open Sources:
    - **Fullcalendar:** an open-source JavaScript API to show the weekly/monthly time of the course on the calendar of our website
    - **Chart.js:** an open-source JavaScript chart library that to sketch out the diagrams or charts to display the classes performance of the student
    - **ThinkPHP:** a simple PHP development web framework which is to help us to develop an admin management system in less time

All files of the project will be uploaded and communicated through **GitHub**, which is the popular open source community to be tracking and managing the changes of the source code.

Roles/Rights



Notes:

Students who have registered in the U of R, are using their student ID number to login to our website, and will have full access in all of the web pages.

As for the Guest, they can only access the CourseDB page to search up for the course information that is offered in the U of R.

With the Admin users, who are members of the project website, they have access to the website's data, to see the data information of the students.

Policy

For this project website, it is not convenient to connect it with other databases, it will need modification on the controller files.