

Student Portal

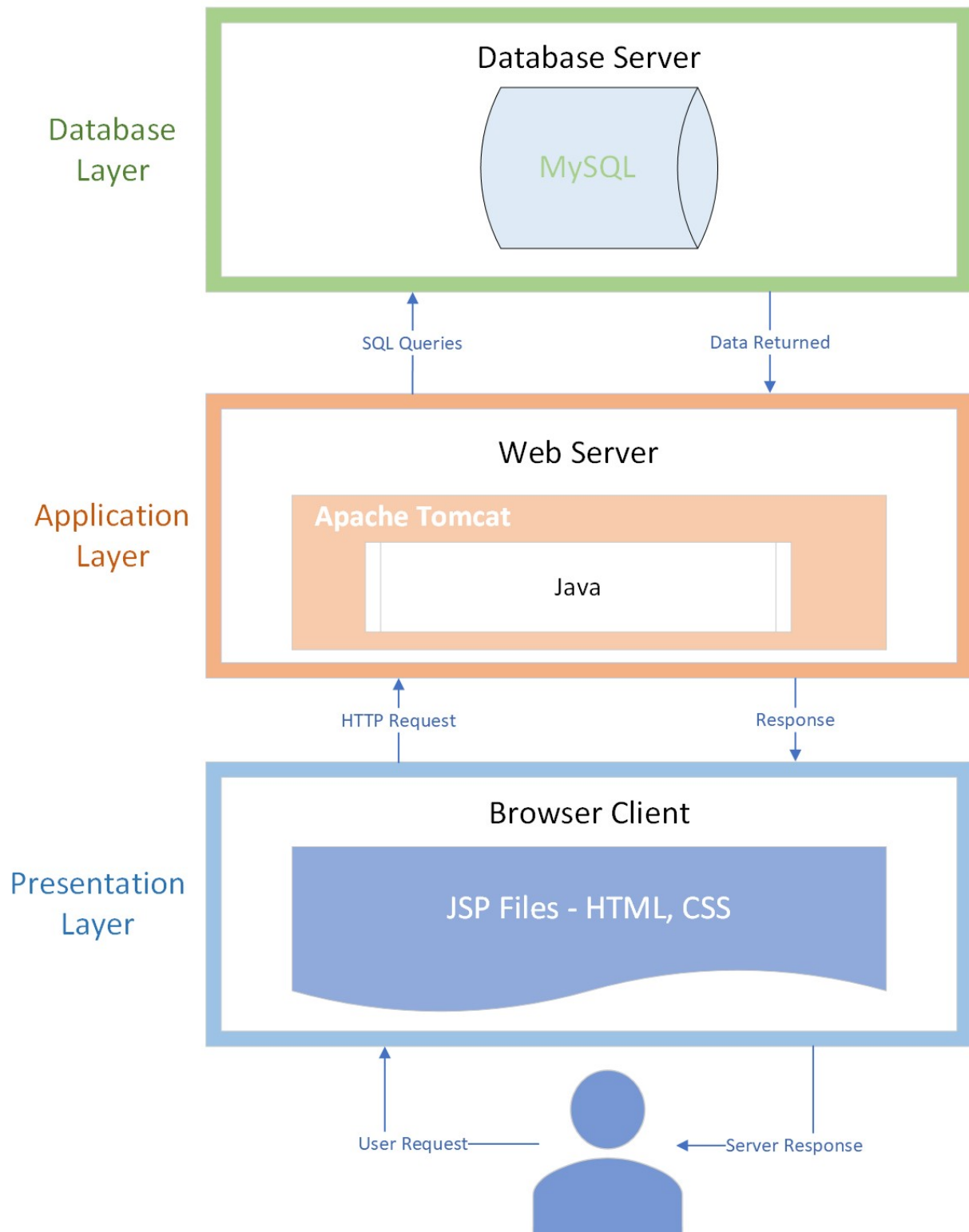
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Team 5

**Project Description:**

This project will be a college database application that will manage campus activities. The primary goal will be to allow students to manage their classes and records. Students will be able to filter classes according to their needs. They can choose to sign up and enroll in classes, drop classes, or simply see the class description. They can use this information to help plan out their college roadmap for their desired degree. The classes they look up will be input by the administrators, who have special admin account privileges enabling them to add classes to the list of available classes, specify their details (department, course number, CRN, time, instructor, mode, etc) as well as remove them. The Graphical User Interface (GUI) will be simple, elegant, and straightforward to navigate providing the students and admins alike with an intuitive interface with as few distractions as possible. The motivation for this project is to make a modern, high-quality management system that solves the pain points and limitations of current management systems and reduces costs for universities and community colleges alike. The stakeholders for this project will be the students who will manage their class schedules, universities that want to upgrade their current systems, Dr. Wu as the class instructor, and Mario, Roman, and Youhao as developers of the system. The application domain is the education and academic sector as the system aims to simplify college class management. Similar to the motivation, the goal of the project is to provide a hassle-free experience for students and universities alike to reduce the time overhead, improve user experience, and avoid errors and mistakes.

## System Environment:



**Hardware/Software:**

Random Laptops running Windows 10, MySQL Workbench 8.0 CE, Spring Boot, VSCode

**HTTP Server:**

Apache Tomcat 9.0.64

**RDBMS:**

MySQL Server 8.0.29

**Languages:**

Java, SQL, HTML, CSS, Javascript

**Functional Requirements:**

This application is designed to be used by different users: Administrators, Instructors, and primarily Students. Administrators can add/remove other users and add/remove/modify classes. Instructors can submit grades for students in their class as well as drop them. Finally, students are able to search for classes based on what they still need for their major or by department, as well as add and drop classes for themselves.

**Functions:**

Create User:

- Administrators will be able to add, modify, and remove other users.
- Administrators can only add other Administrators.

Login:

- Administrators, students, and instructors will have to login to be able to securely access their account.

Modify Profile:

- Students and instructors will be able to make changes to their profile and contact information.

Add Class:

- Administrators will be able to add classes to the database.
- The system will check to make sure that:
  - There are no duplicate classes added.
  - An instructor is not teaching 2 classes at the same time.

Modify Class:

- Administrators will also be able to make changes to existing classes.
- Same checks as Add Class

#### Remove Class:

- Administrators can remove any classes

#### Find Classes:

- Students will be able to search the list of available classes
- Students will be able to filter the class search results by:
  - Classes they need for their major
  - Classes by department

#### Save Classes

- After a student finds a class they want, they can save that class into a “shopping basket” for later registration.
- Students can add or remove classes in this basket.

#### Display Class Information

- A student will be able to select a class to get detailed information about a class after using the “Find Classes” function.
- The class display will open in a new tab or popup to avoid having to find classes all over again.

#### (Student) Register for Classes:

- Students can add classes by CRN or a list of classes from “Save Classes”
- System makes sure there are no conflicts between classes and that all prerequisites have been met by the student.

#### Drop Classes:

- Administrators and Instructors are able to drop students from their class (in accordance with university policy)
- Students can drop classes before a certain date
  - Includes ‘W’ and refund dates

#### (Instructor) Submit Grades:

- Instructors have the ability to submit grades for each student in their class.

#### Display Class Schedule

- Students and Instructors will be able to see a list of their current classes for the semester.

#### Timeout Reminder:

- If the system detects that the user is inactive for a period of time, it will display a message asking if they are still active. If the user does not respond, they will be logged out to save system memory.
- This will not apply to administrators.

## **Non-Functional Issues:**

### Graphical User Interface:

The GUI will be a relatively simple HTML webpage with clearly defined links to college related activities. The actual links shown are decided by the user's status as an Administrator/Student/Instructor.

The class search page will be a form that accepts input for searches based on CRN, Department, Dates, etc. The result of these searches will be presented in a simple table of classes that you can click to get additional information about the class. Unlike the current SJSU system, you will be able to return to your search results after seeing the class information without having to redo the search. The results page will also allow you to save classes that you want to register for.

Administrators will have access to static class and user creation forms. They will also have pages for the managing and removal of classes and users. Finally, they will also be able to drop students from classes.

Instructors will have a form allowing them to submit final grades and another form allowing them to see students enrolled in their classes and drop them.

### Security:

All users of the application will have to use a unique ID and a password that follows certain rules. The password must contain at least 8 characters with at least 1 lowercase letter, 1 uppercase letter, and 1 special character. This is done for security as well as privacy. User account passwords will also be stored as salted hashes to prevent attackers from gaining access to user accounts if the password table was broken into. User's personal information will be stored in encrypted form in the database.

### Access Control:

Users are divided into Administrators/Instructors/Students, each has access to different actions.

- Administrators can do everything from creating users to modifying classes. However, Administrators cannot remove other Administrators.
- Instructors can submit grades for students in their classes as well as drop them from their classes. Instructors cannot add, drop, or save classes.
- Students have the ability to add classes, drop classes, and save classes.