System Design Document

Promedio

Designed by: Tegh, Preyansh, Gabriel, Alejandro, Maaz, Armando

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CRC Cards

FRONTEND

Class Name: All Courses Page
Parent Class (If Any): Semesters (?), Navbar
Sub Class (If Any):
Responsibilities / Collaborators: - Displays all courses available to the user, irrelevant of semester - Allows the user to add a new course **Collaborators:** Tegh Mehta, Maaz Hashmi

Class Name: All Semesters Page
Parent Class (If Any): Home Page, Navbar
Sub Class (If Any): Semester Page
Responsibilities / Collaborators: - Displays all available semesters to the user - Allows user to add/edit semesters **Collaborators:** Tegh Mehta, Maaz Hashmi

Class Name: App Page
Parent Class (If Any):
Sub Class (If Any): All pages (Home, Login, Signup, Welcome)
Responsibilities / Collaborators: - Is the main entry point for the router of the app - Controls the logged in state (whether the user in logged in) - Navigates to home page if logged in, welcome page if not **Collaborators:** Tegh Mehta, Maaz Hashmi

Class Name: Course Page
Parent Class (If Any): Semester Page
Sub Class (If Any):

Responsibilities / Collaborators:
- Displays a course's information to the user, including the categories attached to it
- Allows the user to add, edit or delete categories related to the course
- Allows the user to edit or delete the course

Collaborators: Tegh Mehta, Maaz Hashmi

Class Name: GPA

Parent Class (If Any): App page

Sub Class (If Any):

Responsibilities / Collaborators:
- This is the page that allows calculation of GPA for a subset of courses
- User can select use the checkboxes to select the courses required for the computation'
- It's part of the core functionality of the application needed to give the user choices over the computations.

Collaborators: Tegh Mehta, Maaz Hashmi

Class Name: Home page

Parent Class (If Any): App Page

Sub Class (If Any):

Responsibilities / Collaborators:
- Main entry point for logged in users
- All main features will go here or be routed from here

Collaborators: Tegh Mehta, Maaz Hashmi

Class Name: Login Page

Parent Class (If Any): App Page

Sub Class (If Any):

Responsibilities / Collaborators:
- This is the page where a user can input their email and password into the form and login
- Makes a request to the backend
- Controls form input
- Tells its parent component if a login was successful or not, and the user is navigated based on that.

Collaborators: Tegh Mehta, Maaz Hashmi

Class Name: Semester Page
Parent Class (If Any): All Semesters Page
Sub Class (If Any): Course Page
Responsibilities / Collaborators: - Displays a semester's information to the user, including the courses attached to it - Allows the user to add a new course - Allows the user to edit/delete the semester **Collaborators:** Tegh Mehta, Maaz Hashmi

Class Name: Signup Page
Parent Class (If Any): App Page
Sub Class (If Any):
Responsibilities / Collaborators: - A user can input their name, gpa, email, password and create an account - Makes a request to the backend - Controls form input for these fields - Tells parent component if the signup was successful or not, and the user is navigated based on that. **Collaborators:** Tegh Mehta, Maaz Hashmi

Class Name: User
Parent Class (If Any): App page
Sub Class (If Any):
Responsibilities / Collaborators: - This is the page that allows the user to edit its personal details - User can update their email, or name and save the changes **Collaborators:** Tegh Mehta, Maaz Hashmi

Class Name: Welcome
Parent Class (If Any): App page
Sub Class (If Any):
Responsibilities / Collaborators:

- This is the main landing page for our application when a user is logged out
- It contains imagery, quick links to login or signup, and eventually relevant copy.
- It is meant to be a brief showcase of our app.

Collaborators: Tegh Mehta, Maaz Hashmi

BACKEND

Class Name: CategoryController
Parent Class (If Any): CourseController
Sub Class (If Any): N/A
Responsibilities: Responsible for creating categories, modifying a category, getting a list of all categories by a course id as well as deleting categories **Collaborators:** Preyansh Dutta, Gabriel Vainer, Maaz Hashmi

Class Name: CalculationController
Parent Class (If Any): CourseController
Sub Class (If Any): N/A
Responsibilities: Responsible for creating the calculations for the user's gpa. Converts percentage to GPA, sends the calculations as a response to the corresponding category/course. **Collaborators:** Armando Rojas

Class Name: CourseController
Parent Class (If Any): SemesterController
Sub Class (If Any): CategoryController
Responsibilities: Responsible for creating courses, modifying a course by id, getting a list of all courses, a specific course by id, as well deleting all courses tied to a semester or a specific course by id. **Collaborators:** Alejandro Iglesias Llobet, Armando Rojas

Class Name: SemesterController
Parent Class (If Any): UserController
Sub Class (If Any): CourseController
Responsibilities: Responsible for creating semesters, modifying a semester by id, getting a list of all semesters, a specific semester by id, as well deleting all semesters tied to a user or a specific semester by id. **Collaborators:** Alejandro Iglesias Llobet, Armando Rojas

Class Name: UserController
Parent Class (If Any): N/A
Sub Class (If Any): AuthController, UpdateController
Responsibilities: Main controller for our application that controls other controllers such as CalculatorController, AuthController, UpdateController. Will determine what type of response to send back to a user upon request. **Collaborators:** Preyansh Dutta, Gabriel Vainer

Class Name: UpdateController
Parent Class (If Any): AuthController
Sub Class (If Any): N/A
Responsibilities: Updates the user's details such as email and name based on the id of the user. Sends this request to the db to update. **Collaborators:** Preyansh Dutta, Gabriel Vainer

Class Name: AuthController
Parent Class (If Any): UserController
Sub Class (If Any): N/A
Responsibilities: Responsible for encrypting the password and controlling the login and register for the user. Generates a JWT token to make sure the server knows the user is logged in and expires in a reasonable amount of time. Sends the correct responses i.e. errors and success codes to frontend. **Collaborators:** Preyansh Dutta, Gabriel Vainer

Class Name: Category Model
Parent Class (If Any): Course Model
Sub Class (If Any): N/A
Responsibilities: Defines the Model & Schema for Academic Categories. Categories are given a name, a consistent weight, number of assessments as well as a list of grades and are tied to a to a specific course by a courseId.

Collaborators: Preyansh Dutta, Gabriel Vainer

Class Name: Course Model
Parent Class (If Any): Semester Model
Sub Class (If Any): Category Model
Responsibilities: Defines the Model & Schema for Courses. Courses are given a name and tied to a specific semester. **Collaborators:** Alejandro Iglesias Llobet, Armando Rojas

Class Name: Semester Model
Parent Class (If Any): User Model
Sub Class (If Any): Course Model
Responsibilities: Defines the Models & Schemas for Courses and Semesters. Incorporates some request handling for GET & POST, to be separated and extended into a new controller class in the future (i.e. SemesterController which may also include PUT, PATCH & DELETE request handling). **Collaborators:** Alejandro Iglesias Llobet

Class Name: User Model
Parent Class (If Any): N/A
Sub Class (If Any): N/A
Responsibilities: Defines the Model & Schema for Users. Handling already incorporated in User Controller (open for further extension). **Collaborators:** Preyansh Dutta, Gabriel Vainer

Endpoints

- **/api/login**
  - **POST**
    - This is used in the Promedio/frontend/src/routes/Login.js to send a post request to mongoDB in order to compare the credentials with the users in the database to check if the user exists. If a user exists, the user is logged in and a JWT is created.
    - Request Body: { email: string, password: string }
    - Response: { name: string, email: string, gpa: string, token: string }

- **/api/register**
  - **POST**
    - This is used in the Promedio/frontend/src/routes/Signup.js to send a post request to mongoDB in order to create a new user with the following information: Name, Email, Password.
    - Request Body: { name: string, gpa: string, email: string, password: string }
    - Response: { name: string, email: string, gpa: string, token: string }

- **/api/update**
  - **POST**
    - This is used in the Promedio/frontend/src/routes/User.js to edit the user details. The fields Name, and Email can be updated through a post request.
    - Request Body: { name: string, gpa: string, email: string, password: string }
    - Response: { name: string, email: string, gpa: string }

- **/api/semester/**
  - **GET**
    - This is used in the Promedio/frontend/src/routes/Home.js to display all semesters mapped to an individual user.
    - Response: { [{ name: string, userId: Mongoose.Schema.Types.ObjectId }] }
  - **POST**
    - This is used in the Promedio/frontend/src/routes/Home.js to create a new semester (i.e. a new document within the “Semester” Model/“semesters” collection) mapped uniquely to a user . The semester name is passed via the request body.
    - Request Body: { semesterName: string }
    - Response: { message: “Semester added successfully.”, semester: { name: string, userId: Mongoose.Schema.Types.ObjectId }}
  - **DELETE**
    - This is an extra function to use for debugging in case there’s a need to delete all semesters related to a user.
    - Response: { message: “Successfully deleted (x) semesters and all related courses.”}

- **/api/semester/:semesterId**
  - **GET**
    - This is used in the Promedio/frontend/src/routes/Home.js to list the details of a specific semester.
    - Request Parameters: { semesterName: string }
    - Request Body: { name: string, userId: Mongoose.Schema.Types.ObjectId }
  - **PATCH**
    - This is used in the Promedio/frontend/src/routes/Home.js to update an existing semester (i.e. a current document with id “semesterId” within the “Semester” Model/“semesters” collection) with a new name (as it is currently the only updateable field within the semester schema). Nothing happens otherwise within the database if no such semester exists.
    - Request Parameters: { semesterId: string }
    - Request Body: { semesterName: string }
    - Request Body: { message: “Semester updated successfully.” }
  - **DELETE**
    - This is used in the Promedio/frontend/src/routes/Home.js to delete an existing semester (i.e. a current document with id “semesterId” within the “Semester” Model/“semesters” collection). Nothing happens otherwise within the database if no such semester exists.
    - Request Parameters: { semesterId: string }
    - Request Response: { message: “Semester deleted successfully.” }

- **/api/course**
  - **GET**
    - This is used in the Promedio/frontend/src/routes/Home.js to display all courses for a specific user.
    - Request Response: [{ name: string, semesterId: Mongoose.Schema.Types.ObjectId }]
  - **POST**
    - This is used in the Promedio/frontend/src/routes/Home.js to create a new course (i.e. a new document within the “Course” Model/“courses” collection) mapped uniquely to a semester).
    - Request Body: { semester: string, name: string, description: string, markGoal: string }
    - Request Response: { message: “Course added successfully.”, course: { name: string, semesterId: Mongoose.Schema.Types.ObjectId, description: string, markGoal: string }}
  - **DELETE**
    - This is an extra function to use for debugging in case there’s a need to delete all courses attached to an user.
    - Request Response: [{ message: “Successfully deleted [x] courses.”}]

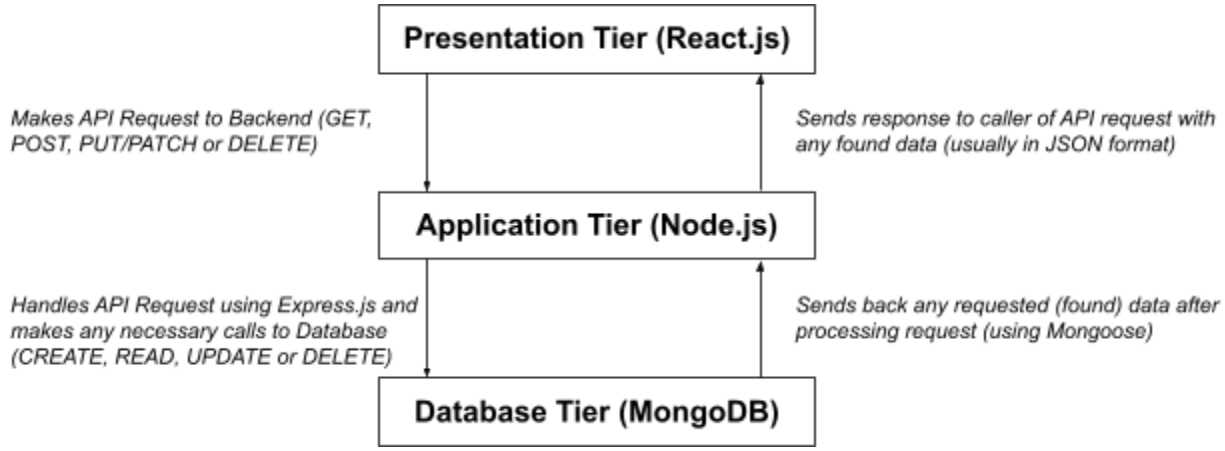
- **/api/course/:courseId**
    - **GET**
        - This is used in the Promedio/frontend/src/routes/Home.js to list the details of a specific course. A user should also be able to play with the course details for that requested course (i.e. accessing the CSCA08 course in the Fall 2020 semester to set a mark goal) after fetching.
        - Request Parameters: { courseId: string}
        - Request Response: { name: string, semesterId: Mongoose.Schema.Types.ObjectId, description: string, markGoal: string }
    - **PATCH**
        - This is used in the Promedio/frontend/src/routes/Home.js to update an existing course (i.e. a current document with id “courseId” within the “Course” Model/“courses” collection) with a new name, description or mark goal. Nothing happens otherwise within the database if no such course exists.
        - Request Parameters: { courseId: string }
        - Request Body: { name: string, description: string, markGoal: string }
        - Request Response: { message: “Course updated successfully.” }
    - **DELETE**
        - This is used in the Promedio/frontend/src/routes/Home.js to delete an existing course (i.e. a current document with id “courseId” within the “Course” Model/“courses” collection). Nothing happens otherwise within the database if no such course exists.
        - Request Parameters: { courseId: string }
        - Request Response: { message: “Course deleted successfully.” }
- **/api/addCategory**
    - **POST**
        - This is used in Promedio/frontend/src/components/EditCategoryForm.js to add a new category to a specific course. A category handles part of the cGPA calculation for that specific course.
        - Request Body: { name: string, weight: number, numAssessments: number, marks: Array<int>}
        - Request Response: { message: “Category added successfully.” }}
- **/api/editCategory**
    - **POST**
        - This is used in Promedio/frontend/src/components/EditCategoryForm.js to edit an existing category in relation to a specific course. A category handles part of the cGPA calculation for that specific course. A user can change the name, course, weight, number of assessments and marks of the category.
        - Request Body: { id: string, courseId: string, name: string, weight: number, numAssessments: number, marks: Array<int>}
        - Request Response: { message: “Category edited successfully.” }}
- **/api/deleteCategory**
    - **POST**

        - This is used in Promedio/frontend/src/components/Course.js to delete an existing category in relation to a specific course. A category handles part of the cGPA calculation for that specific course.
        - Request Body: { id: string }
        - Request Response: { message: “Category deleted successfully.” }

- **/api/categories/:courseId**
    - **POST**
        - This is used in Promedio/frontend/src/components/Course.js to get all the categories in relation to a course. A category handles part of the cGPA calculation for that specific course. By getting all of them, we can use their averages to calculate the overall cGPA for the course.
        - Request parameters: { courseId: string }
        - Request Response: [{ id: string, courseId: string, name: string, weight: number, numAssessments: number, marks: Array<int>}]

- **/api/calculations**
    - **GET**
        - This is used in Promedio/frontend/src/routes/AllCourses.js, Promedio/frontend/src/routes/Course.js, Promedio/frontend/src/routes/GPA.js, and Promedio/frontend/src/routes/Semester.js to provide appropriate computation details of the user.
        - This is to return all of the calculations for the User-entered GPA’s over all of the courses and semesters.
        - It returns things such as the mark goal, course completion, current mark, remaining mark, summed marks.
        - Request parameters: {userId: String, courseIds: Schema.Types.ObjectId}
        - Request response: { foundCourse: Array<string>, markGoal: float, courseCompletion: float, currentMark: float, remainingMark: float, summedMarks: float}

System Architecture Diagram



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