**Application Description: University Scheduler**

The "University Scheduler" is a web application designed to streamline and enhance the scheduling process within a university environment. Tailored to the unique needs of students, teachers, and administrators, the application provides a user-friendly interface for managing academic schedules, ensuring effective coordination of classes and activities.

**Key Features:**

1. **Role-Based Access:**
   * Students, teachers, and administrators have distinct roles with specific permissions, ensuring a personalized and secure user experience.
2. **Personalized Student Schedules:**
   * Students can easily access and view class schedules for their group for the week, aiding in efficient time management.
3. **Course Management for Teachers:**
   * Teachers have the ability to manage and view schedule for the course they are responsible for, facilitating effective class planning.
4. **Centralized Admin Dashboard:**
   * Administrators have a centralized view of the entire university schedule, allowing for global management, schedule creation and modifications, and user role assignments.
5. **Real-Time Updates:**
   * Changes made to the schedule, whether by students, teachers, or administrators, are reflected in real-time to ensure everyone has the latest information.
6. **Responsive Design:**
   * The application features a responsive design, ensuring a seamless and user-friendly experience.

The "University Scheduler" is a comprehensive solution that optimizes the scheduling process, and empowers users with the tools they need to succeed in their academic roles within the university ecosystem.

**User Role Authorities: University Scheduler Security Settings**

**1. Student:**

As a **Student** in the University, your role primarily revolves around accessing personal academic information. In terms of modifying the global university schedule, your authorities are limited to viewing your own schedule and being informed about any changes made by teachers or administrators. Students do not have the capability to make modifications to the overall schedule.

**2. Teacher:**

As a **Teacher** within the University, your authorities extend to the management of the course you teach. You have the ability to make changes to the schedule of your assigned course, including adjustments to class timings, locations, and related details. However, your scope is limited to the course under your responsibility, and you do not have global access to modify the university schedule beyond your teaching assignments. Schedule modification have to follow common schedule restrictions and teacher can do only allowed modifications that don’t brake other parts of global schedule.

**3. Admin:**

As an **Admin** with privileged access, you hold comprehensive authorities over the global university schedule. Your responsibilities include:

* **Centralized Schedule Management:** Access a centralized dashboard to make global modifications to the academic calendar and university schedule including schedule creation.
* **Uniform Changes:** Implement changes that affect the entire university, ensuring consistency and efficiency in scheduling.
* **User Role Management:** Manage user roles, including assigning or modifying permissions for teachers and students, controlling their level of access within the application.

**Global University Schedule Restrictions:**

1. Single Course Assignment per Teacher:
   * A teacher is restricted to teaching only one course at a given time. This ensures that their attention and efforts are focused on delivering quality education for the specific course.
2. Enforced Semester Limits:
   * There should be a limit on the number of courses a teacher can be assigned within a single semester to prevent overloading and ensure a balanced workload for educators.
   * The number and list of courses for the group is determined by the special Educational Program (curriculum).
   * The Curriculum is a table with a list of groups-rows and courses-columns. The number of lessons per week is indicated in the cell at the intersection. That is, the row for the group will indicate the number of Lessons from each Course available at the University. Some Courses will be 0 - they are not taught for this group. Numbers 1-3 will indicate the number of lessons per week.
3. At the same time, there can be only one Lesson from one Teacher from one Course for one Group.
4. Parallel classes for different groups, classrooms, courses, teachers are allowed.
5. For one group there should be from 2 to 4 classes per day.
6. For a group, classes should be consecutive.
7. For a group or a teacher, classes may not start with the first Lesson, but with the 2nd or 3rd.

These restrictions collectively contribute to the effective and organized management of the global university schedule, preventing conflicts, and enhancing the overall academic experience for both teachers and students.

**User Stories**

**Title:** View Personal Schedule

**User Story:**

As a **Student**,

I want to **view my personal schedule** for the one week,

So that **I can easily plan and manage my academic activities.**

**Acceptance Criteria:**

1. Given that I am logged in as a student, When I navigate to the "Schedule" section, Then I should see a clear and organized display of my class timetable.
2. Given that I have multiple courses in a semester, When I view my schedule, Then each course should be listed with its corresponding details, such as course name, teacher, room number, and time.
3. Given that there are changes in the schedule (e.g., cancellations or room changes), When I refresh the schedule page, Then the information should be updated in real-time to reflect any modifications.

**Title:** Manage Course Schedule

**User Story:**

As a **Teacher**,

I want to **manage and view the schedule for the courses I am responsible for**,

So that **I can effectively plan and conduct my classes.**

**Acceptance Criteria:**

1. Given that I am logged in as a teacher, When I navigate to the "Schedule" section, Then I should see a comprehensive overview of the course I am teaching in the current semester.
2. Given that I have the ability to modify the schedule, When I make changes to the class timings or locations, Then the modifications should be reflected in real-time for both me and the students.
3. Given that I have only one course, When I access the schedule, Then course should be clearly listed with details like course name, class timings, room numbers, and the group names.

**Title:** Administer University Schedule

**User Story:**

As an **Admin**,

I want to **manage and oversee the entire university schedule**,

So that **I can ensure efficient coordination of academic activities.**

**Acceptance Criteria:**

1. Given that I am logged in as an admin, When I access the admin dashboard, Then I should have a centralized view of the entire university schedule.
2. Given that I have the authority to make global changes, When I need to update the academic calendar or make universal schedule modifications, Then the changes should be applied uniformly across all user roles and be reflected in real-time.
3. Given that I have a duty to manage university schedule, When I create global schedule or edit existing schedule, Then the changes should appear for all users in real-time.
4. Given that I want to manage user roles, When I access the user management section, Then I should be able to assign or modify roles for teachers and students, ensuring the right level of access.