

Fullstack Todo application

Your assignment is to create a To-do application. Your application needs to be full stack, in other words it needs to contain both backend and frontend functionality.

Technologies:

- MySQL – database
- H2 database if you want integration testing
- JPA/Hibernate
- Thymeleaf template engine
- Spring MVC
- Spring Security
- Spring Boot

User types:

There are three types of users of the application:

1. Guests
2. Users
3. Admins

Guest:

A guest is technically not a user. It is a potential user who have the option to register itself as a user through a link on the start page.

Users:

A user is registered in the system and is someone who can be assigned tasks to do for money. A User can not choose which task they want. They get a task assigned to them through an admin. They can however see their own profile and see which task(s) has been assigned to them.

Admins:

Each admin's role is to assign tasks to users. They should be able to create, read, update and delete todo items.

Entities:

- **AppUser.class :**
 - Contains: id, username, first name, last name, registration date and password.
 - References: Several AppUserRole.class with a collection representing authorities like admin or user.
 - Optional references: Several TodoItem.class in a collection.

It's the user class in the application. Each user can have different roles. (admin, user).

Username is important and need to be unique. The user should log in by filling in a username and a matching password.

- **AppUserRole.class :**
 - Contains: id, role.
 - Optional references: Several AppUser.class with a collection.

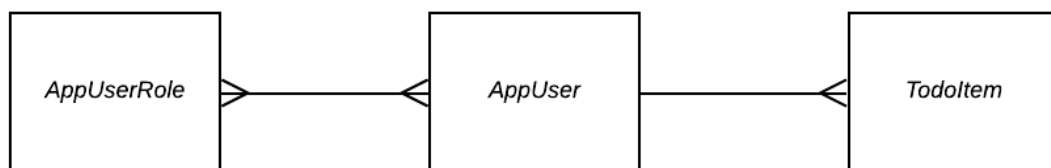
It's a class representing roles in the application. You need to have at least two different roles stored, user and admin.

A user should only have authority to read.

Admin should be the one that assign TodoItems to a user and have authority to create, read, update, and delete throughout the whole application.

- **TodoItem.class :**
 - Contains: id, title, description, deadline, done status, reward (payment).
 - References: AppUser.class object representing the assignee.

Each object of this class represents a task that should be assigned to any AppUser. Only admins are allowed to create TodoItems and assign them.



Views

- Index.html
 - Welcome page accessible to everyone
- Register.html
 - Used to register an AppUser (both admin and user)
 - Only admins should be able to create admins.
 - Register link should not be visible to ordinary logged in users. Only admins.
- Items.html
 - Used to search for TodoItems and show the result of that search. Users and Admins.
- Users.html
 - Used to search for AppUsers and show result of that search. Not available to ordinary users.
 - Here admins can pick one of the users and assign a task by clicking a button. This button takes the admin to a list of unassigned todo's where he/she clicks the desired todoitem.
- CreateTodo.html
 - Available only to admins.
 - Used to create new TodoItems.
- UserDetails.html
 - Available to all admins and the particular user it belongs to.
 - Shows information about the selected(for admins)/logged(for user) in user and its todoitems.