

CoDR User Manual

Version 1.0

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Chapter 1

Installation

1.1 Prerequisites

CoDR requires Docker (tested with Docker version 18.04.0-ce, build 3d479c0) to be installed on the host computer when using the Docker container, in case of a manual setup the required software is as follows:

- Node.js (Tested with version v9.11.1)
- Yarn (Tested with version 1.5.1)
- PostgreSQL (Tested with version 9.6.6)

1.2 Setting up the environment

Note: In this section it is assumed that Docker is used and the front-end, back-end and database section of CoDR are ran on the same host computer. For more advanced users it is possible to install these sections on different computers by following the instructions in the Docker files on different computers and updating their respective configurations.

The files necessary to get CoDR up and running have been provided with a copy of this user manual. Once the files have been downloaded and extracted to a directory of the user's choosing the environment can be set up.

1.2.1 Installing Docker

Docker can be installed on most computers running Windows, GNU/Linux or OS X. In this user manual it is assumed that the user is deploying the application on a Linux computer. The Linux distribution used in the following example is Debian, as the Docker package is not available by default on this Linux distribution and requires a few additional steps. Please refer to the Docker installation guide on <https://docs.docker.com/install/> to find installation instructions for Docker for a different operating system (click on Docker CE on the left hand side and then select the desired operating system).

Docker can be installed on Debian by running the following sequence of commands:

```
# Downloading and installing Docker:
sudo curl -sSL https://get.docker.com/ | sh

# Adding the current user to the docker group:
sudo usermod -aG docker $USER
```

The `$USER` variable in the second command can be replaced by a different user if Docker is going to be ran by a different user account. By default `$USER` corresponds to the user that is currently logged in.

1.2.2 Configuring CoDR

After Docker has been installed the front and back-end of CoDR have to be configured to be able to run properly on the host computer as they need to be aware of each other's IP addresses. The local and external IP address of the host computer should be known before continuing to the next section, as they are required in the configuration files of the back-end and front-end. Configuration is not necessary if the same server is used as the one originally used at time of development of CoDR, which is the server belonging to the IP address 130.89.7.104.

Configuring the back-end

The file `codr-backend/files/.env` should be modified to point to the proper addresses for the current host computer. By default they are configured for the IP address 130.89.7.104 as this is the IP address specified in the metadata used for the University of Twente SAML login. In case a different IP address is used every instance of 130.89.7.104 in this file should be replaced by a different IP address. The username and password for the database can also be modified by changing `DB_USERNAME` and `DB_PASSWORD` respectively. This is recommended as the defaults are **NOT** secure. The database username and password should correspond to the username and password specified in the `codr-database` Dockerfile.

Configuring the front-end

The file `codr-frontend/files/assets/js/config.js` should be modified to point to the proper addresses for the current host computer. Similarly to the back-end configuration, they are configured for the IP address `130.89.7.104` by default. In case a different IP address is used the `api` and `website` entries should be replaced by a different IP address.

Optional: Configuring the database

Configuring the database is optional but recommended, as the default credentials are not secure. In case a different username and password is to be used, the line `CREATE USER codrdb WITH SUPERUSER PASSWORD 'smoothie4';` should be updated by changing `'codrdb'` after `USER` with a different username and/or changing `'smoothie4'` after `PASSWORD` with a different password. The quotes should be included with the password and not removed. As mentioned during configuration of the back-end, when the username and/or password of the database are updated they should also be updated in the `codr-backend/files/.env` file.

Optional: Using a different IP address and/or certificate

In case CoDR is ran on a computer with an IP address other than `130.89.7.104` or the user wants to use a different certificate for the SAML authentication, the metadata should be updated and sent to ICT-services, as it needs to be updated on the login server of the University of Twente as well. The IP addresses should be updated in the `codr-backend/files/.env` file as mentioned in section 1.2.2. In order to use a new certificate the user first has to generate a new certificate using the following command:

```
openssl req -x509 -newkey rsa:4096 -keyout key.pem -out cert.pem -days  
365 -nodes
```

The command will prompt the user for things such as "Country Name", but these can be left as the default values by simply pressing the Enter key. After the command has finished running the resulting `key.pem` and `cert.pem` files should be copied to the `codr-backend/files/config/cert/` folder. After these files have been updated the newly updated metadata can be found at the `/api/metadata` endpoint of the back-end. This file can be saved and sent to the ICT-services of the University of Twente as is, which will allow them to update the data on their side.

1.2.3 Building the Docker containers

Note: The order in which the different sections are built does not matter. In case a change was made after building any of the different sections, that respective section should be rebuilt. It is not necessary to rebuild all of the sections.

Building the docker containers can be a time consuming process on lower-end systems but should never take longer than a few minutes on most modern systems. In order to build the back-end, navigate to the `codr-backend` folder and execute the command `"docker build -t codr-backend ."`. Building the other sections almost identical. The front-end can be built by navigating to the `codr-frontend` folder and executing the command `"docker build -t codr-frontend ."`. Lastly, the database can be built by navigating to the `codr-database` folder and executing the following command `"docker build -t codr-database ."`.

1.2.4 Running the Docker application

After all of the sections have been built, navigate to the root directory containing the `docker-compose.yml` file and the `codr-frontend`, `codr-backend` and `codr-database` folders. The following commands should be executed in order to start CoDR:

```
docker swarm init
docker stack deploy -c docker-compose.yml codr
```

The logs of the different sections of the application can be accessed by using the following commands:

```
# In order to find the IDs of each section:
docker service ls

# Accessing the logs of the specified section:
# {ID} should be replaced with the ID shown in the output
# of the command above of the chosen section.
docker logs {ID}
```

In order to terminate the CoDR application the following commands should be used:

```
docker stack rm codr
docker swarm leave --force
```

1.2.5 Creating an administrator user

After the Docker container is running an administrator user needs to be created to be able to create modules, manage rights templates and add new administrator users. The steps to do this are listed below.

1. Go to the CoDR website (default: 130.89.7.104:3000).
2. Log in using the user that should be made an administrator.
3. On the server:

- (a) Find the ID of the database docker container using

```
docker container ls
```

- (b) Enter the following command to get into the database, substituting `<id>` for the ID that was found during the previous step and substituting `<database_user>` for the user that was defined in section 1.2.2.

```
docker exec -it <id> psql -U <database_user> -d codr
```

- (c) Enter the password for the database user, which was defined in section 1.2.2.
- (d) Find the ID of the user that should be made administrator using the SQL query below.

```
select * from users;
```

- (e) Make the user an administrator using the query below. Substitute `<id>` for the user ID found during the previous step.

```
update users set user_level = 0 where id = <id>;
```

4. Log out on the website by clicking the "Log out" button in the upper right. You will be asked to log in again. After logging in again the specified user will be administrator.

Chapter 2

Usage

2.1 Rights system

In CoDR exercises are coupled to a rights template. This template describes the rights that different groups have. Templates are managed over the whole application by an administrator. Moderators can attach such a global template to an exercise to obtain the desired rights for that exercise.

When editing a template not everything may be intuitive. In the first place the rights are defined for different user groups in a module. So if a user is a member of a module in the group Students, that user will have the rights defined in the students section of the template. In the second place, within a group the rights are defined for a project and for comments. Within these groups rights are divided in owner, member and other. Owner means that the user is the owner of a comment. Member means that the user is a member of the project group of the project (that the comment was created in). Other covers all other cases.

There are several settings that need some further information.

Right	Information
Create visible comment	If this field is false, the user may still be able to comment on a project (if the user is the owner of the project)
Toggle visibility	If this field is true the user can see invisible comments and optionally make them visible
Edit comment	This field is required to be able to edit a comment or to toggle its visibility
Edit project	This means that the user can upload files to the project

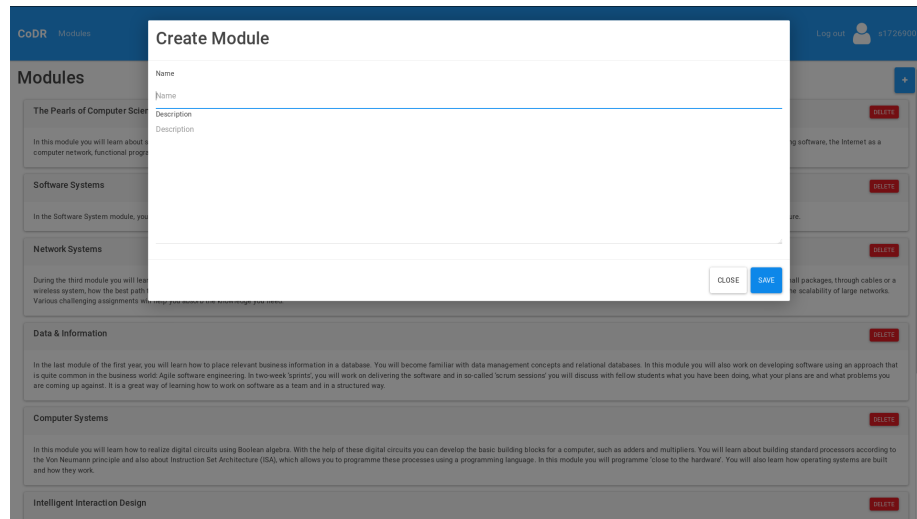
2.2 Functionality

This section will explain how to perform several actions in the CoDR application.

2.2.1 Creating a module

1. On the home page, click the blue + button on the right side of the page
2. Fill in the name and description of the new module

3. Click on the blue SAVE button to save the newly created module



The screenshot shows the CoDR Modules interface. A modal window titled 'Create Module' is open in the center. It contains two text input fields: 'Name' and 'Description'. The 'Name' field has a blue underline. At the bottom right of the modal are two buttons: 'CLOSE' (white with a blue border) and 'SAVE' (solid blue). The background shows a list of modules with titles like 'The Pearls of Computer Science', 'Software Systems', 'Network Systems', 'Data & Information', 'Computer Systems', and 'Intelligent Interaction Design'. Each module entry has a red 'DELETE' button on the right. The top right of the page shows a 'Log out' link and a user ID 'x1726900'.

Figure 2.1: Creation of a module

2.2.2 Creating a course

1. On the home page, click the module in which you want to add the course
2. On the module page, click the blue + button on the right side of the page
3. Fill in the name and description of the new course
4. Click on the blue SAVE button to save the newly created course

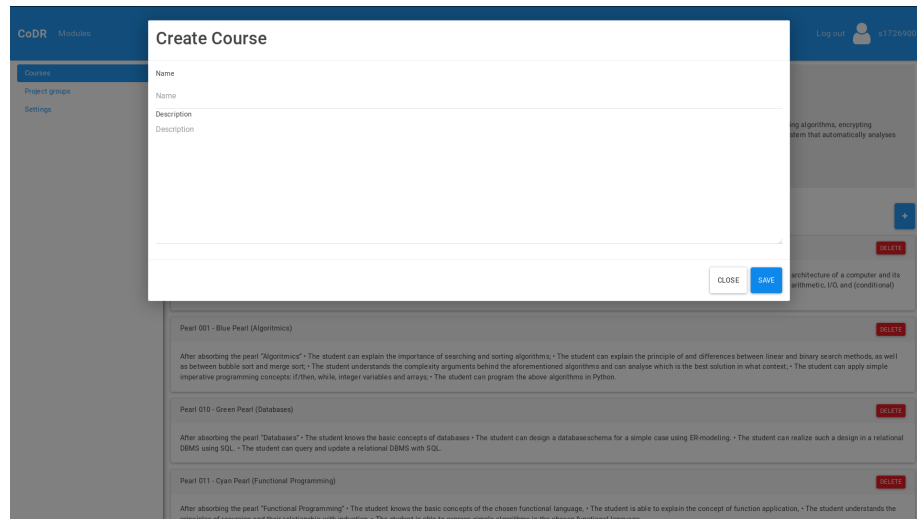


Figure 2.2: Creation of a course

2.2.3 Creating an exercise

1. On the home page, click the module in which you want to add the exercise
2. On the module page, click the course in which you want to add the exercise
3. On the course page, click the blue + button on the right side of the page
4. Fill in the name and description of the new exercise
5. Select the rights template you want to apply to this exercise
6. Click on the blue SAVE button to save the newly created exercise

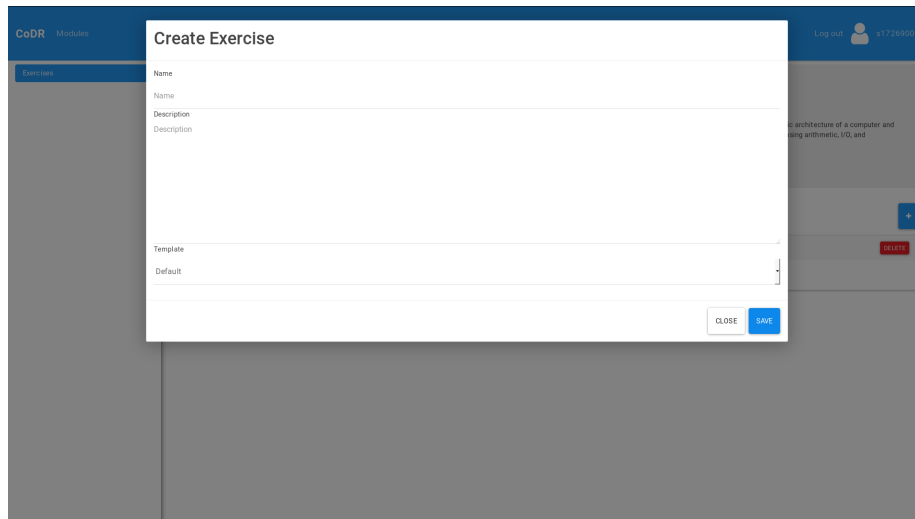


Figure 2.3: Creation of an exercise

2.2.4 Creating a project

1. Create a project group if you do not have a project group in the module of the exercise where you want to create a project2.2.6
2. On the module page, click the course in which you want to add the project
3. On the course page, click the exercise in which you want to add the project
4. On the exercise page, click the blue + button on the right hand side of the screen
5. Select the previously created project group
6. Click on the blue SAVE button to save the newly created project

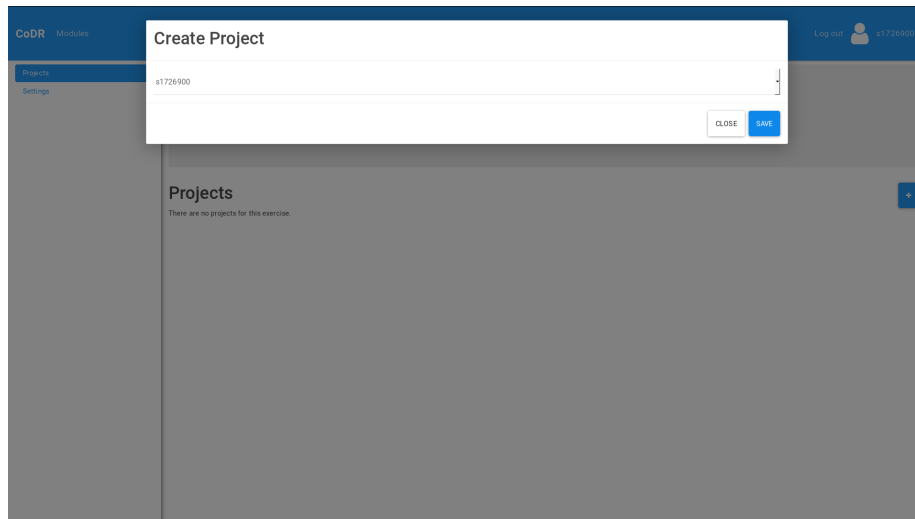


Figure 2.4: Creation of a project

2.2.5 Adding a file

1. Follow the steps to create a project found in 2.2.4
2. On the left hand side of the project page, click the blue UPLOAD FILE button
3. Click in the box to select a file from your computer
4. Click on the blue UPLOAD FILES button to upload the files to the server

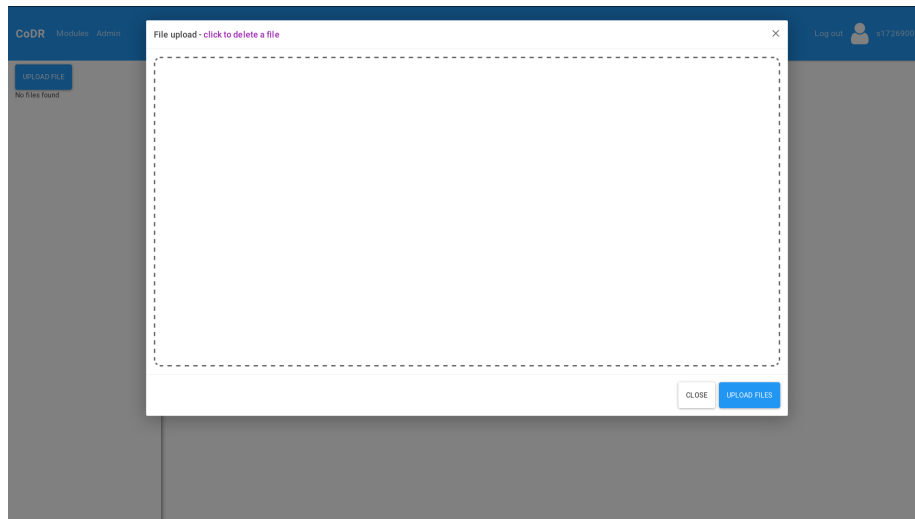


Figure 2.5: Adding a file to a project

2.2.6 Creating a project group

- On the module page, click the project groups in the left hand side of the screen
- On the project groups page, click the blue + button

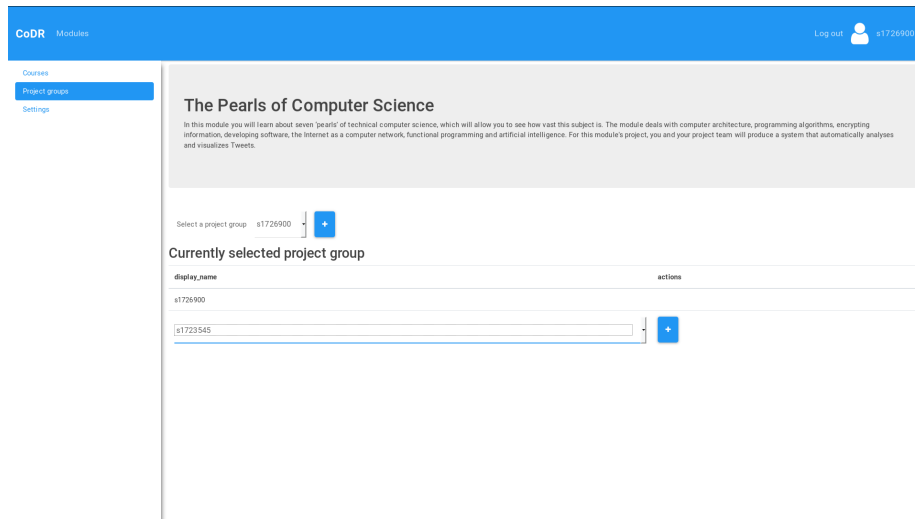


Figure 2.6: Creating a project group

2.2.7 Adding members to a project group

1. Click on the modules link in the navigation bar on the top of the page
2. Click the module in which the project group resides
3. click the project groups page to the left hand side of the screen
4. Select the project group from the drop down list to which you want to add a member
5. In the drop down select the member you want to add to the project group
6. Click on the blue + button next to the select box

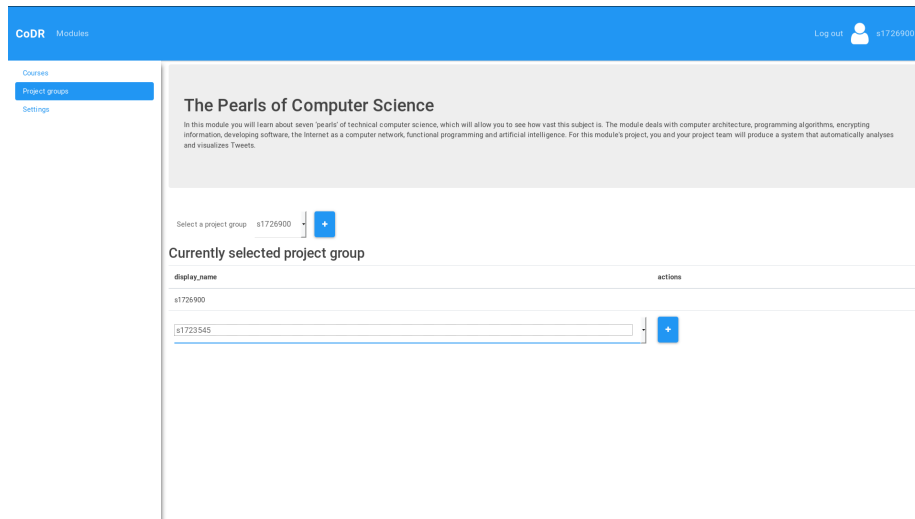


Figure 2.7: Adding a person to a project group

2.2.8 Creating a new rights template

1. Click the admin link in the navigation bar on the top of the page
2. On the left hand side of the page click the rights template
3. Click the blue + button
4. Fill in a description for the template
5. Click on the blue SAVE button to create the new rights template

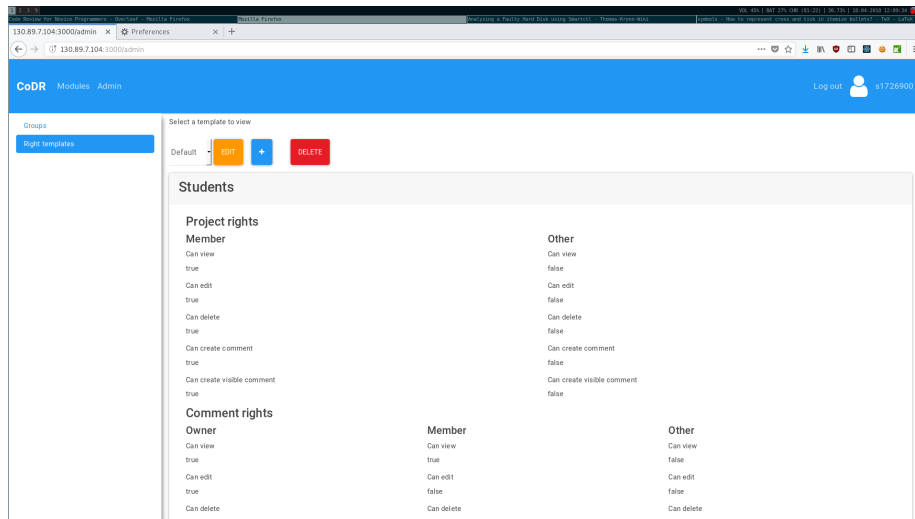


Figure 2.8: Creation of a rights template

2.2.9 Editing a rights template

1. Click the admin link in the navigation bar on the top of the page
2. On the left hand side of the page click the rights template
3. Click the orange EDIT button
4. Change the fields that you want to change
5. Click the blue SAVE button

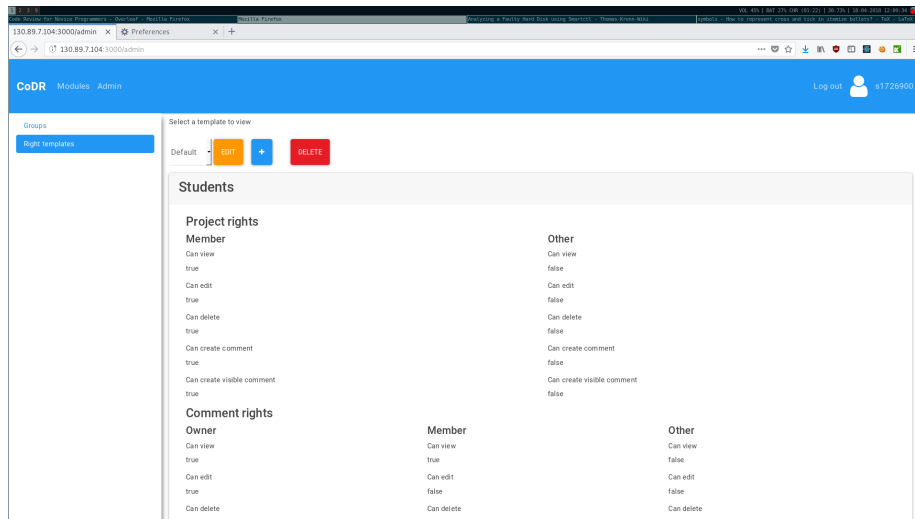


Figure 2.9: Editing a rights template

2.2.10 Deleting a rights template

1. Click the admin link in the navigation bar on the top of the page
2. On the left hand side of the page click the rights template
3. Click the red DELETE button
4. Confirm the deletion

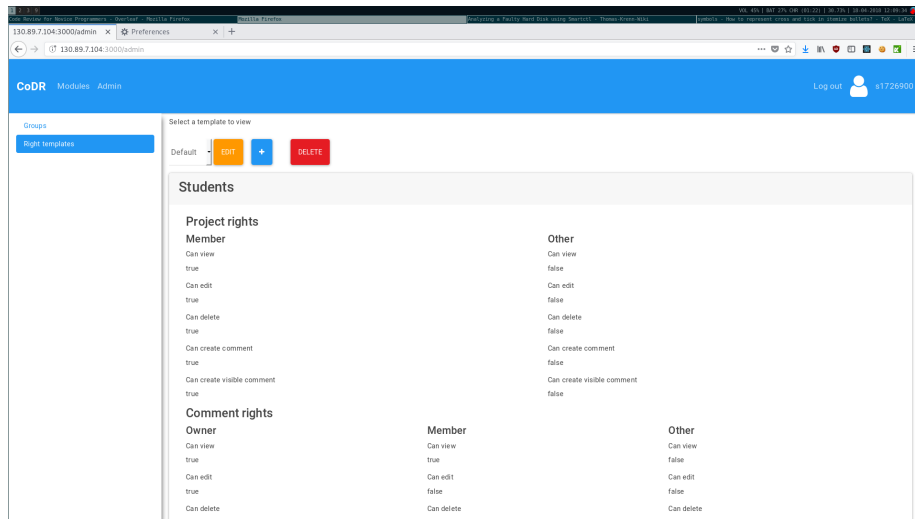


Figure 2.10: Deleting a rights template

2.2.11 Adding a comment to a file

1. On the left hand side of the project page click on the file on which you want to add a comment
2. Check the check boxes next to the lines to which you want to place a comment
3. Click on the ADD COMMENT button on top of the page
4. Type the comment you want to place
5. Click on the ADD COMMENT button to submit the comment

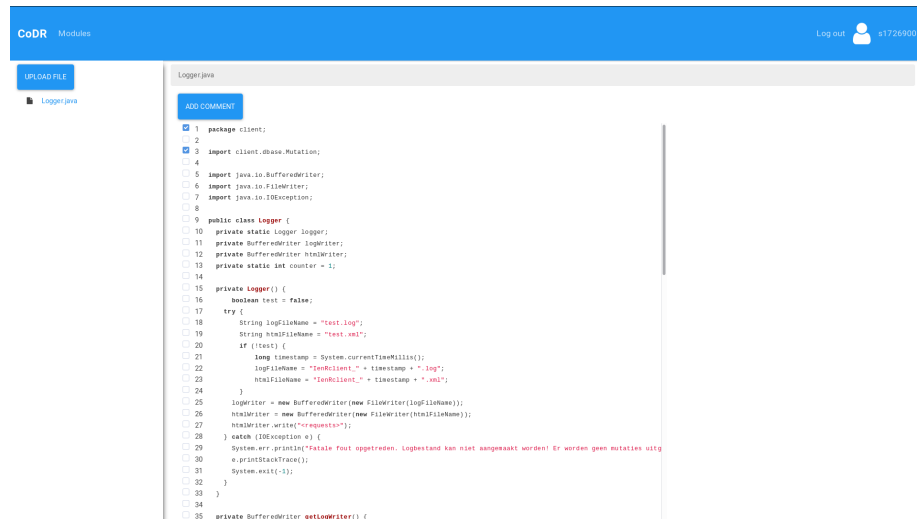


Figure 2.11: Selection of the files

2.2.12 Adding a comment to another comment

1. On the left hand side of the project page click on the file on which you want to add a comment
2. Click the blue REPLY button on the right hand side of a comment
3. Type the comment you want to place
4. Click on the ADD COMMENT button to submit the comment

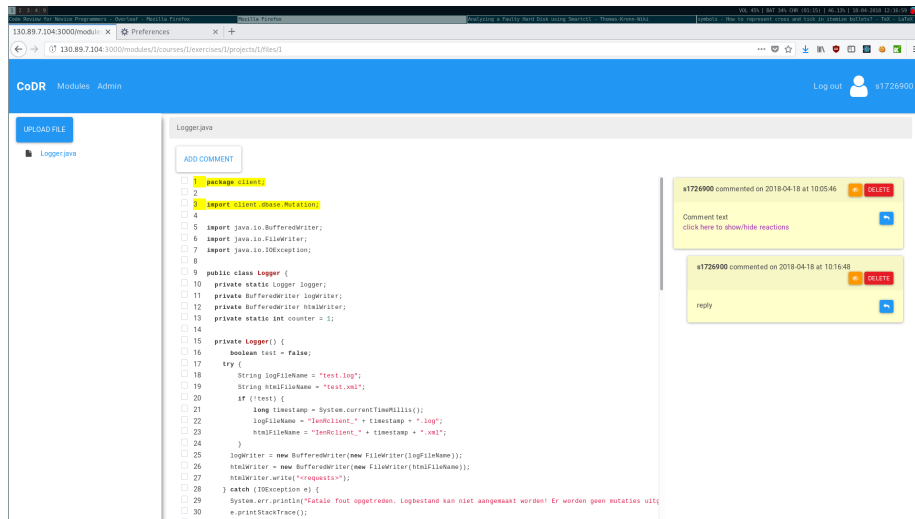


Figure 2.12: Replying to a comment

2.2.13 Deleting a comment

1. On the left hand side of the project page click on the file for which you would like to delete a comment
2. Click the red DELETE button on the right hand side of a comment
3. Click on confirm to delete the comment

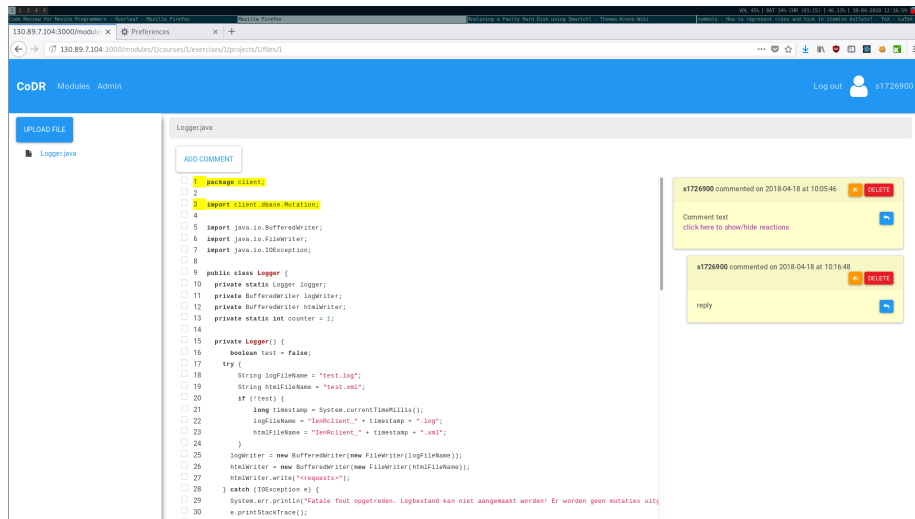


Figure 2.13: Deleting a comment

2.2.14 Toggling the visibility of a comment

1. On the left hand side of the project page click on the file that contains the comment you want to modify
2. Click the orange EYE button on the right hand side of a comment
3. Click on confirm to toggle the visibility of the comment

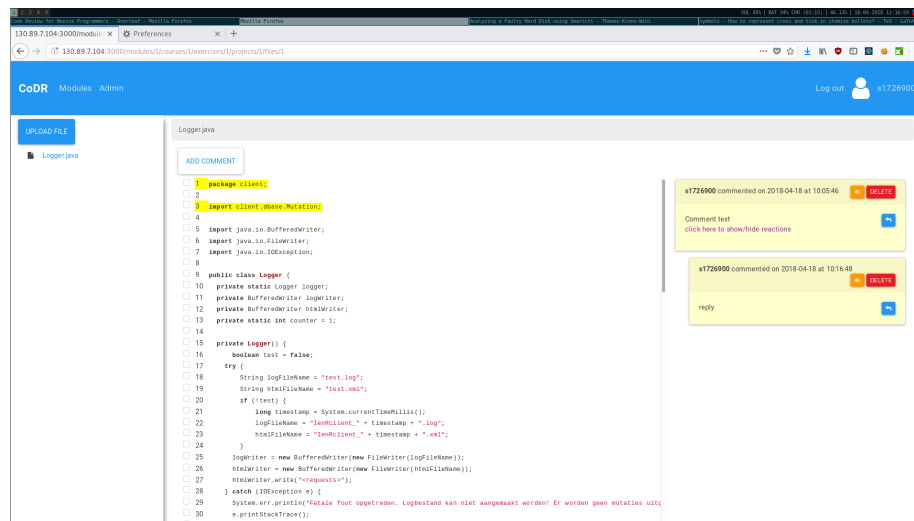


Figure 2.14: Toggling the visibility of a comment

2.2.15 Adding a user to a module

1. On the home page, click the module to which you want to add a user
2. Click the settings link on the left hand side of the page
3. Click on the blue + button to add a user to the module
4. Select the user you want to add and the group you want to add this user to

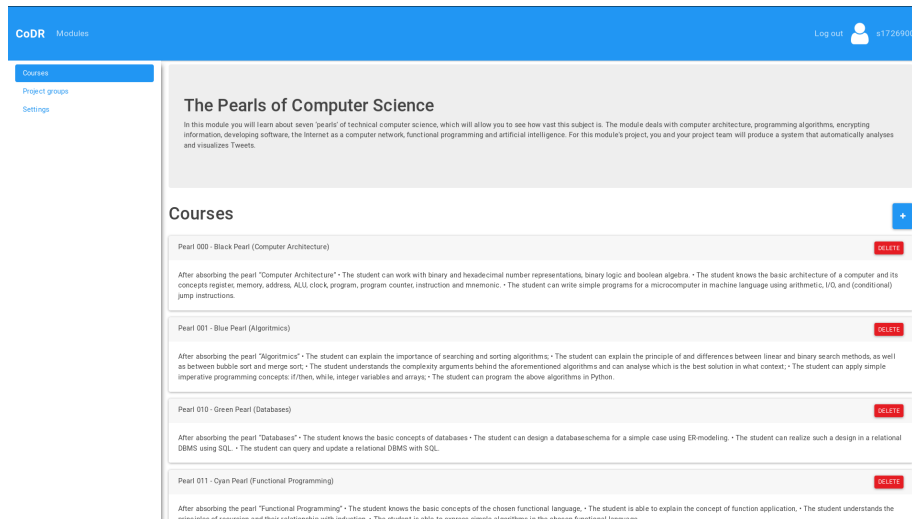


Figure 2.15: Adding a user to a module

2.2.16 Editing an exercise

1. On the home page, click the appropriate module
2. On the module page, click the appropriate course
3. On the course page, click the appropriate exercise
4. On the left hand side of the page click on settings
5. Click on the orange EDIT button on the right hand side of the page
6. Make the desired changes
7. Click on the blue SAVE button on the right hand side of the page

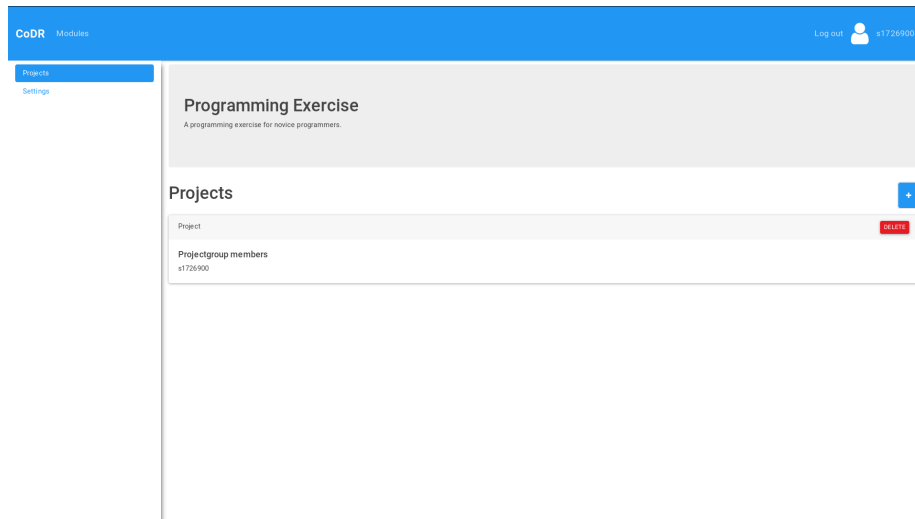


Figure 2.16: Editing an exercise

2.2.17 Editing a rights template

1. Click on the Admin link in the navigation bar on the top of the page
2. On the right hand side of the page click on the rights templates link
3. Select the desired rights template you want to edit
4. Click on the orange EDIT button
5. Make the desired changes
6. Click on the blue SAVE button

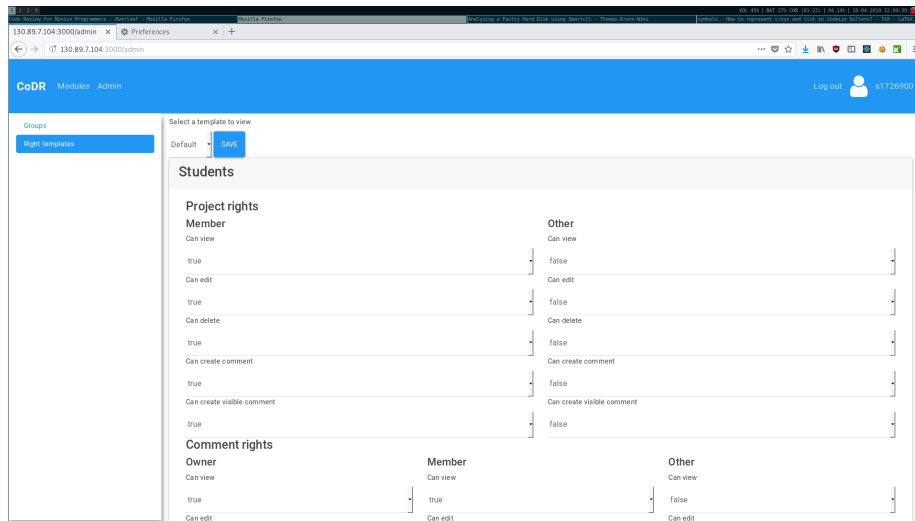


Figure 2.17: Editing a rights template