uhu.es

Escuela Técnica Superior de Ingeniería

Universidad de Huelva

Trabajo Fin de Grado

Herramienta Didáctica de Simulación de Protocolos de Red Basada en Servicios Web

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General Index

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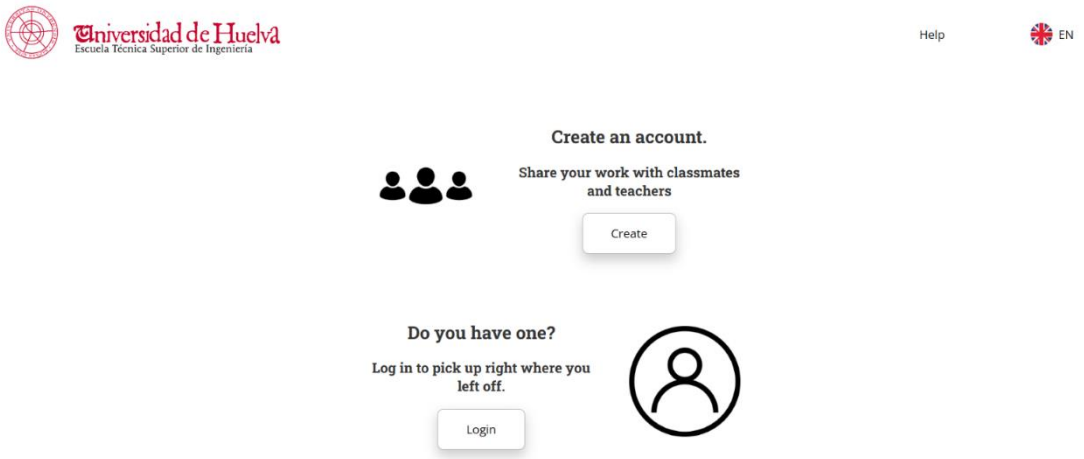
1. User Guide

1.1 Initial Interface

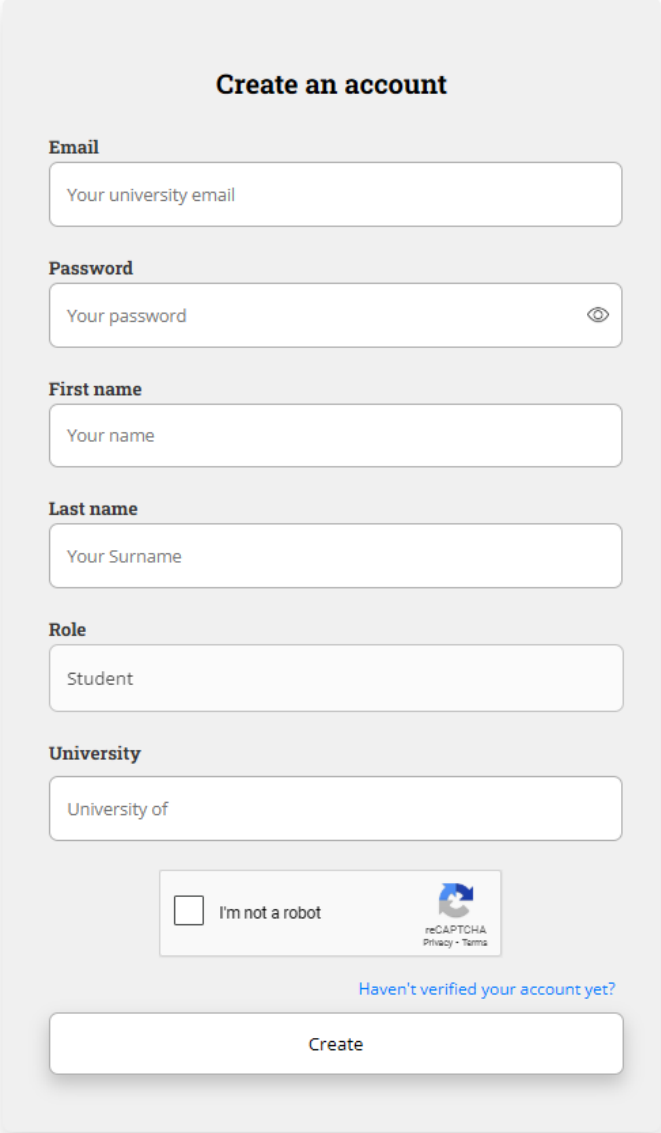


1.Initial Interface.

The initial interface of the programme consists of a top menu and two buttons that give access to registration or login. The tabs that make up the menu are:

- Help:
  - User Guide
  - About
- En:
  - Ee

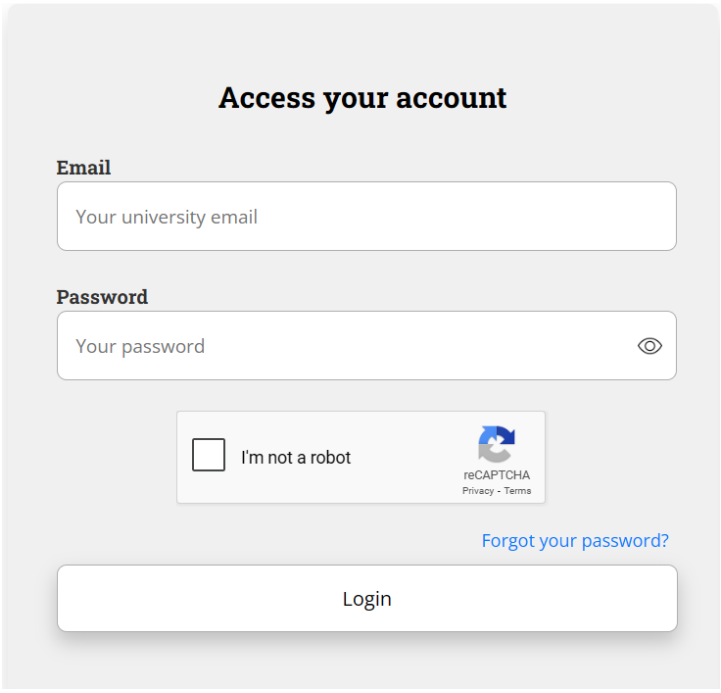
1.1.1 Create User



2. Account creation form.

In this form that the user must fill in in order to access the application, he/she must enter his/her University of Huelva e-mail address, a password containing at least 10 characters, including a capital letter (A Z), a lowercase letter (a z), a number (0 9) and a special symbol (@$!%*?&). You will also have to enter your name and surname and click on create, when you click on create you will be taken directly to the home page of the application. The role and the university will be set automatically when the mail is detected.

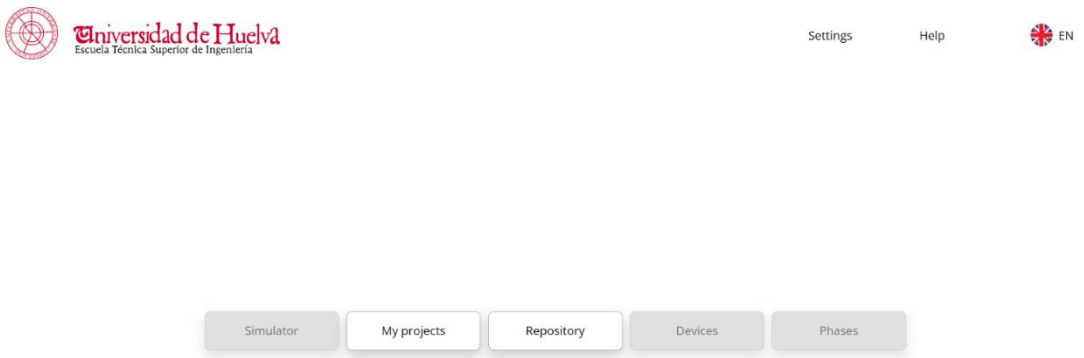
1.1.2 Login



3. Login form.

In this form, the user must enter their University of Huelva email address and the password (which they entered when creating the account previously). By clicking on login you will access the home page of the application.

1.2 Main Interface (home)

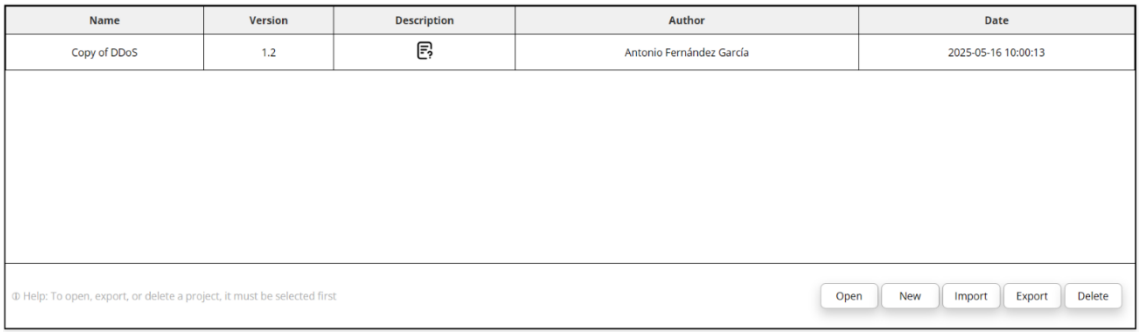


4. Main interface.

The main interface of the programme consists of a top menu and five buttons that give access to all the programme's functions. Each button opens a different view, initially only 'My projects' and 'Repository' are accessible:

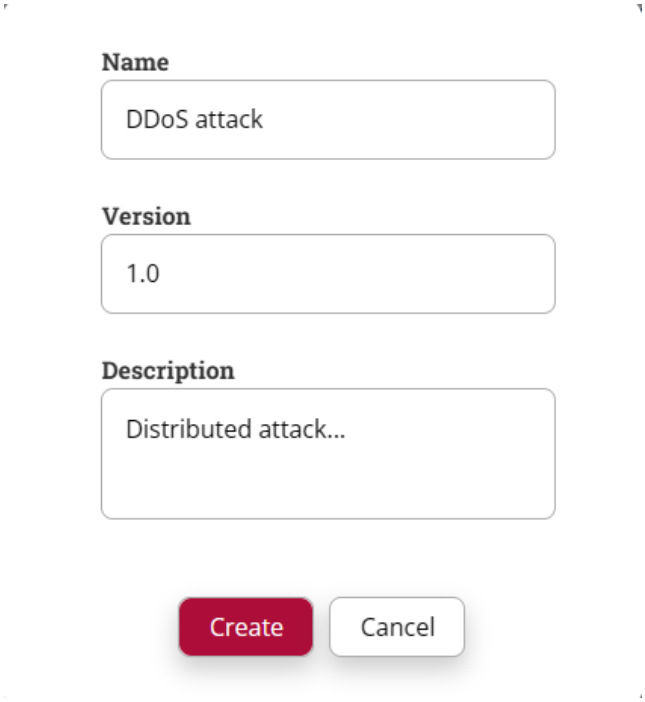
- My projects
- Repository
- Simulator
- Devices
- Phases

1.2.1 My Projects:



5. View of 'My Projects' without selecting any of them.

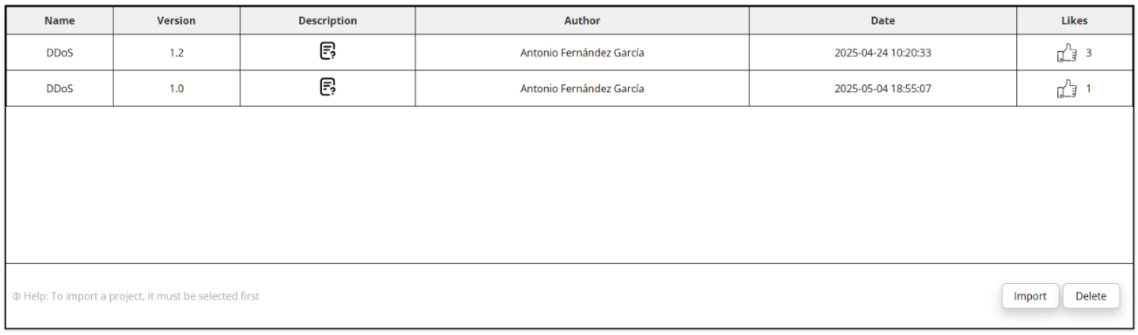
This view is used to open, create, export and delete user protocols. It should be taken into account that, if a project has not been created or imported, the rest of the options cannot be accessed except for the repository, this option is given so that projects can be imported from this and so that it is not necessary to create one from scratch.



6. My Projects' view, creating a project.

When you create a project, you will see Illustration 10 and you must add a name and version, the description is optional. Once a project has been created or imported, we must select it and open it in order to access it.

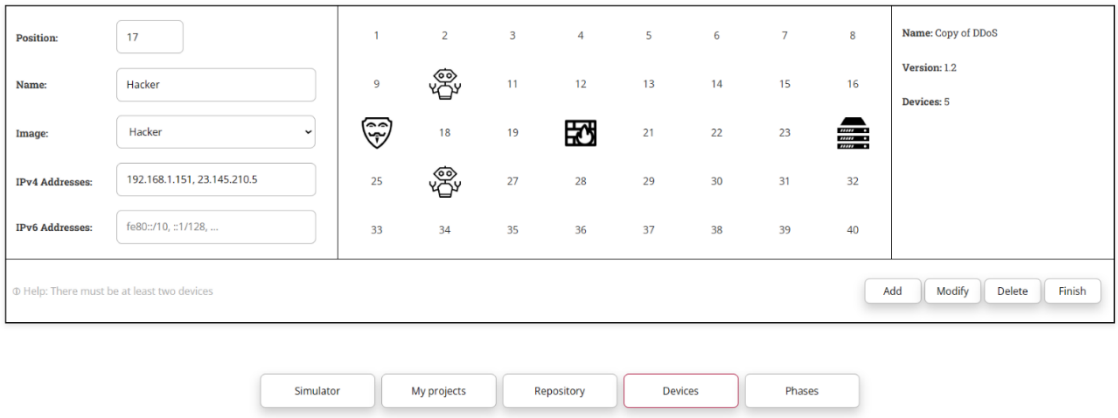
1.2.2 Repository:



7. Repository' view.

In this view you can find all the projects of the course that have been shared by the rest of the classmates. You can import any project, delete your own projects and evaluate them, thus forming a 'ranking' of projects.

1.2.3 Devices:



8. Devices' view.

This view is used to manage the project devices, you can add up to a maximum of 40 devices, to choose the position you can click both on the topology number and on the position field (first field on the left). To add a device, at least the first three fields must be filled in (the IPs are optional) and click on the add button (otherwise it will not be saved). Once added, it can be modified or deleted.

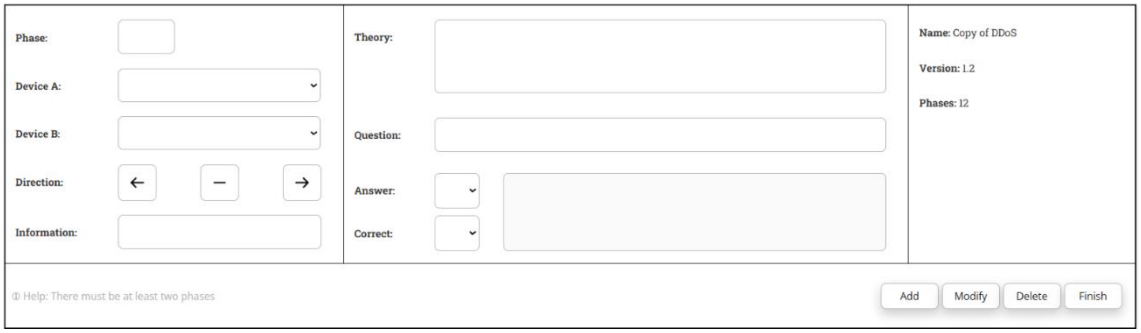
- Position: place where the device shall be located within the topology.
- Name: name of the device.
- Image: allows you to select an image to be displayed in the topology.
- IPv4 Address: up to four IP version 4 addresses can be added for each device.
- IPv6 Address: Up to four IP version 6 addresses can be added for each device.

If you come from the 'My projects' view, you must create at least two devices beforehand to be able to access the phases.

When you click on any device, a tab will appear indicating its data, an example of which can be seen in illustration 9.

9. Device information.

1.2.4 Phases:



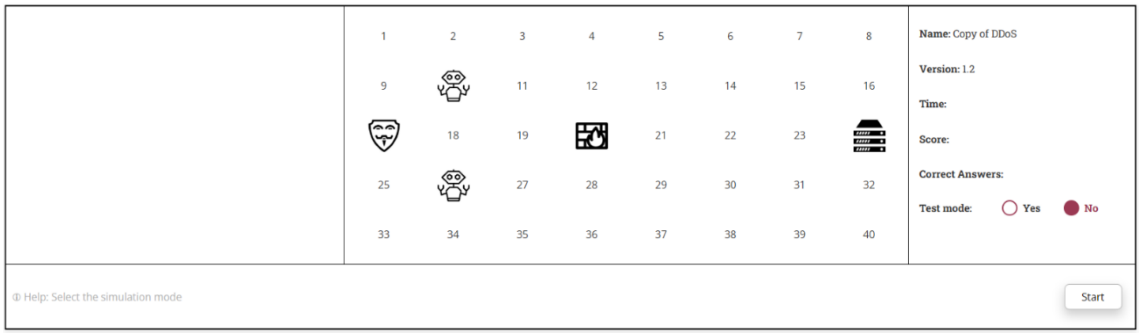
10. 'Phases' view.

In the 'phases' view you can manage any of the phases of the protocol, apart from the phase information itself (left sector) you can add extra information (in the theory field) and questions with their respective answers to make a kind of test in the simulation (central sector), if this sector is left blank nothing happens, because it is extra information and therefore optional.

In order to complete the project phases there must be at least two phases.

To fill in a phase you must choose a phase number (there can be up to a maximum of 200 phases per project), choose the devices (A and B) involved, the direction of the communication and the information that is being transmitted.

1.2.5 Simulator:

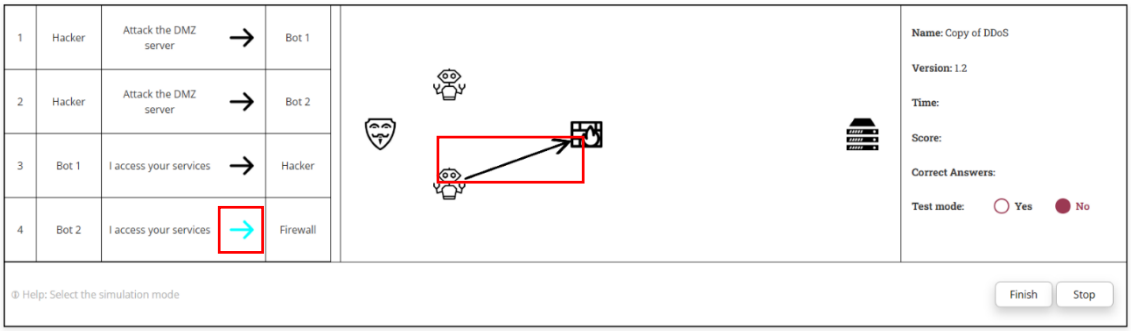


11. 'Simulator' view.

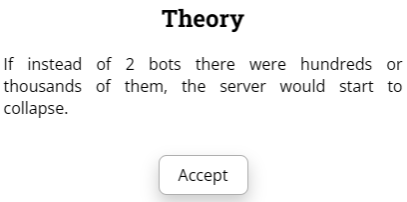
This is the main view of the web application, where the previously created protocol can be simulated in two different ways.

On the left side the phases are dynamically displayed, in the centre the topology containing all the devices created and on the right side the project data, the simulation data and the simulation options.

If the simulation arrow is selected both in the phase and in the topology, it will display the theory information when the arrow is blue in the phase as shown in illustration 11 and 12.

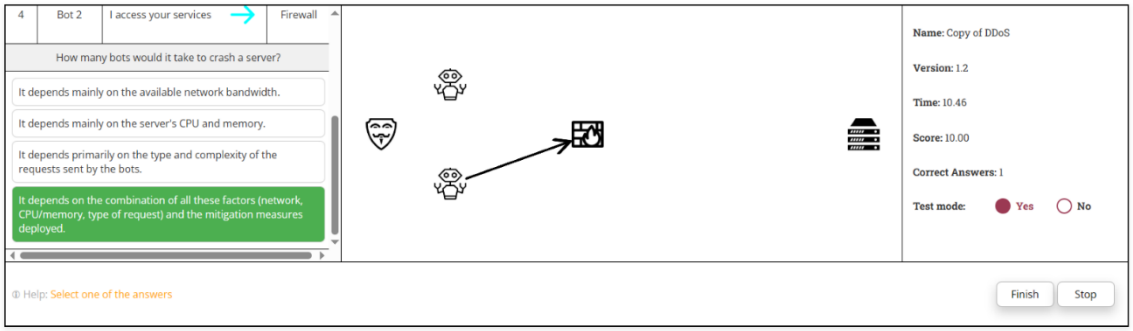


12. Simulation without test mode.



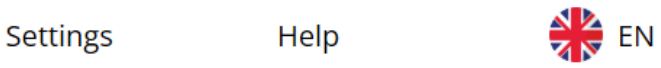
13. Phase theory.

If the test mode is selected, apart from the phases as we have seen in Illustration 11, test type questions will appear and the time, correct and score markers will be activated, this situation can be seen in Illustration 13.



14. Simulation with test.

1.3 Menu



15. Menu.

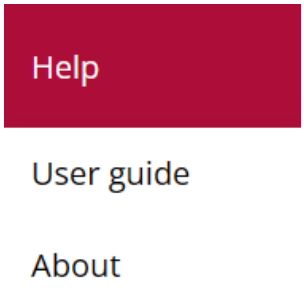
In this small menu we can choose between:

- Languages:

16. Languages.

This section of the menu is used to control the language of the website according to the user's preference.

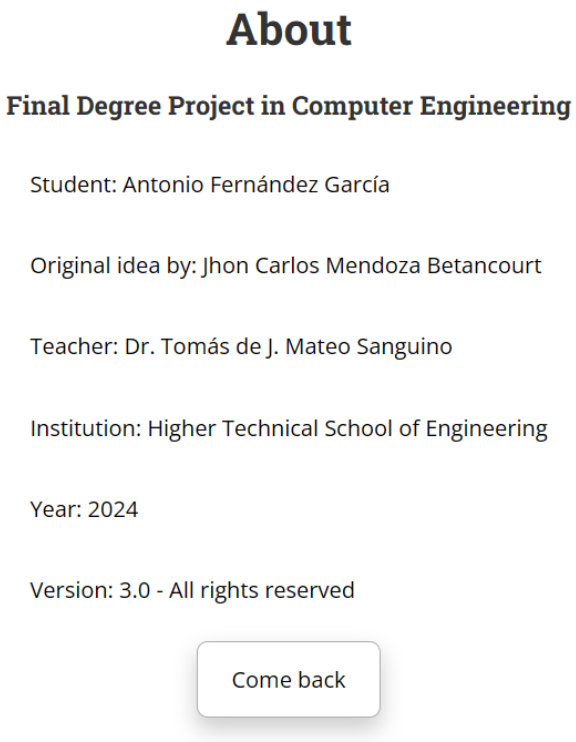
- Help:



17. Help.

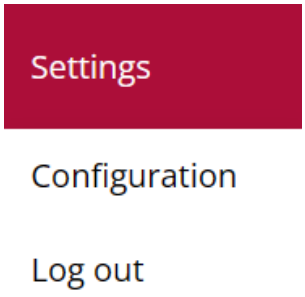
User guide: gives access to this guide, which explains the different functionalities offered by the application.

About: displays the following information.



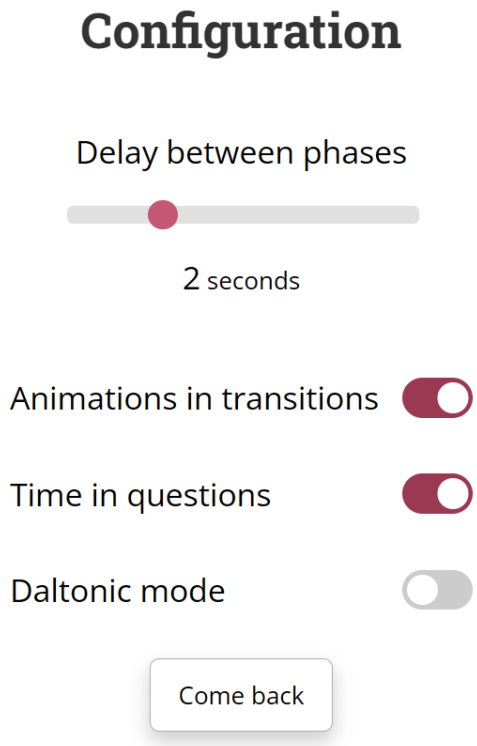
18. About.

- Settings:



19. Settings.

Configuration: gives access to the configuration options of the simulation.



20. Configuration Window.

Logout: Logs the user out and returns to login.