Manual

This is Group 2. We designed a website application for the Challenger 4 “Smart Building Data Access Management Scheme”.

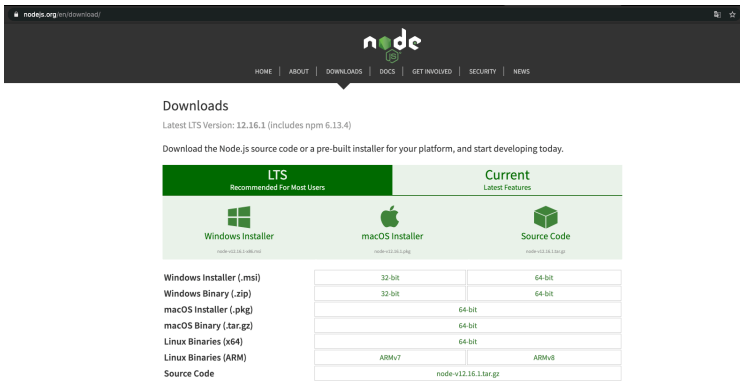
In order to run the website successfully in your own PC, you need to install the environment for node.js and MySQL.

1. Install necessary environment

   1.1 Download Node.js

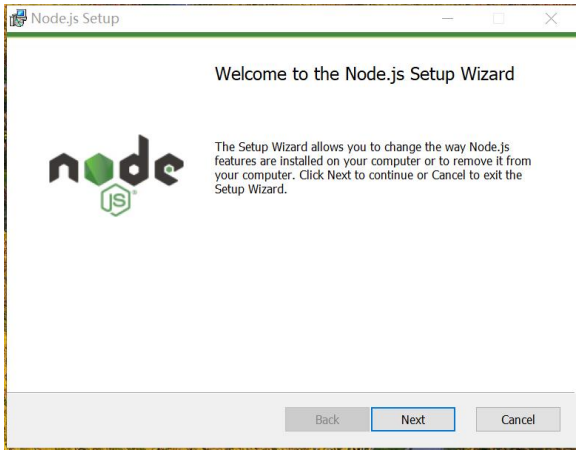
   Download address: https://nodejs.org/en/download/

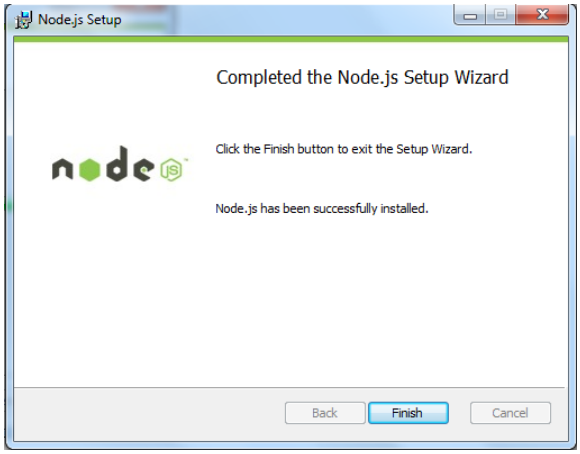
   Download the installer for your platform:



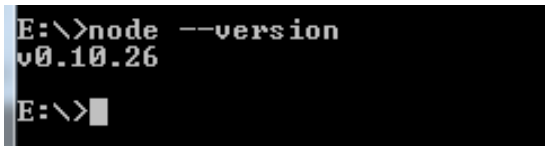
   1.2 For WINDOWS

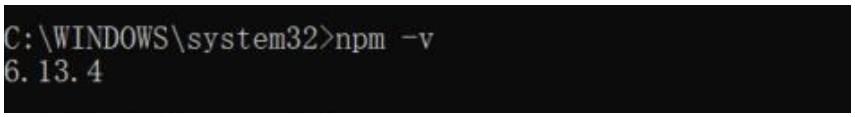
   Run the installer, install the node.js environment.





Then check the version of node and npm (Node Version Manager).





Next, use the npm command to install the Node.js web framework module express:

```
<C:\WINDOWS\system32>npm install express -g
<C:\WINDOWS\system32>npm install body-parser --save
<C:\WINDOWS\system32>npm install cookie-parser --save
<C:\WINDOWS\system32>npm install multer --save
<C:\WINDOWS\system32>npm install crypto --save
```

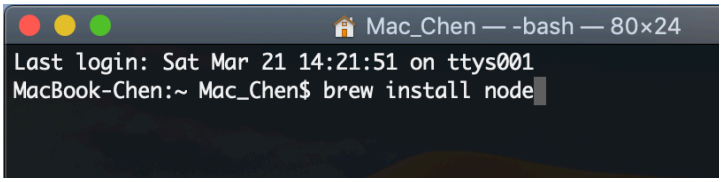
For MacOS

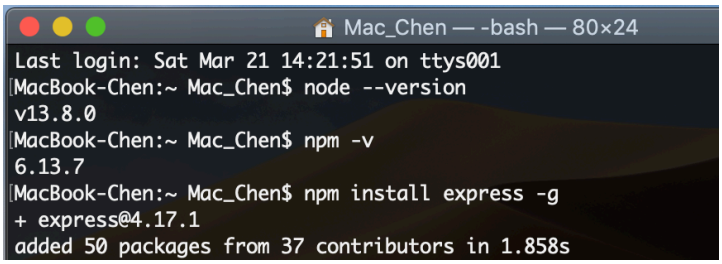
a) Method 1:

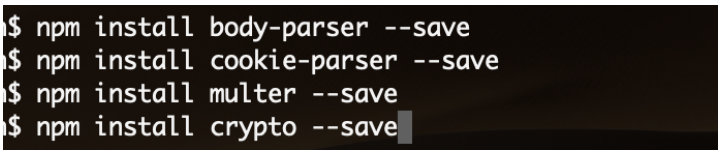
Download and run the pkg to install node.js.

b) Method 2:

Open the “Terminal”, install node.js and express module.



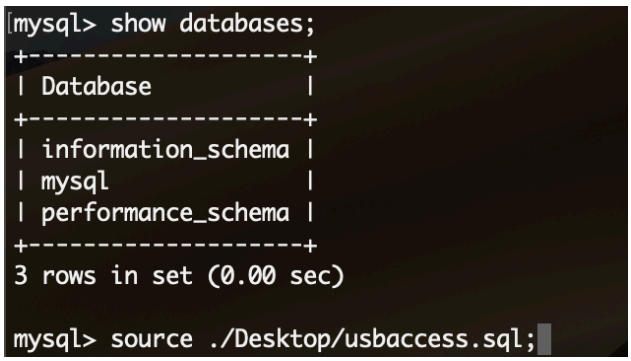




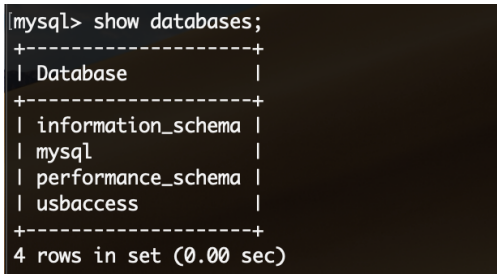
1.3 Install MySQL environment

Login MySQL as root: $ mysql -u root -p

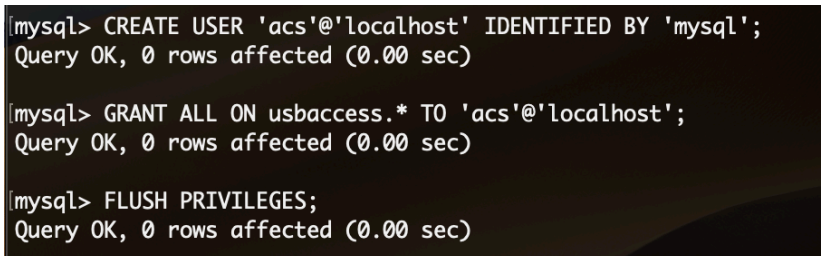
Import ‘usbaccess’ database:



Import successfully!

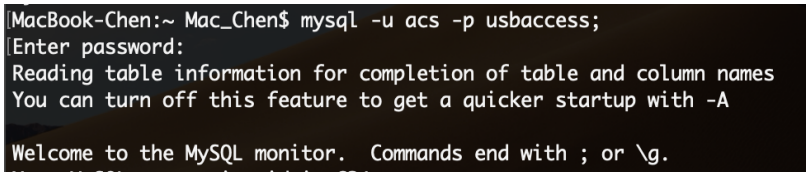


Create users and assign user permissions:



Exit:

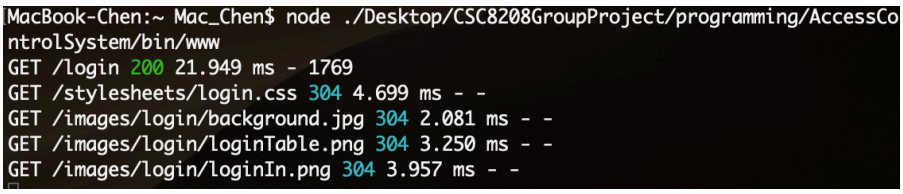
Test whether the user was created successfully:



2. Run the project

   Locate the project file and run the project in the terminal.

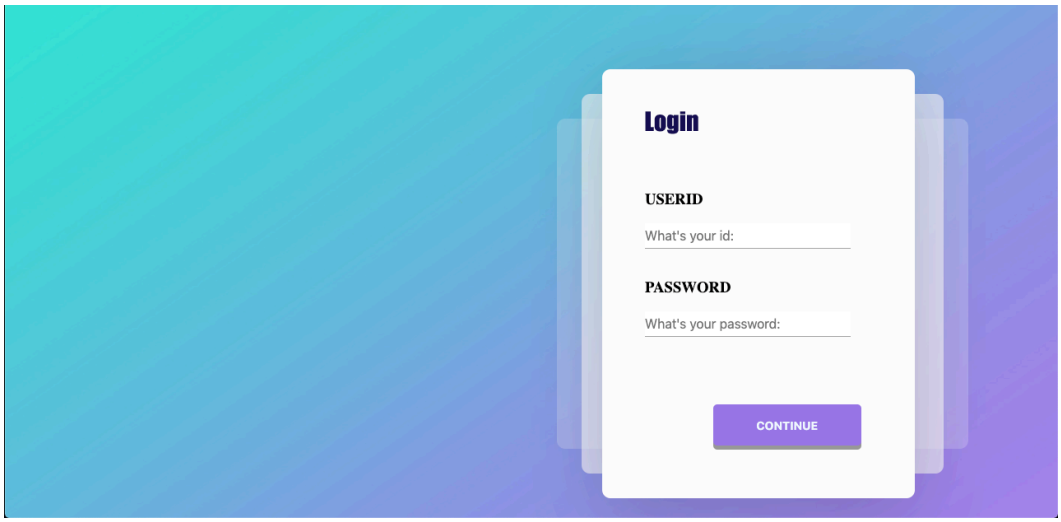
   $ node (path to the project) /AccessControlSystem/bin/www



3. Test

Open the web browser, and then input the URL:

http://localhost:3000/login



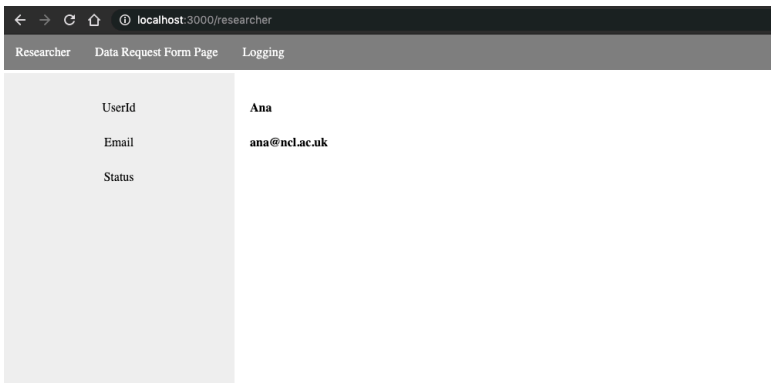
3.1 Login

user_id	password	dashboard		
Amy	123456	researcher	staff	school
Ana	123456	researcher	other	company
Ban	abc	occupant		
Bob	abc	occupant		
Cindy	code	both	student	university
David	code123	both	staff	university

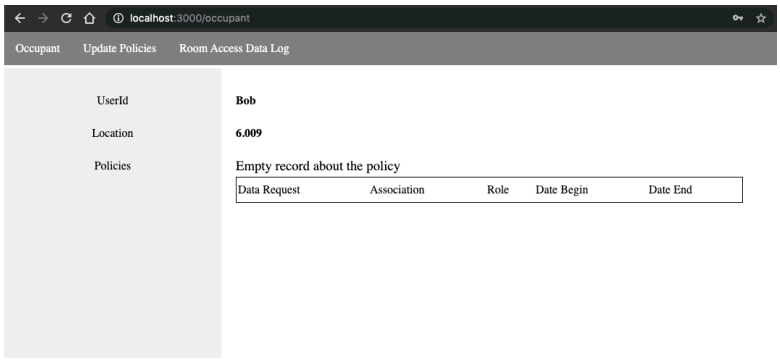
We have created these users previously. Only when the input “user_id” and “password” matches, you will be able to log in. Empty and input error will login failed.

3.2 Dashboard

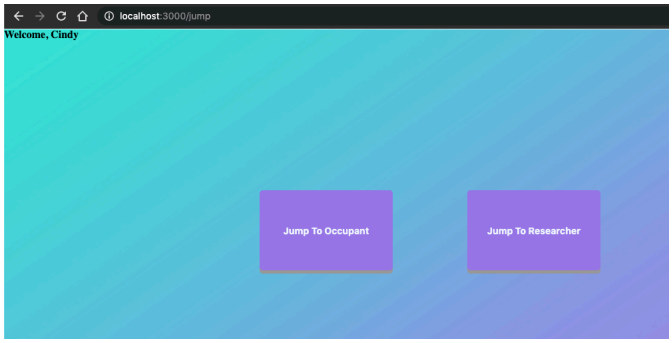
If you log in as a researcher (Amy/Ana), you will directly jump to page “/researcher”.



If you log in as an occupant (Ban, Bob), you will jump to page “/occupant”. (Initially, the database about the policies is empty, so the table about policy is empty. If this user has created some policies, they will be displayed in this table.)



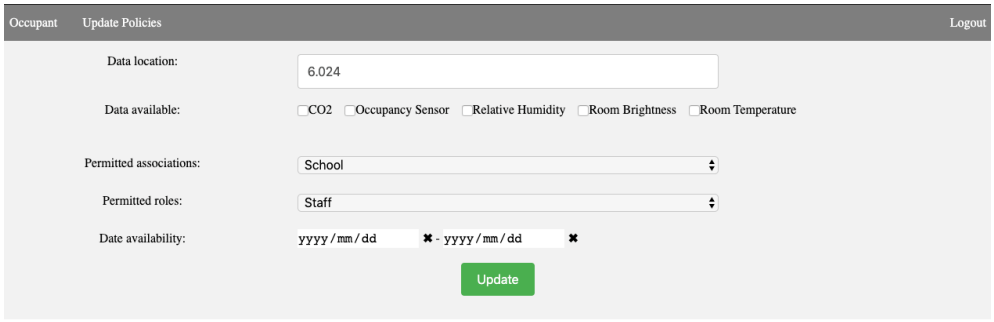
If you log in as researcher and occupant (Cindy, David), you will jump to page “/jump” and be able to make selection by yourself.



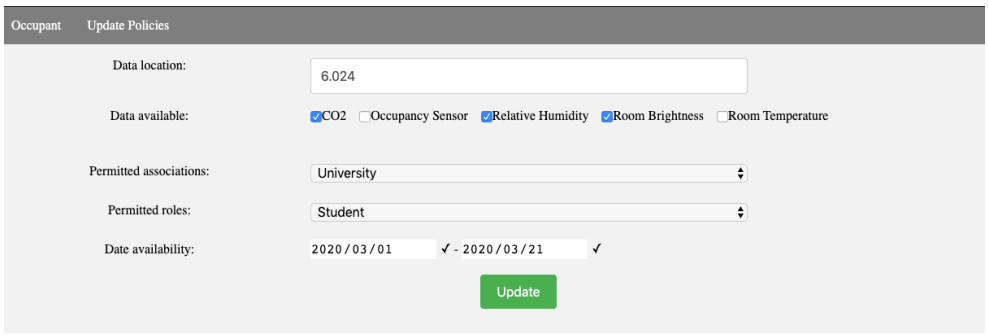
3.3 Occupant

Click the label “Occupant”, you will refresh and jump back to the page “/occupant”.

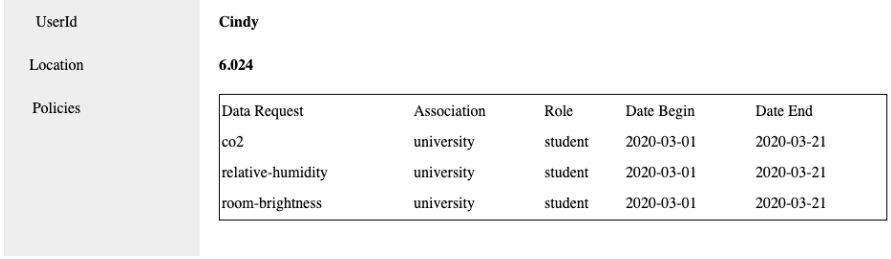
Chick the label “Update Policies”, you will jump to “/UpDatePolicy”. In this page, you will be able to set policies for the office “6.024”(The location is the user’s office and can’t be modified.)



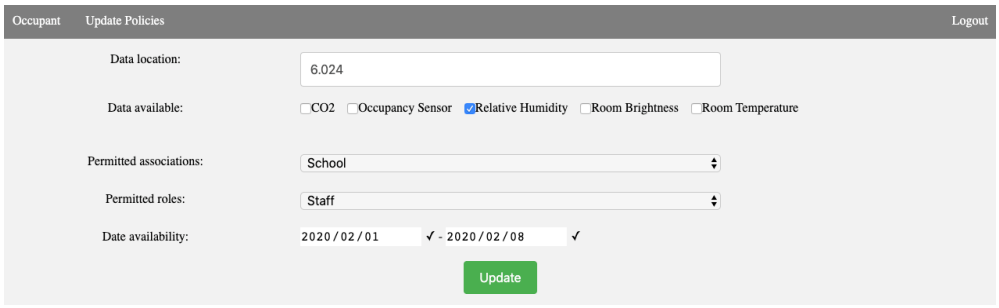
Then you can select the types of data, permitted associations, roles and available date and chick the “Update” to submit the policy.

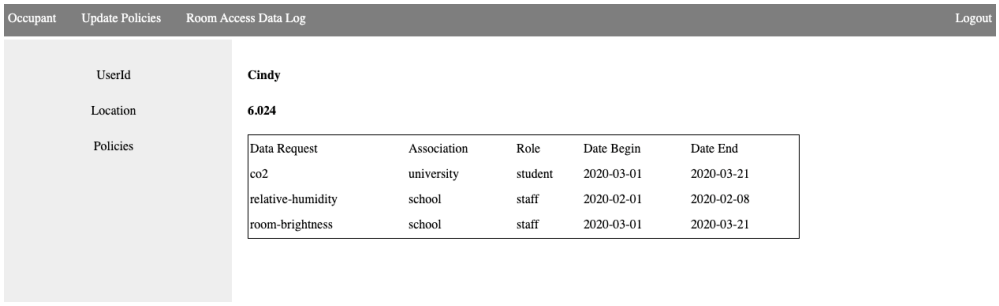


What you set will be displayed in the table.



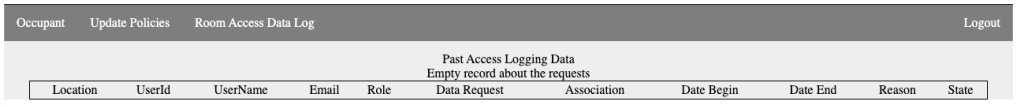
Sure, you can set separate policies for each type of data one by one or modify several together at the same time. The last policies will overwrite the older policies.





The policies are set up for the data location and the types. The association/role/date are the judgement of access control.

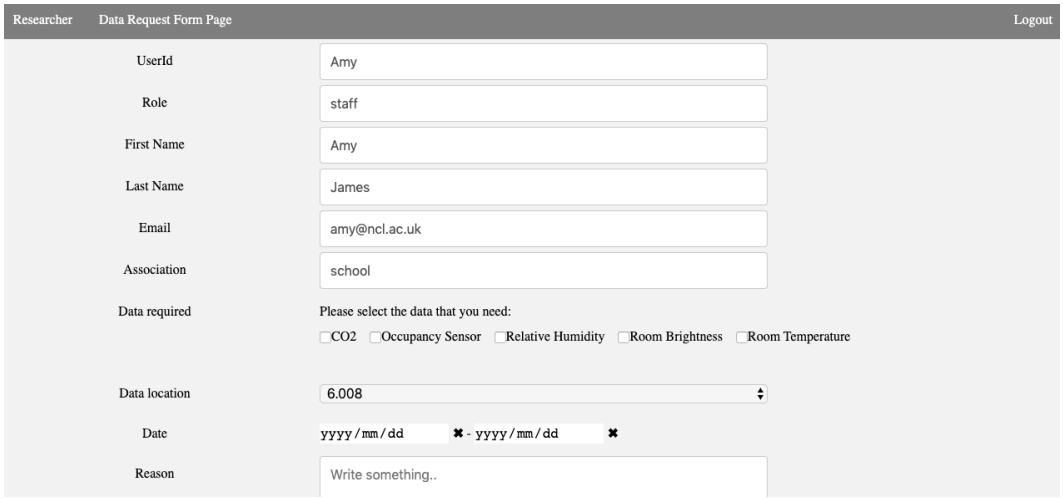
Click the label “Room Access Data Log”, the page “/RoomAccessDataLog” will display the past access records(accepted/denied) according to the location.



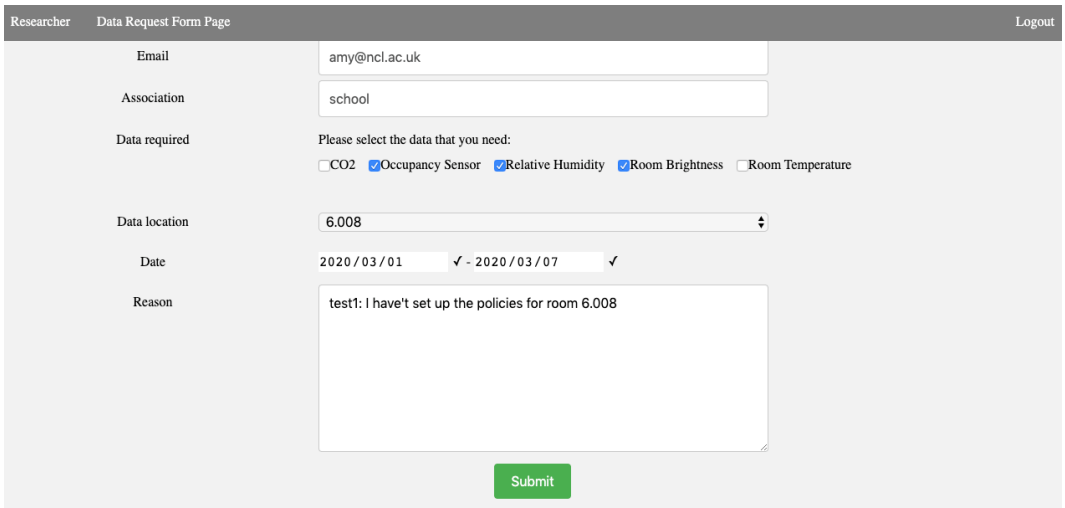
3.4 Researcher

Click the label “Researcher”, you will refresh and jump back to the page “/researcher”.

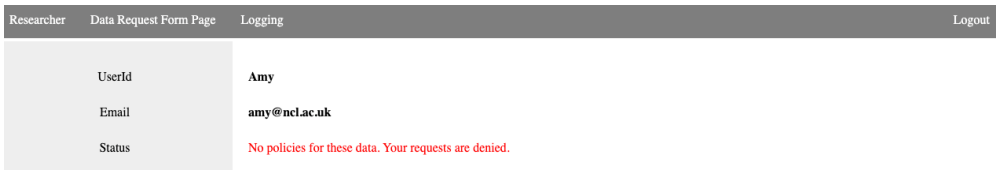
Chick the label “Data Request Form Page”, you will jump to “/DataRequestForm”. In this page, it will automatically display the user’s information (UserId, role, name, email address, association). These information can not be modified.



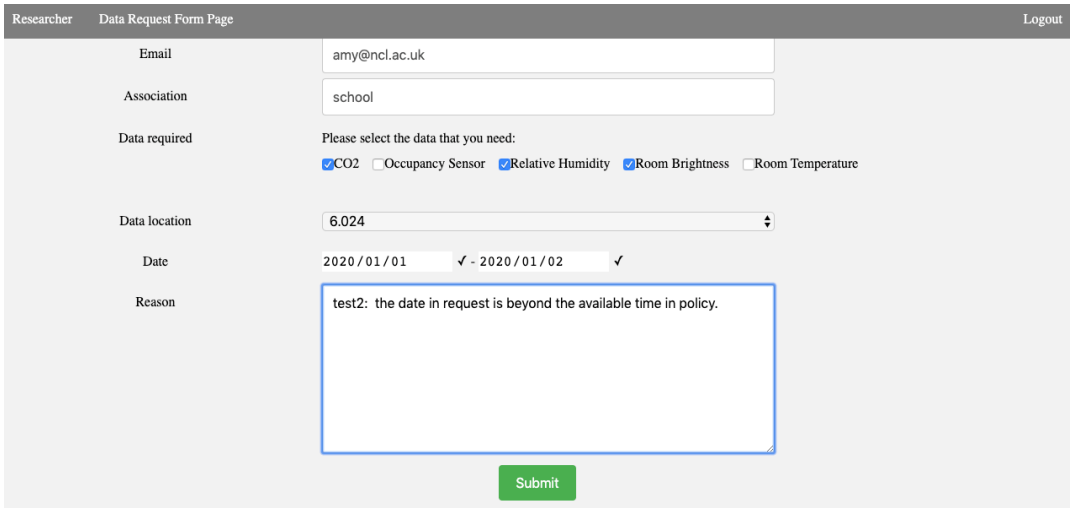
You can select the data which you need (single or several) and choose the office location, the date you want to apply. Next, click the “Submit” button to submit the request.



Because we have not set the policy for room 6.008. The request will be denied, and you will jump back to page “/researcher”.

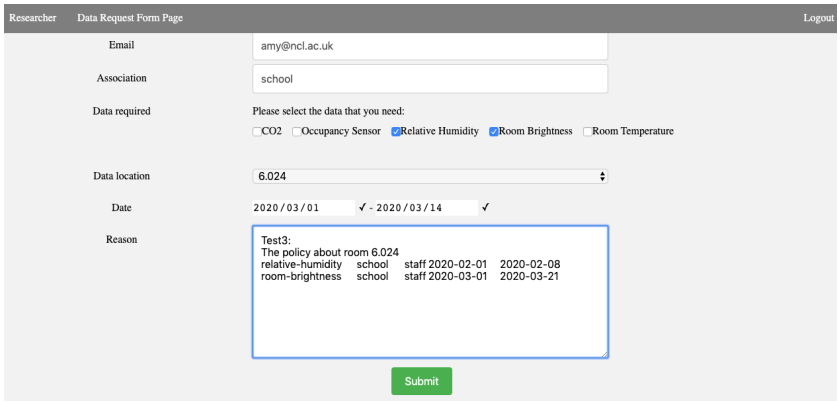


Here, we test to submit the request about room 6.024 which we have set policy in advanced.



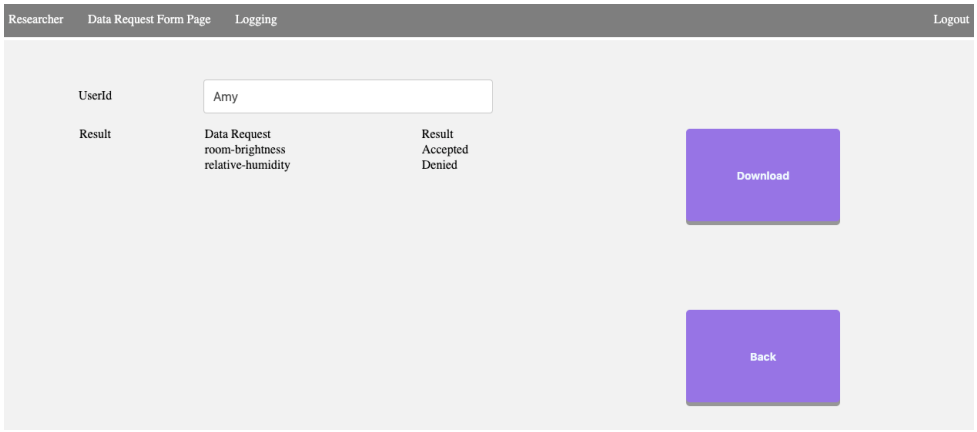
The required date in the request is beyond the limit of policy so the request is denied, too.

According to policy about room 6.024, the request about room-brightness will be accepted.



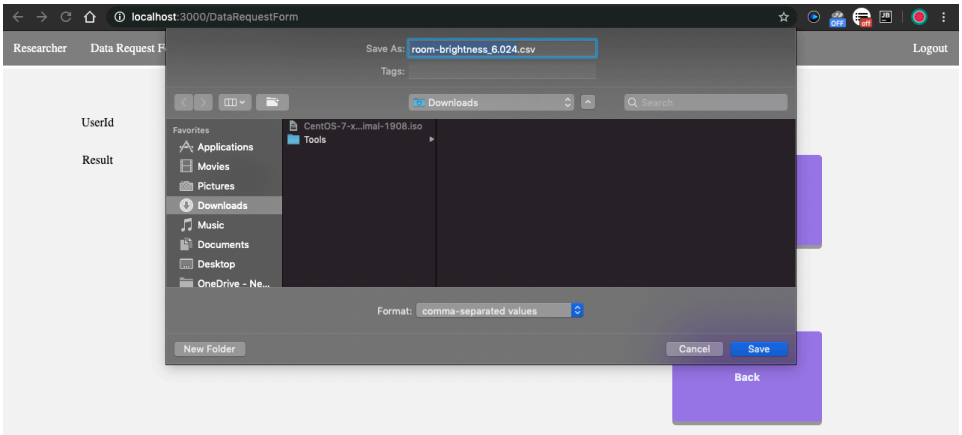
Occupants set up the policies for the data location and the types. And the judgement of access control will be depended on the researcher's association, role and request date.

As long as one of the requests is approved, it will jump to the new interface "/download". In this page, you will know which requests are accepted and which requests are denied.



So, right now you will be accepted to download the csv file containing the room-brightness data in room

6.024 from 03/01/2020 to 03/14/2020. Chick the download button to do that.

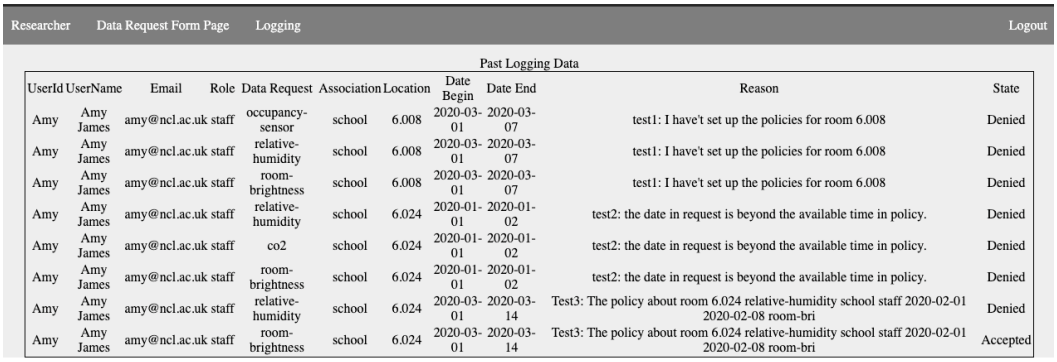


room-brightness_6.024

# URBAN OBSERVATORY (http://www.urbanobservatory.ac.uk/)		
# Licence info: http://www.urbanobservatory.ac.uk/licence/		
# Entity: Urban Sciences Building: Floor 6: Room 6.024		
# Metric: Room Brightness		
# Entity ID: f7452947-86c6-4737-b703-91aa58627b29		
# Feed ID: 513d67d1-ca28-45b4-b0ba-a38ae75d09b5		
# Timeseries ID: 9af7c8dc-1673-4169-a246-2cc38739f10d		
# Units: luxes		
# Stored in database as: Real		
time	value	duration / observation window
2020-03-14 23:59:56	266.24	-6.903
2020-03-14 23:57:52	250.88	-7.266
2020-03-14 23:57:17	266.24	-6.876
2020-03-14 23:56:45	250.88	-6.735
2020-03-14 23:09:32	266.24	-8.085
2020-03-14 23:09:00	250.88	-7.898

Click button “Back” to come back to page “/researcher”.

Click the label “Logging”, this page will present the historical records of this user’s requests.



3.5 Logout

In any page of dashboard, you can click the label “logout” to log out and come back to the interface of “/login”.

4. Finish