AutoMOSS User Manual

October 8, 2021

Contents

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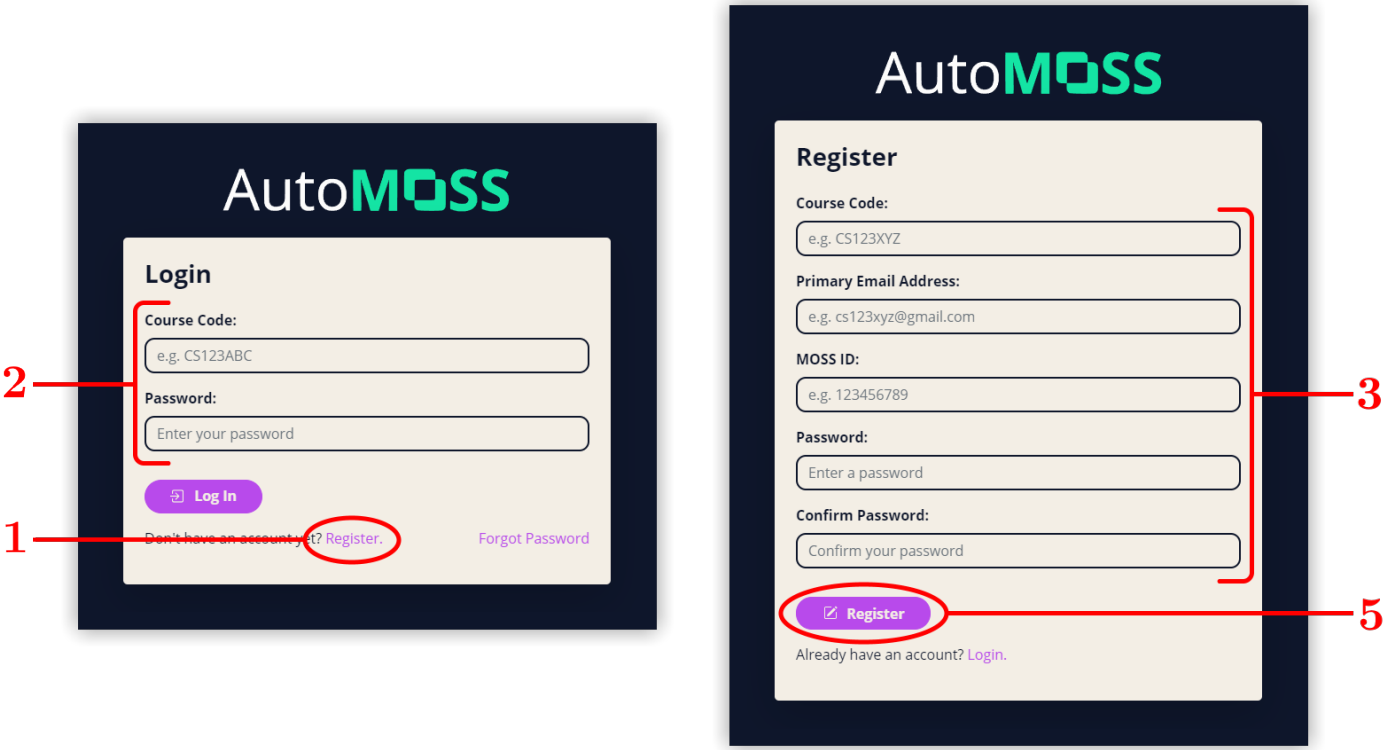
1 Usage

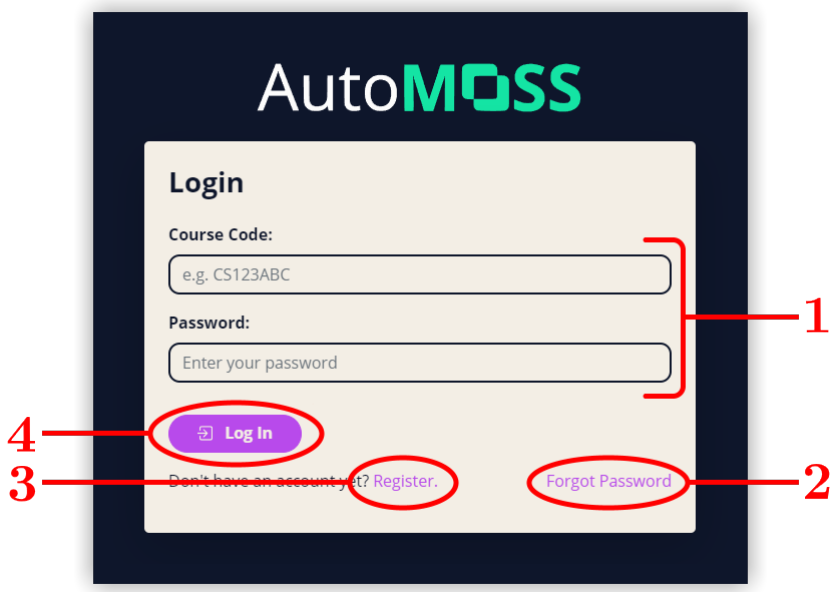
1.1 Register

1. Open the AutoMOSS WebApp and click on 'Register' at the bottom of the login form.
2. If you already have an account, you may instead login by entering your account's credentials and clicking the 'Login' button.
3. Enter your course's code, primary email address, Moss ID and password in their respective text input fields.
4. If you do not have a Moss ID yet, go to `http://moss.stanford.edu` and navigate to the section on 'Registering for Moss', where it will instruct you on how to obtain an account.
5. Next, click on the 'Register' button to submit a request for your account to be created. In the event the information you have entered is invalid, the form will update and indicate where the necessary changes need to be made.
6. Finally, verify your email by clicking on the verification link sent to your primary email address' inbox.



1.2 Login

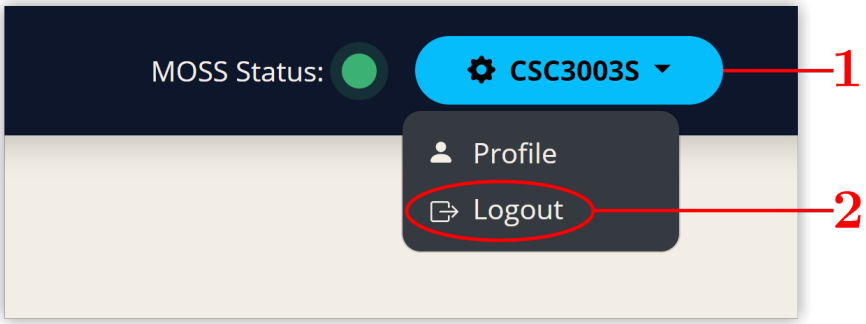
1. Open the AutoMOSS WebApp and enter your course's code and password in their respective text input fields.
2. If you have forgotten your password, you may reset it by clicking on 'Forgot Password' at the bottom-right corner of the form.
3. If you do not have an account, however, you will first need to register.
4. Finally, click on the 'Log In' button to log into your account. In the event the information you have entered is invalid, the form will update and display an appropriate error message.



1.3 Logout

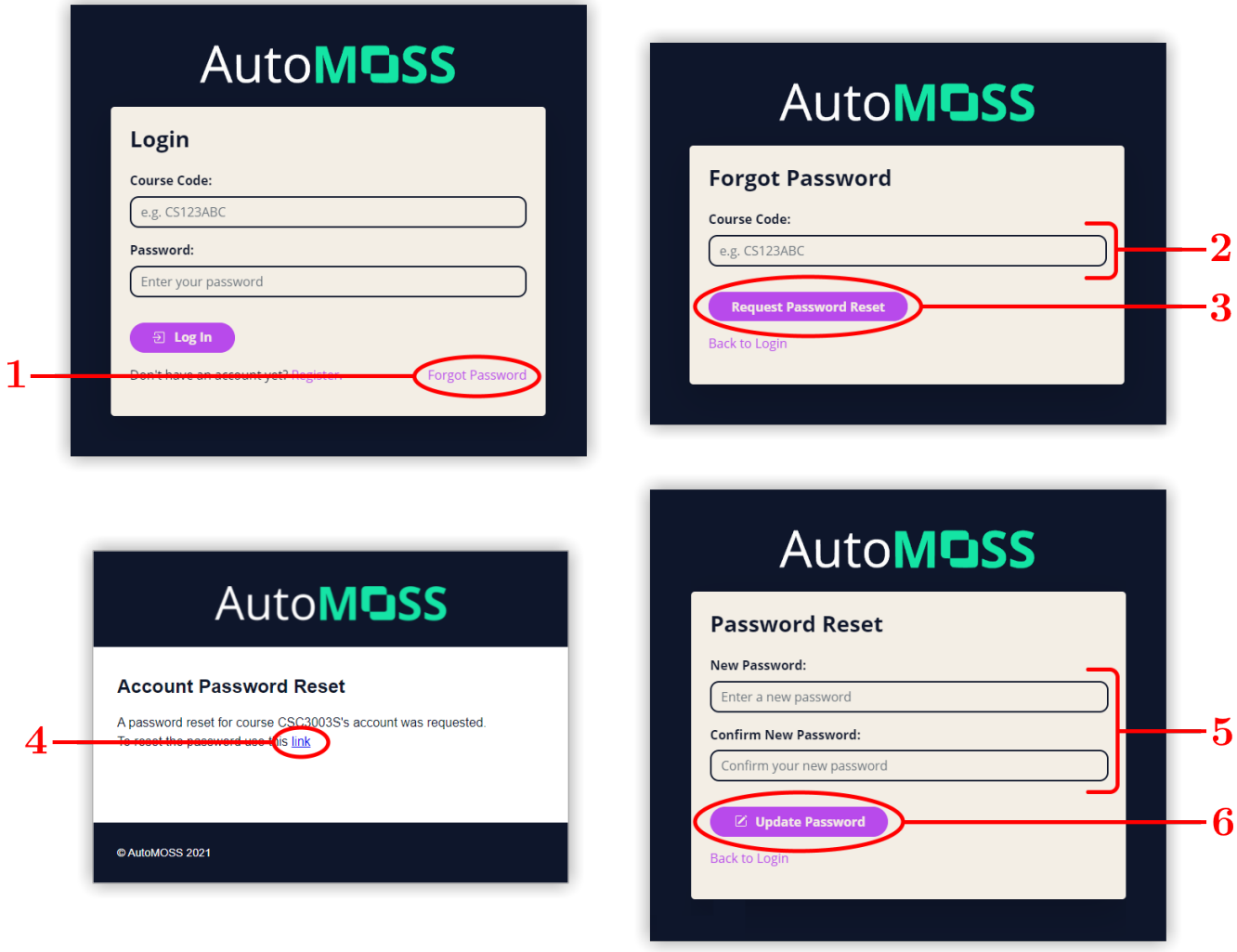
1. Navigate to the top-right corner of the AutoMOSS WebApp and click on your account's course code.

2. In the drop-down menu, select the option to 'Logout'.



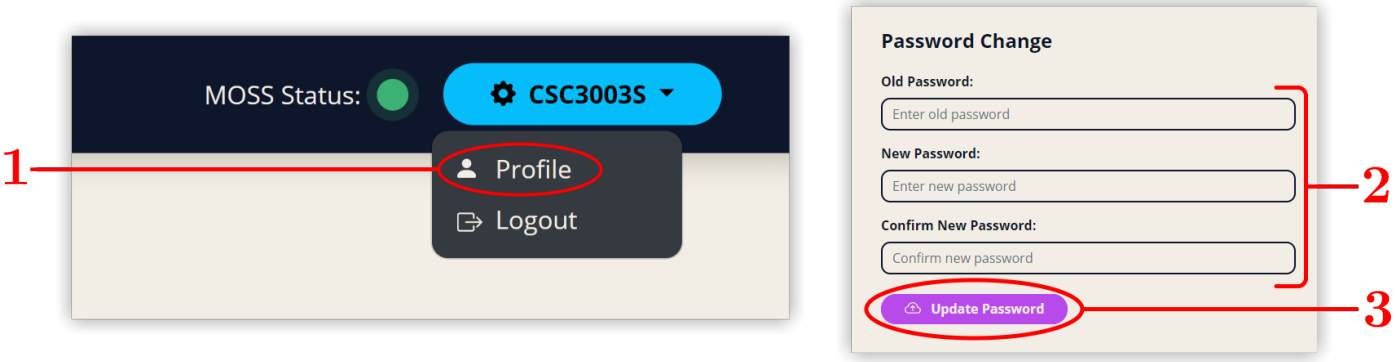
1.4 Reset a forgotten password

1. Open the AutoMOSS WebApp and click on 'Forgot Password' at the bottom right corner of the login form.
2. Enter your account's course code into the text input field.
3. Next, click on the 'Request Password Reset' button. An email will now have been sent to the primary email address associated with your account.
4. Go to this email's inbox and click on the password reset link. Please note that this may take several minutes to appear.
5. In the password reset form, enter your new password and confirm it.
6. Finally, click on the 'Update Password' button to update your account's password. You will now be able to login using this new password.



1.5 Change password

1. Navigate to your profile by clicking on the 'Profile' option in the account drop-down menu.
2. Under the 'Password Change' section, enter your old password and then your new password twice to confirm it.
3. Finally, click on the 'Update Password' button to update your password.
4. If you have forgotten your old password, you will instead need to reset it by first logging out, and then clicking on 'Forgot Password' at the bottom of the login form.

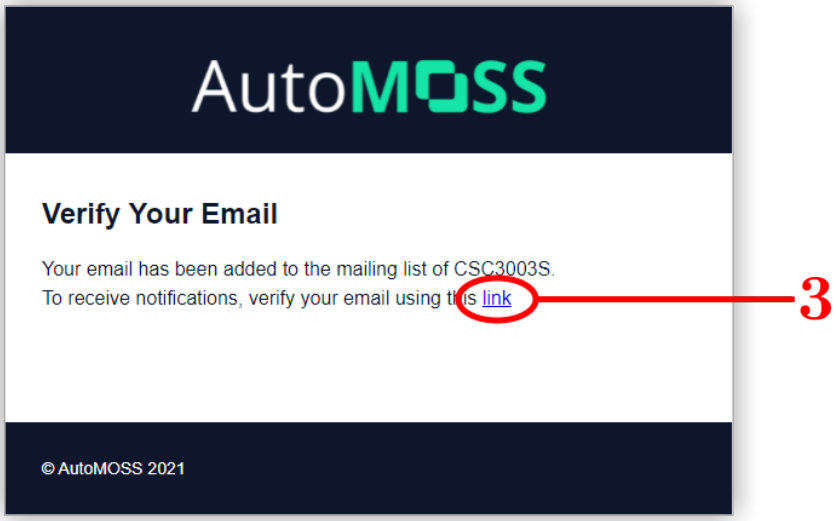


1.6 Verify email

1. In order to access the WebApp and/or receive job status updates from a mailing list, AutoMOSS requires that your email addresses have been verified.

2. Assuming you have either registered or updated a mailing list, refresh your inbox to check for a verification email that would have been sent to you. Please note that it may take several minutes to appear.

3. Click on the verification link in the email. This will open a page stating that your email has successfully been verified.



1.7 Update job status mailing list

1. Navigate to your profile by clicking on the 'Profile' option in the account drop-down menu.
2. Under the 'Mailing List' section, enter an email in the text input field and then click on the 'Add Email' button.
3. You can remove an email from the list by clicking the cross icon on an email entry.
4. Once you have finished adding all the necessary emails, click on the 'Update Mailing List' button.
5. A verification email will now have been sent to each of the unverified accounts in your list.
6. The status of tags on email entries will then update accordingly upon reloading the page.

1.8 Submit a new job

1. Open the job submission form by clicking on the 'Create Job' button above the submitted jobs table.

2. Drag and drop submission archives into the drop-zone or click on it to open a file browser to manually browse for and select them.

3. Submission archives can include either a single or batch of students. The format of batch submissions is not strict; the only requirements being that there exists a root directory that separates all students in a batch, and that students submit their source code as archives. The supported archive file formats include 'rar', 'tar', 'tar.bz2', 'tar.gz', 'tar.xz' and 'zip'. When a file is added, the type of submission (i.e., single or batch) and programming language are automatically detected.

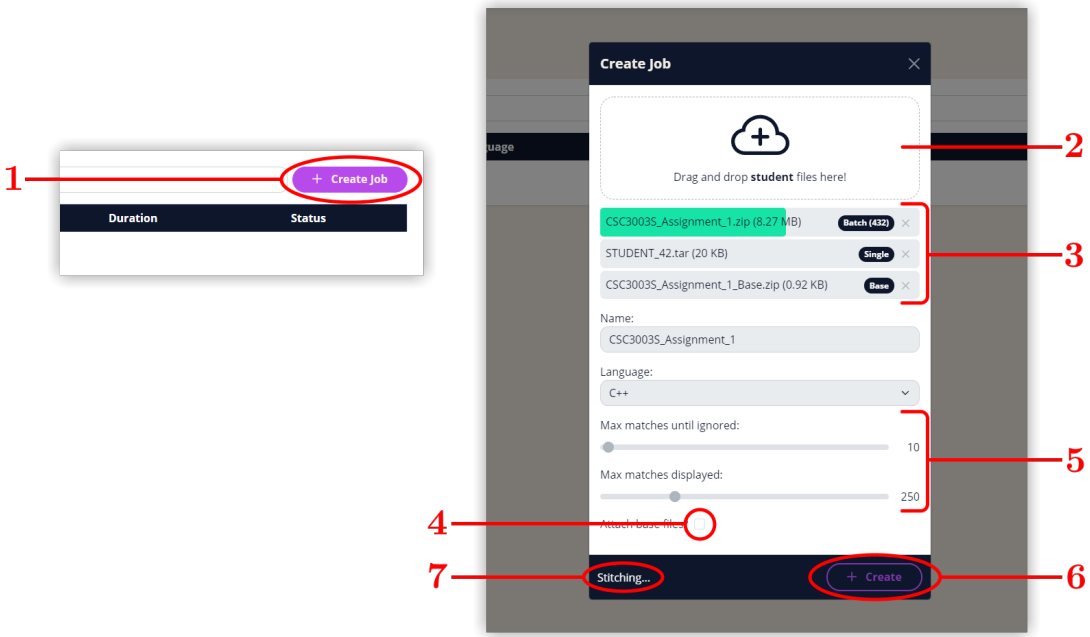
4. When toggled, you may also attach base files. This refers to code (usually provided to students by their lecturers) that is allowed to be used in students' code and, therefore, should not be considered by Moss.

5. Additionally, you can select the maximum number of matches to display, as well as the maximum number of matches allowed until a section of code is ignored by Moss.

6. Once ready, you can submit the job by clicking on the 'Create' button at the bottom of the form.

7. This will begin stitching each student's source code files together into single file from within your browser, to ease the load on Moss. The files will then be uploaded to the AutoMOSS server and placed in a queue to be sent to Moss, at which point, the form will close.

8. Your job will now be underway, and you can begin tracking the progress of it from the job submissions table.

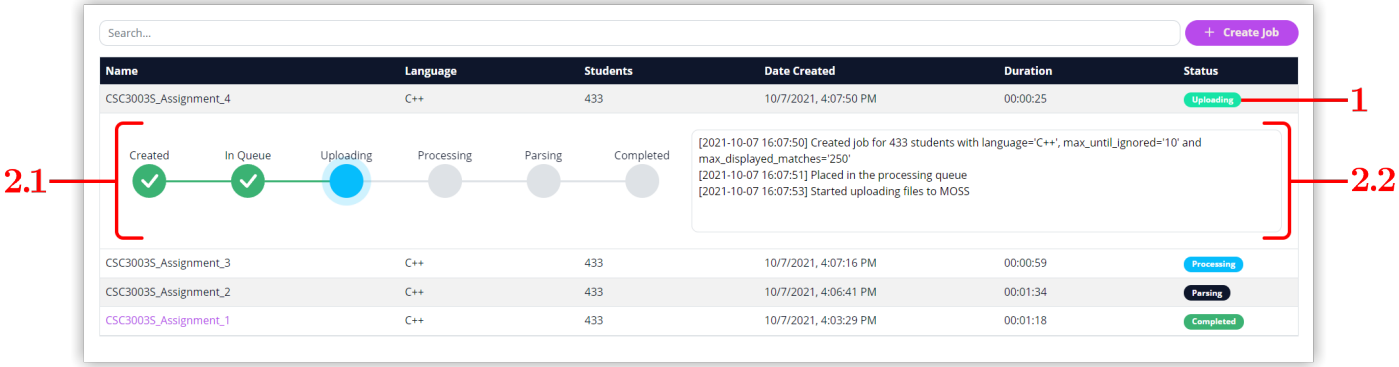


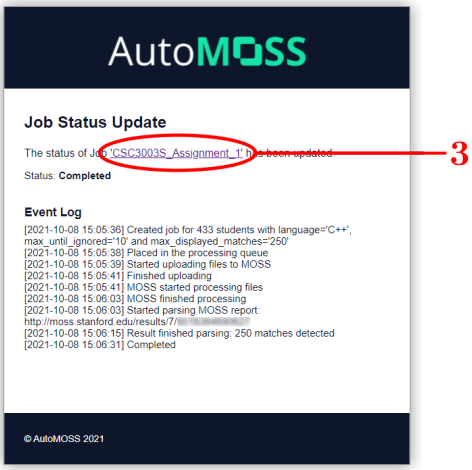
1.9 Track the progress of a submitted job

1. The jobs table shows the current status of jobs as a coloured badge in the last column. There are 6 different states a job can be in, namely: 'In Queue', 'Uploading', 'Processing', 'Parsing', 'Completed' or 'Failed'. The processing status encompasses all software similarity detection performed by Moss, which we are unable to monitor due to the 'black box' nature of their service.

2. By clicking on a row of the jobs table, you can more closely track the progress of your submitted job. The timeline (2.1) shows a quick overview of where the job is in its lifecycle, while the event logs (2.2) show a record of all the events that have taken place during the job's entire lifetime.

3. Finally, when the job reaches a terminal status (having either completed or failed), a notification will be sent to the primary email address and to all verified emails in the mailing list with a link to view the detected matches.





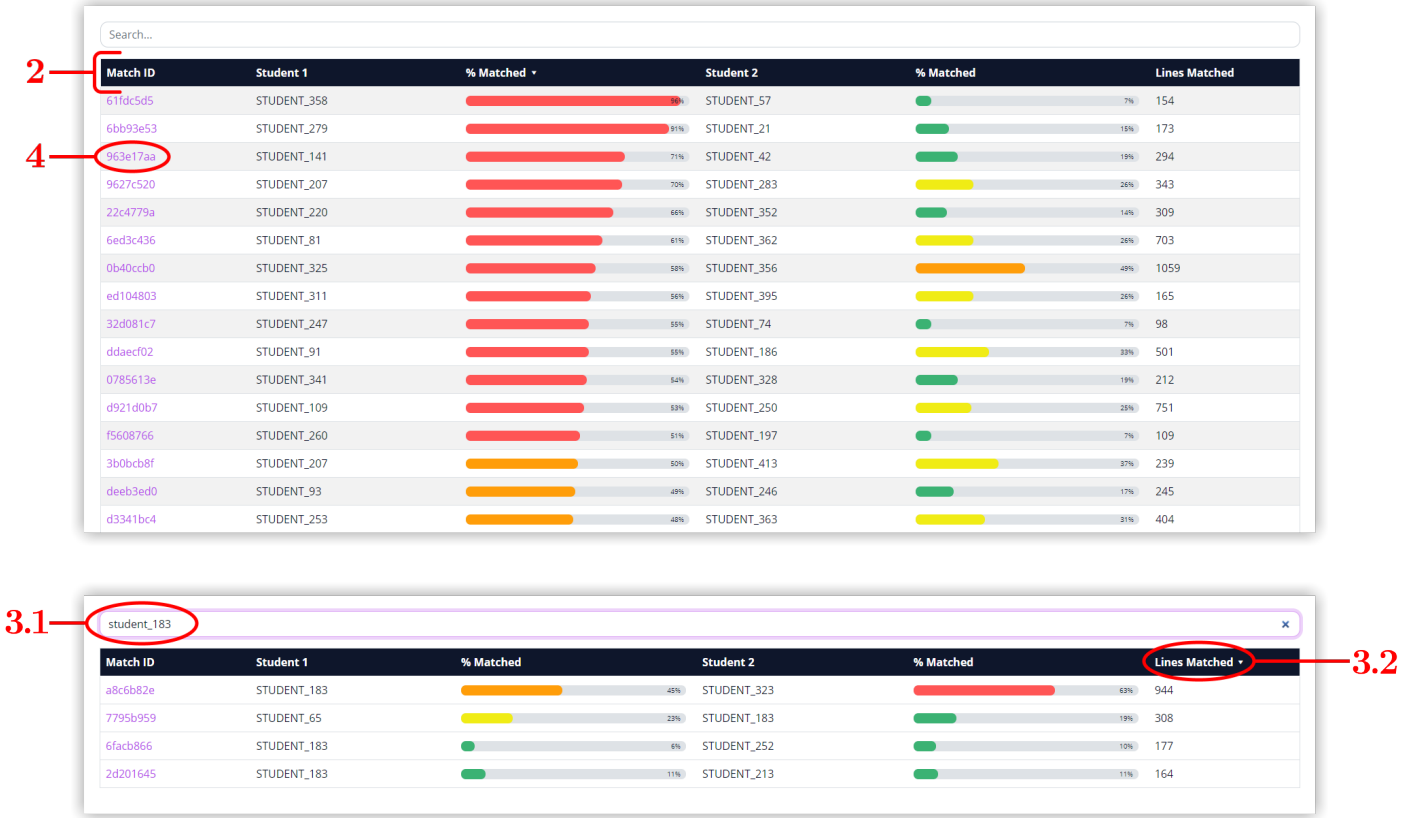
1.10 View matches for a completed job

1. Upon completion, a job's name will turn into a clickable hyperlink which loads the detected matches for that job when clicked.

2. The detected matches are presented in the form of a table, where each row represents a comparison between two students where similarities were detected. The '% Matched' for each student refers to the percentage of their code that was similar to code in the other student's code, while the 'Lines Matched' refers to the total number of lines of code detected to be similar.

3. Using the search bar (3.1), you can isolate a single match by entering the 'Match ID' or find all the instances where a particular student was involved by providing the name of the student. Clicking on column headings will also sort the table by that column (3.2) in either ascending or descending order.

4. Finally, the 'Match ID' can also be clicked to view the code matches between two students.

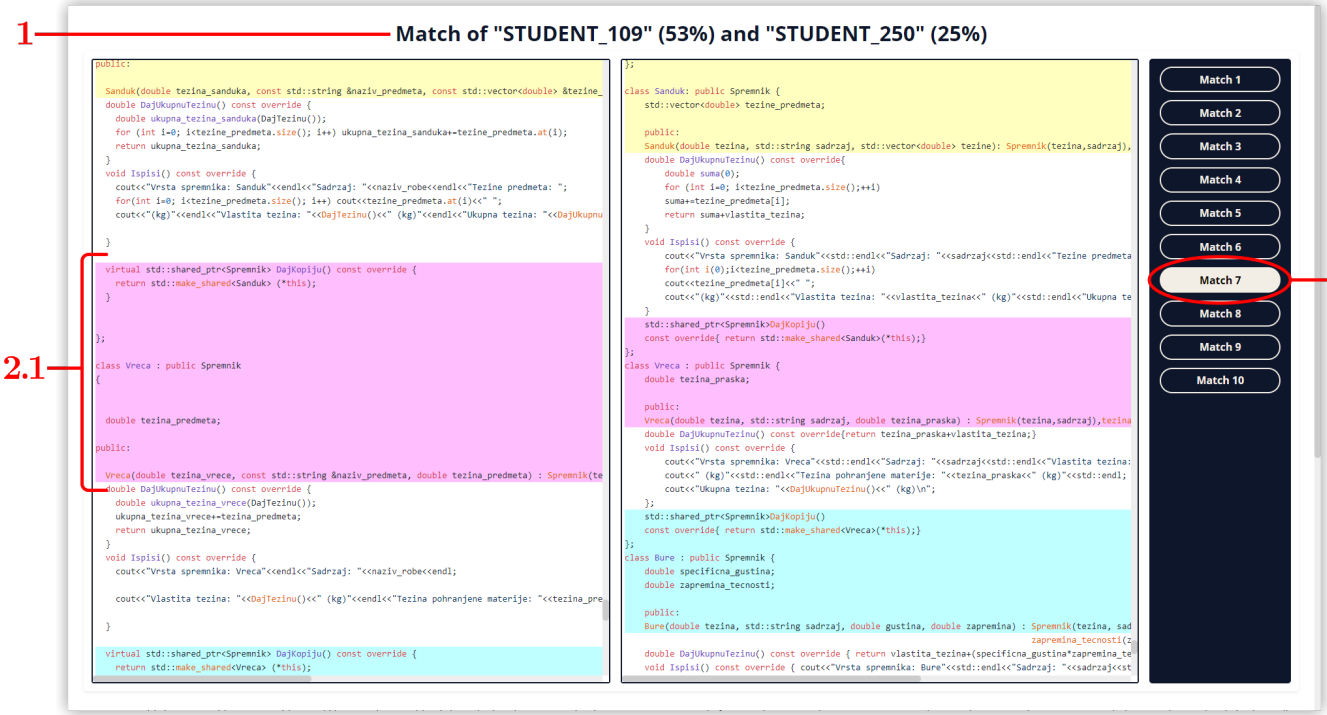


1.11 View matches between two students

1. When viewing the matches detected for a job, you can click on a 'Match ID' from any record to load the code analysis between two students where similarities where found. This displays two text areas containing all of the code found for each of the students. Stitched files are separated by '<<<file_name >>>'.

2. To quickly navigate to a specific match, you can click on a code block (3.1) or a match's number in the right sidebar (3.2), and both of the matches will scroll into view.

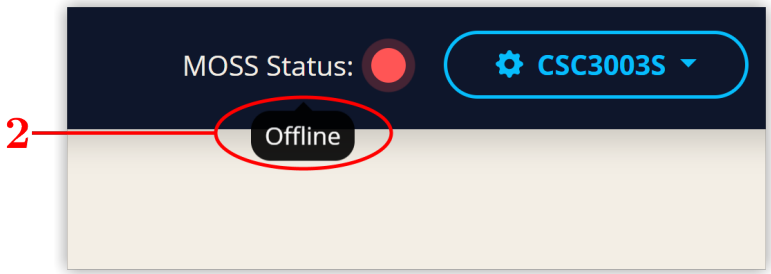
3. Finally, you can click on the 'Download' button above to generate an offline report to be viewed when disconnected from the internet.



1.12 View the status of Moss

1. The Moss server is known to be quite unstable and offline relatively often. For this reason, we added a pinging tool that shows the current status of Moss. It is located at the top right corner of the WebApp.

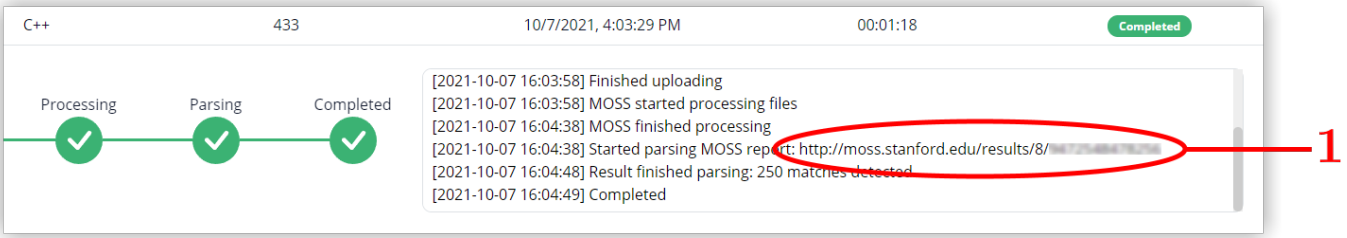
2. Moss' server can be in one of four states, namely: 'Online', 'Under Load', 'Under Severe Load' and 'Offline'. The colour of the ping is used to identify the state, but you can hover over it to reveal a tooltip for clarification.



1.13 View the original Moss-generated report

1. The link to original unparsed HTML report generated by Moss is included in the events log of a submitted job after it begins parsing.

2. Please note that this file will be removed from Moss' servers after 14 days.



1.14 Change account details

Currently, you are unable to change your primary email address and Moss ID from within the WebApp. Please contact support for further assistance with regards to this.

2 Installation Instructions

2.1 Run on a Server

1. Add a `automoss/.env` file with the correct information filled in. The following is an example of what variables are required. Please ensure that valid details are provided.

   ```
   SECRET_KEY=abcdefghijklmnopqrstuvwxyz1234567890

   HOST_NAME=http://localhost:8000

   DB_HOST=localhost
   DB_NAME=automoss
   DB_USER=automoss
   DB_PASSWORD=password

   EMAIL_HOST=smtp.example.com
   EMAIL_HOST_USER=example
   EMAIL_HOST_PASSWORD=password
   EMAIL_PORT=2525
   EMAIL_USE_TLS=False
   ```

2. Run `make install` to install the required dependencies.
3. Run `make run` to start the server.
4. Open a web browser and go to the WebApp (e.g., http://localhost:8000).

2.2 Deploy to Docker

1. From the main folder (which contains the `Dockerfile`), run the following command to build the image:

   ```
   docker build .  -t automoss
   ```

2. Once the image has been built (takes 5-10 minutes), run it with the following command:

   ```
   docker run -p 8000:80 --rm -it automoss
   ```

3. Open a web browser and go to the WebApp (e.g., http://localhost:8000).