

**SECURED-T**

**Lecturer Guide**

**Version 1.0**

**[03 August 2017]**

**Contents**

**LIST OF ILLUSTRATIONS ii**

**Preparation 1**

**Running The Programs: 1**

**Creating A Lecturer Account 1**

**Log In To The Account: 2**

**Managing The Modules 3**

**Managing The Assessments 3**

**Managing The Whitelist Domains 4**

**Managing The Announcements 6**

**Enter AssessmentID In Terminal 6**

**Starting The Assessment 7**

**Instructing The Students 7**

**Monitoring Students 8**

**List All Assessments 11**

**View Students’ Information 11**

**Checking The Submissions 12**

**Clearing Database 12**

**Shutdown The System 12**

#### **LIST OF ILLUSTRATIONS**

**Figures**

Figure 1: Running The Programs

Figure 2: The Four Terminals

Figure 3: Login Page

Figure 4: Home Page

Figure 5: Add Module From Home Page

Figure 6: Remove Module From Home Page

Figure 7: Add Assessment From Assessment Information Page

Figure 8: Delete Assessment

Figure 9: Tutorialspoint Url

Figure 10: Slack Url

Figure 11: Add Whitelist Domains From Whitelist Domain Page

Figure 12: Remove Whitelist Domains From Whitelist Domain Page

Figure 13: Exit Adding Of Whitelist Domains

Figure 14: Add Announcement From Home Page

Figure 15: AssessmentID Of A Particular Assessment

Figure 16: DNS Proxy Terminal

Figure 17: The Four Terminals After Inserting AssessmentID

Figure 18: Start Assessment

Figure 19: Monitor Status Of Students

Figure 20: Start Screen Capture And Keylogger

Figure 21: Stop Screen Capture And Keylogger

Figure 22: Student Cheating Notebook

Figure 23: Popup Alert Cheating Box

Figure 24: Stop Screen Capture And Keylogger When Cheating

Figure 25: Student Disconnected Notebook

Figure 26: Remove Student Disconnected Notebook

Figure 27: End Assessment

Figure 28: List Assessments Icon

Figure 29: View Students’ Information

Figure 30: Students’ Information

Figure 31: Clear Database Information

Figure 32: Logout From Web Application

Figure 33: Quitting The Four Terminals

Figure 34: Cleaning the Mininet

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#### **Preparation**

As the lecturer, the first step to using our system is to set up the router and power it on. Then, you can proceed to power on the lecturer notebook and then the Ubuntu image in VMware Workstation Pro.

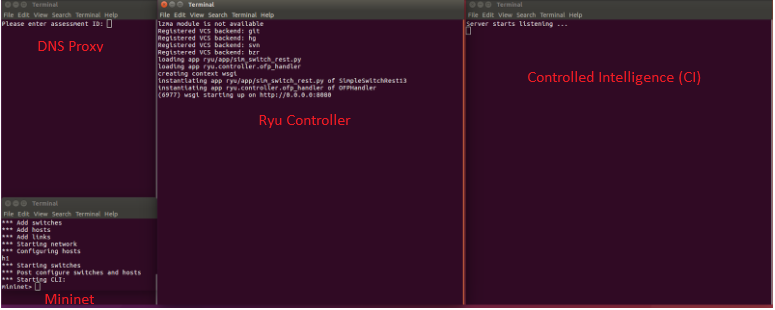
#### **Running The Programs:**

1. Once the Ubuntu image has booted up, open up a terminal on the taskbar on the left.
2. Type in the command ***sudo ./startAll.sh***.
3. Enter the sudo password for securedt.
   1. Password: ***1qwer$#@!***



**Figure 1: Running The Programs**

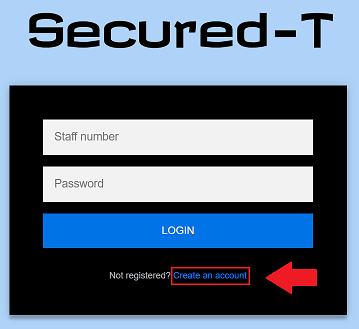
1. Wait for the terminals to appear. There should be 4 terminals in total.



**Figure 2: The Four Terminals**

#### **Creating A Lecturer Account**

1. Create an account on the lecturer web application, SecT, by browsing to ***secured-t/SecT*** on the base machine.
2. Click on the ‘Create an account’ link.

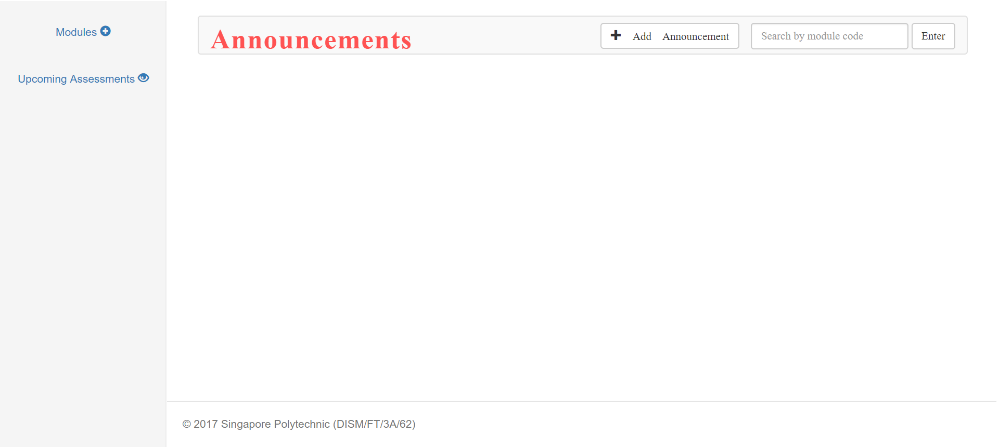


**Figure 3: Login Page**

1. Enter your staff number, name and password.
   1. Make sure your staff number is not more than 8 characters.
   2. Make sure your password contains alphabetic and numeric numbers and is 8-16 characters long.
   3. The staff number is unique in the database, therefore you cannot create another account with the same staff number.
2. After that, you will see a feature list as to what you can do on the web application.
3. Read it and then proceed to login.

#### **Log In To The Account:**

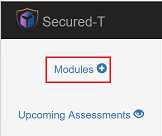
1. Enter your staff number and password for the account you have created earlier on.
2. You will be brought to the home page, where it will be pretty empty.



**Figure 4: Home Page**

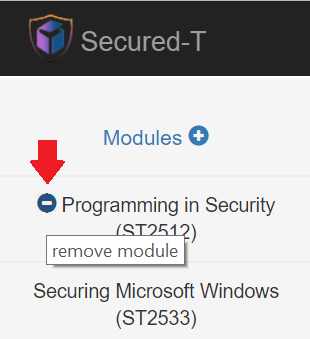
#### **Managing The Modules**

1. Click on the add modules button on the left-hand side.



**Figure 5: Add Module From Home Page**

1. Enter the module code (e.g. ST1234) and the module name.
2. Click Add.
3. You should see the module you have added earlier on displayed on the home page under the “Modules” button.
4. If you want to remove a module, mouse-over that particular module and click the (-) button.



**Figure 6: Remove Module From Home Page**

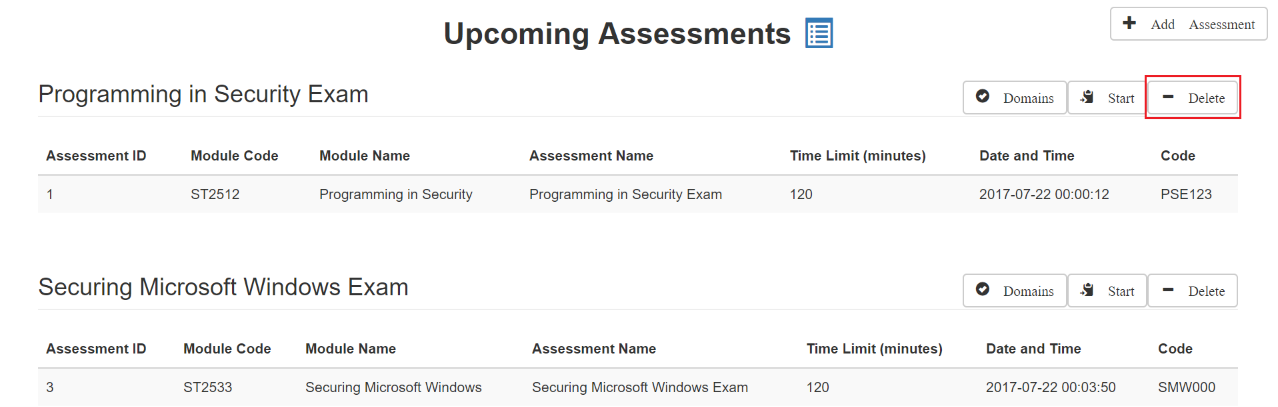
#### **Managing The Assessments**

1. At the home page, manage the assessments by clicking the upcoming assessments button.
2. Add an assessment by clicking on the add assessment button on the right-hand side.



**Figure 7: Add Assessment From Assessment Information Page**

1. Choose the module name and enter the assessment name, time limit of the assessment in minutes, date and time of the assessment and the exam code for students to enter to the assessment.
2. Click Done.
3. You should see the assessment you have added earlier on displayed on the home page under the “Upcoming Assessments” button.
4. If you want to remove an assessment, click Delete for the particular assessment under upcoming assessments.



**Figure 8: Delete Assessment**

#### **Managing The Whitelist Domains**

1. After adding an assessment, you can manage the whitelist domains allowed in the particular assessment by clicking on the domains button under upcoming assessments.
2. Before adding the whitelist domains, it is important to check if the website’s url contains “www.” at the start or not.
   1. For example, in the tutorialspoint url, you can see the “www.” at the start.



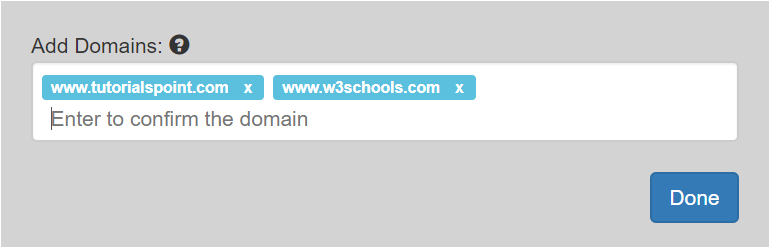
**Figure 9: Tutorialspoint Url**

* 1. Then in the slack url, you can see that there is no “www.” at the start.



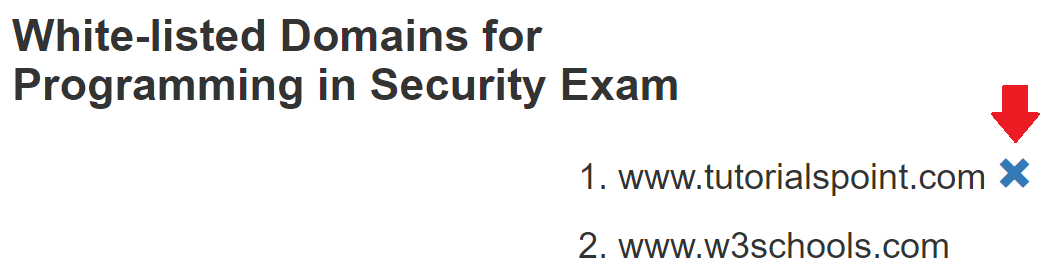
**Figure 10: Slack Url**

1. Add multiple whitelist domains by typing in the correct url in the input box and pressing enter on the keyboard.
2. Press the (x) button next to the domain names to cancel it.
3. After entering all the domains to be allowed in the particular assessment, click Done.



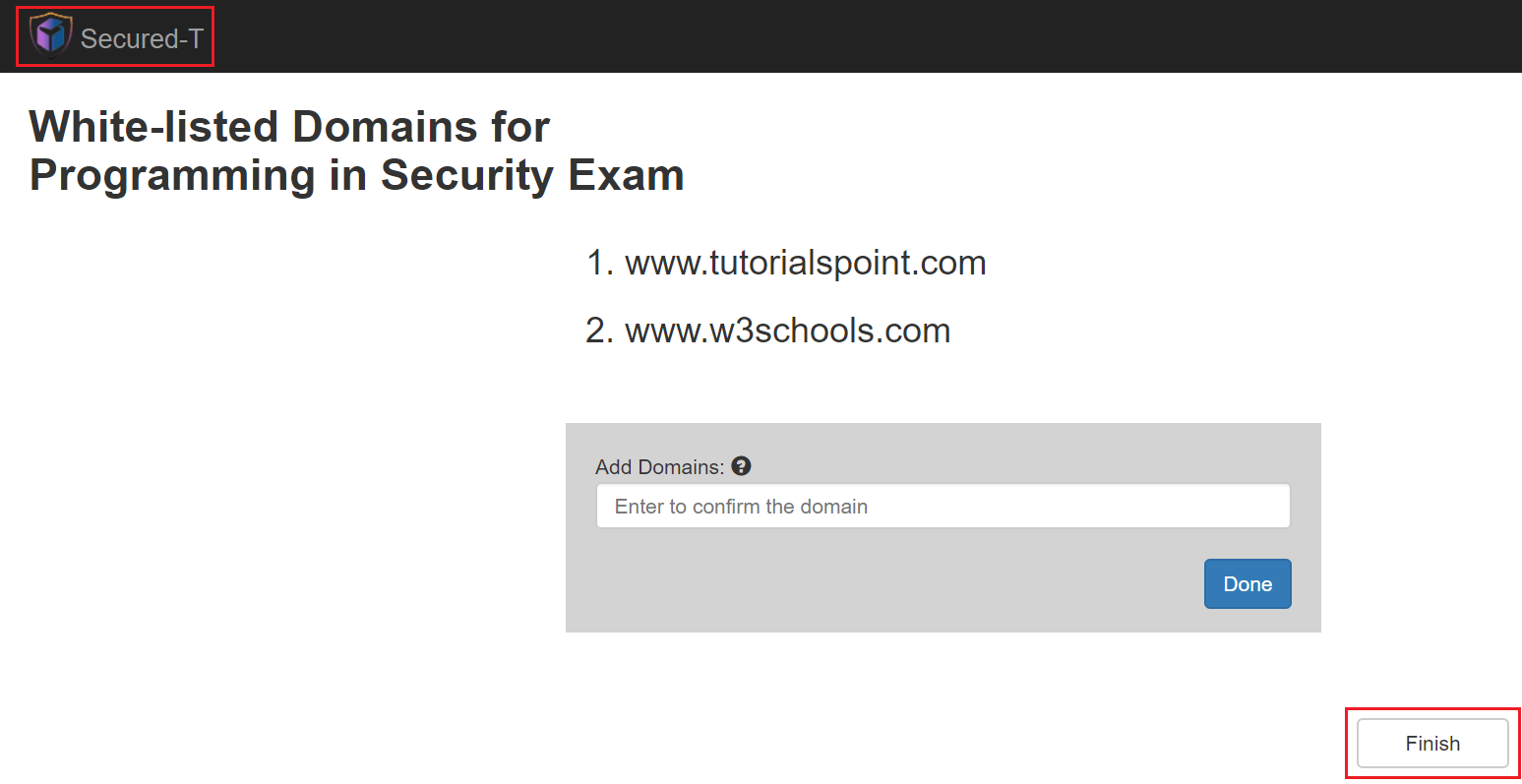
**Figure 11: Add Whitelist Domains From Whitelist Domain Page**

1. If you want to remove a whitelist domain after adding it already, mouse-over that particular domain and click the (x) button.



**Figure 12: Remove Whitelist Domains From Whitelist Domain Page**

1. Click Finish to go back to view the upcoming assessments or return to the home page by clicking on the Secured-T logo on the top left-hand corner.



**Figure 13: Exit Adding Of Whitelist Domains**

#### **Managing The Announcements**

1. At the home page, add announcements by clicking on the add announcement button.

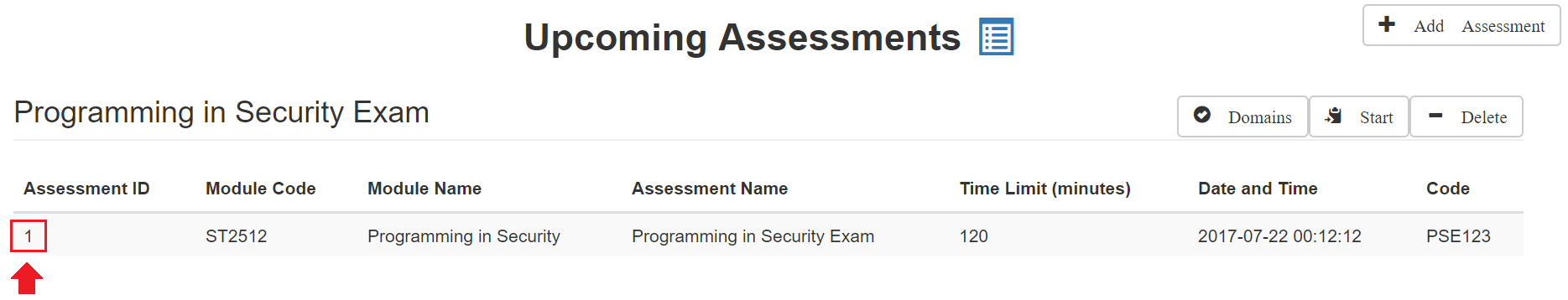


**Figure 14: Add Announcement From Home Page**

1. Choose the assessment you have added earlier on and type in the desired announcement.
2. Click Add.
3. You should be see the announcement you have added earlier on displayed at the home page.
   1. The announcements are arranged in descending order of the time it is added.
4. You can search for announcements by the module code in the search bar beside Add Announcement.

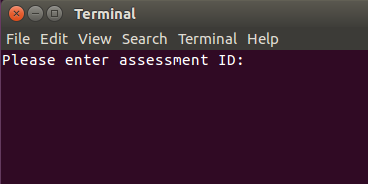
#### **Enter AssessmentID In Terminal**

1. After successfully creating assessments, with or without announcements, you can start the assessment.
2. Note the assessmentID that is shown in the upcoming assessments page.



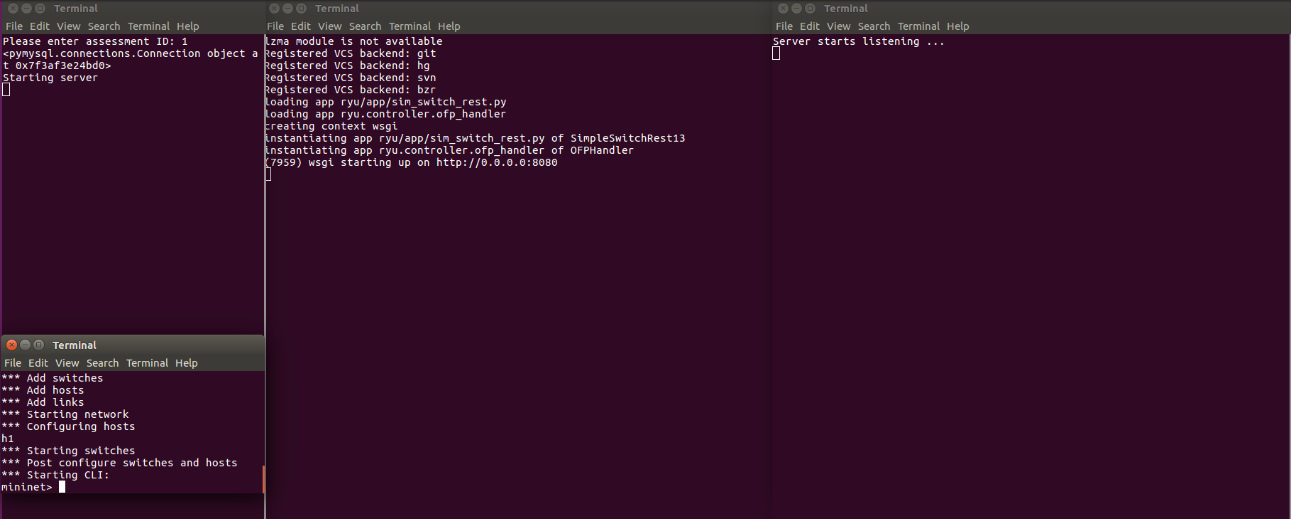
**Figure 15: AssessmentID Of A Particular Assessment**

1. Go back to the ubuntu image.
2. Enter the assessmentID into the DNS Proxy terminal.



**Figure 16: DNS Proxy Terminal**

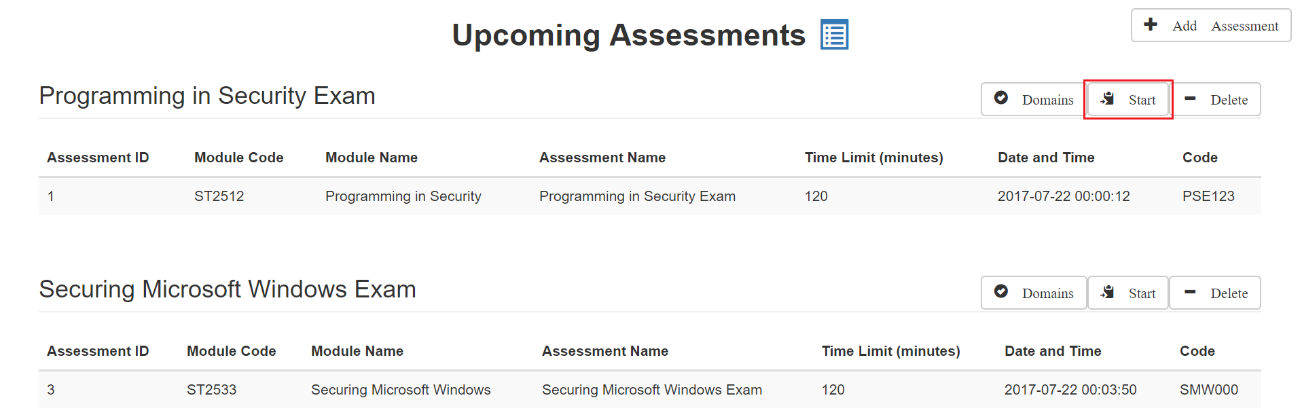
1. The 4 terminals should now look like the figure shown below.



**Figure 17: The Four Terminals After Inserting AssessmentID**

#### **Starting The Assessment**

1. At the upcoming assessments page, click the “Start” button in the middle of Domains and Delete.



**Figure 18: Start Assessment**

1. A new window will appear where you can monitor the student’s connection status to the network.

#### **Instructing The Students**

1. Write down the exam code you have set for the assessment on the whiteboard so that students can connect to the correct assessment.
2. Inform the students of the domains they are allowed to enter. It will be shown on the student’s web application, StudentSecT, as well.
3. Whenever a new announcement is added during the assessment period, inform the students as well.

#### **Monitoring Students**

1. On the display page, you will see the students connecting.
2. The numbers on the notebook represents the last octet of the student’s IP address.
3. Mouse-over the notebooks to see the details of the students such as their admission number, table number, full IP address, port number and the updated timestamp.



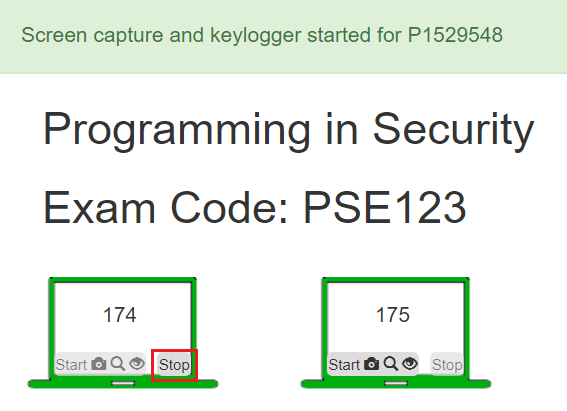
**Figure 19: Monitor Status Of Students**

1. When the notebook is green in colour, it represents that the student is obeying the rules and is not cheating or disconnected.
2. You can manually start the screen capture and keylogger if the student is suspicious by clicking on the Start button.
3. The screen capture and keylogger will be started in approximately 3-5 seconds.



**Figure 20: Start Screen Capture And Keylogger**

1. You can then stop the screen capture and keylogger after you think you have captured enough evidence.



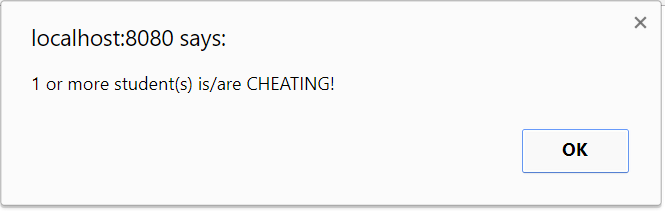
**Figure 21: Stop Screen Capture And Keylogger**

1. When the notebook is blue, it represents that the student is cheating. Screen capture and keylogging will be started automatically.



**Figure 22: Student Cheating Notebook**

1. An alert will also popup, telling you that 1 or more student(s) is/are cheating.



**Figure 23: Popup Alert Cheating Box**

1. You can then stop the screen capture and keylogger after confirming the student’s activity by clicking the stop button.



**Figure 24: Stop Screen Capture And Keylogger When Cheating**

1. When the connection is red, it represents that the student is disconnected. This could mean that the student has exited the website and/or network.



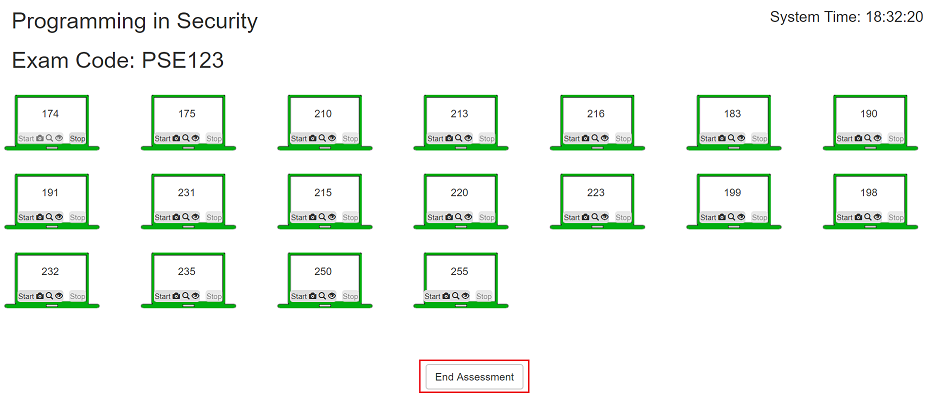
**Figure 25: Student Disconnected Notebook**

1. If the student is disconnected from the network, you must check to ensure that the student’s disconnection is not on purpose.
2. After checking, you can then remove the notebook from the display page to allow the student to login again if the reason is valid.
3. Mouse-over the notebook and click the (x) button to remove the notebook.



**Figure 26: Remove Student Disconnected Notebook**

1. After the assessment has ended, end the assessment properly by clicking on the “End Assessment” button.



**Figure 27: End Assessment**

1. If you have exited the browser without clicking that button, the assessment will be considered to be still in progress.

#### **List All Assessments**

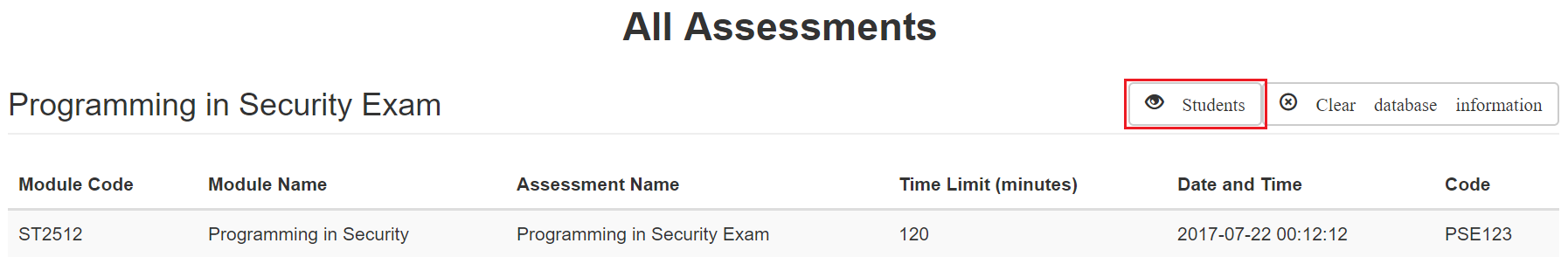
1. After the end of an assessment, you can review the list of assessments that have been hosted.
2. At the upcoming assessments page, click the icon that looks like a list beside the title “Upcoming Assessments”.



**Figure 28: List Assessments Icon**

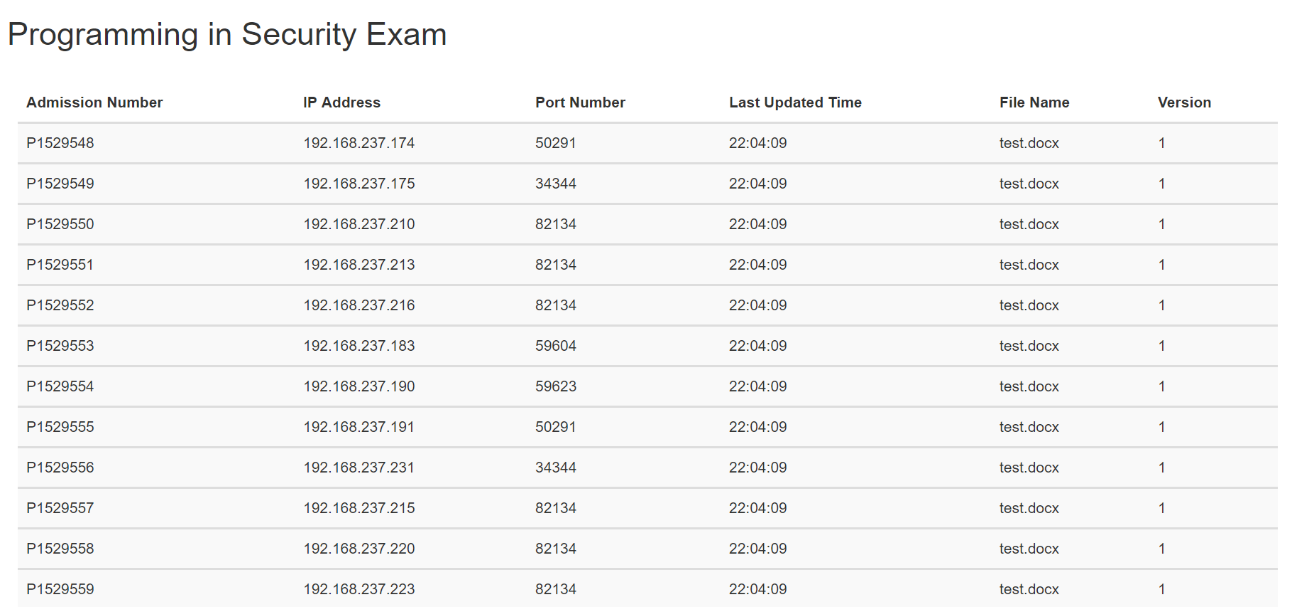
#### **View Students’ Information**

1. At the all assessments page, you can view the students’ information for the particular assessment.
2. Click the “Students” button.



**Figure 29: View Students’ Information**

1. At the student information page, you can see details such as the students’ admission number, IP address, port number, last updated time before they disconnect, filename of their last submission and the number of versions of submissions.



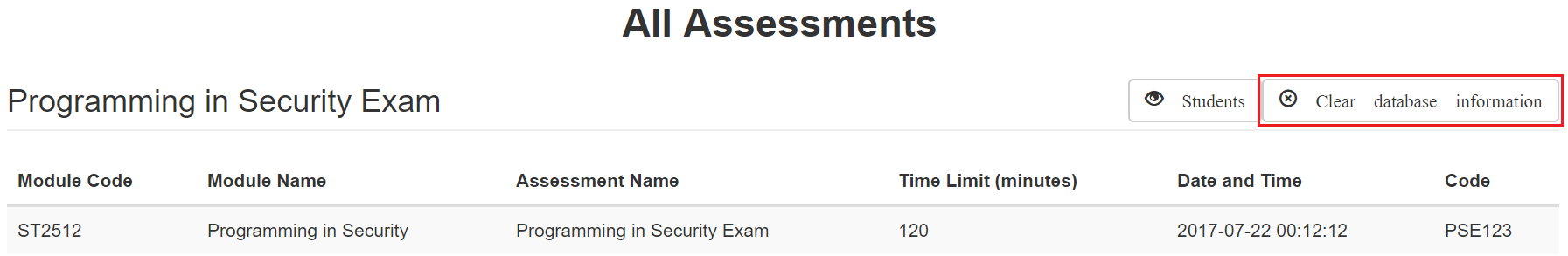
**Figure 30: Students’ Information**

#### **Checking The Submissions**

1. After the assessment has been completed, the submissions submitted by the students will be stored in the ***/home/securedt/submission*** folder.
2. Browse to that folder and you will see all the files. The files are named with the last octet of their IP address, followed by their admission number, followed by the filename.
   1. The last octet of the IP address and their admission number is inserted by the program, thus the filename does not have to include any identification of the students.

#### **Clearing Database**

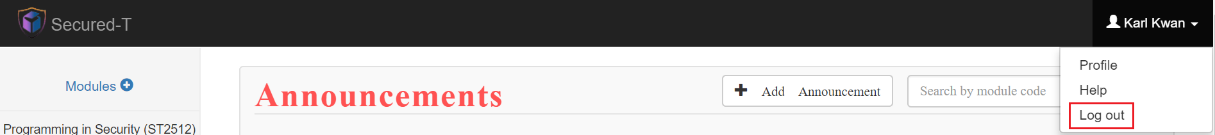
1. After the assessment has been completed and you think you no longer need information related to the assessment, you can clear the database related to that assessment.
   1. This includes the announcements, the students’ information, the whitelist domains and the assessment itself.
   2. The module will remain since you may need it for another assessment.
2. Please only clear the database when you are sure you no longer need the information since it cannot be reverted.
3. Click the “Clear database information” button to clear the database.



**Figure 31: Clear Database Information**

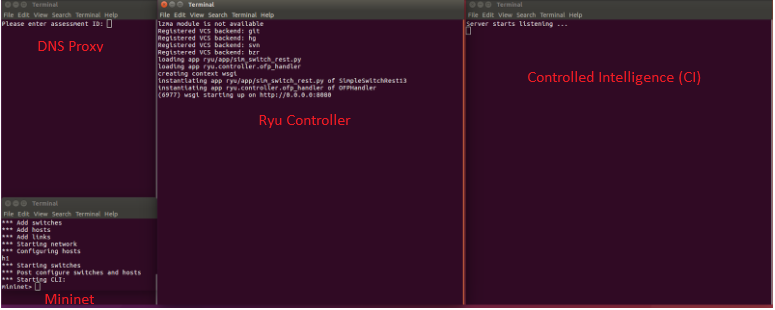
**Shutdown The System**

1. After you have done using SecT, logout from the web application and shut down the system.



**Figure 32: Logout From Web Application**

1. Press ***Ctrl+C*** to quit the DNS Proxy, CI Program and Ryu Controller.
   1. Make sure that no one is connected to the network before quitting the Ryu Controller.
   2. If you are sure that no one is connected but it cannot be closed, use ***Ctrl+Shift+\*** instead.
2. For the Mininet, type in ***exit*** to quit.



**Figure 33: Quitting The Four Terminals**

1. In addition, clean the Mininet configurations by running ***sudo mn -c***.
2. Enter the sudo password for securedt.
   1. Password: ***1qwer$#@!***



**Figure 34: Cleaning the Mininet**

**The End**