Student can only signed in within 15 minutes before the exam.

* In the exam schedule page, the last column shows the number of days remaining for the exam.
  + When the time is 15 minutes before the exam, a “sign in” button will show up.
  + When it comes to the exam start time, the “sign in” button will be replaced by text “finish”.
  + When “sign in” button is clicked, the server will first check whether the time is within 15 minutes before the exam.

However, for demonstration purpose, this time constraint will be temporarily removed, namely, the last column will always display the sign in button and the server side will not check the time when “sign in” button is clicked. But we will explain this mechanism to supervisor in demonstration.

After sign in, the following events will be triggered:

* Camera starts to grab image every 0.5 seconds.
  + The image is displayed in the student’s window.
  + The image is sent to the server and stored in database
* Poll identity verification.

examStatus: 0 -> not signed in; 1 -> signed in; 2 -> verified; 3 -> expelled; 4 -> finished

* if examStatus=2, stop polling verification, display questions, start exam timer. (The exam is supposed to start at the schedule time, however, for ease of demonstration, it is set to start when student is verified. The exam timer is used to automatically end the exam.)
* if examStatus=3, stop polling verification, stop grabbing image, but student can still send message to invigilator.
* Else, continue polling verification.
* Poll message

Check new message and display in the window.

“Save” button: save answer

* The button will be disabled when answer is successfully saved.
* The button is reactivated when student modify the answer so that answer can be saved again.

When exam is automatically ended:

* Stop grabbing image.
* Stop polling message.
* Go back to the exam schedule page.
* Server sets the exam status to Finished – 4.

When student click the “finish exam” button:

* A pop up window to remind student to saving all answers before finishing. (Because we won’t save the answers again when this button is click.) Student can check whether all “save” buttons are disabled. If so, all answers have been saved.
* If student click “confirm”, perform the same actions as when exam is automatically ended.

Test data:

Make sure the number of available questions should be more than the number of questions for the exam, or else the server will enter an infinite loop.

Test:

1. Login, when password is incorrect.
2. Student
3. Be able to add, edit and remove exam.
4. Add/edit exam, reject if the slot selected is full.
5. Be able to sign in exam.
6. When “save” (answer) is clicked and nothing is written for the answer, display error message.
7. Be able to save answer.
8. Be able to reactive “save” button when answer is modified.
9. Be able to display notice (message above video) :
10. Wait for camera
11. Wait for verification
12. Verified or expelled

and video.

1. Be able to display questions after verification.
2. Be able to send message.
3. Be able to display message in real time. (needs interaction with invigilator)