



# BRAIN STATION 23

## Proctoring Pro v2.0.1

### User Manual

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Proctoring Plugin Pro v2.0.1 .....	3
User Manual Documentation.....	3
Introduction .....	3
Key Features.....	3
Installation Process.....	4
Initial Setup Configuration .....	4
Updating Plugin Settings .....	7
Upload User Images .....	7
1. User List .....	7
2. Search Bar .....	8
3. Filter Categories.....	8
4. Upload Multiple Images (ZIP File) .....	8
5. Detect Button (Face Analysis) .....	9
6. Upload/Update/Delete Specific User Images.....	9
Configuring a Quiz: .....	10
Attempting the Quiz .....	10
Browser Compatibility of the Proctoring Plugin.....	14
FAQs:.....	15

# Proctoring Plugin Pro v2.0.1

## User Manual Documentation

### Introduction

The **Proctoring Plugin Pro** is a quizaccess plugin for **Moodle**, designed to capture images of users via their webcam during quiz attempts. It verifies user identities and monitors suspicious activities, such as copying/pasting, opening the console, resizing the screen, or switching tabs. The plugin automatically captures webcam snapshots every 30 seconds (which can be adjusted dynamically), saving them as PNG files and logging any suspicious behavior with timestamps. Administrators can review the images after exams for verification using AWS Face Rekognition or the BS Face Matching API.

### Key Features

- **Webcam Image Capture:** Automatically captures webcam images of users during quiz attempts to verify their identity.
- **Quiz Access Control:** Prevents users from starting the quiz unless their webcam is enabled.
- **Image Storage and Management:** Stores captured images as small PNG files in Moodle's data directory. These images can be deleted individually or in bulk.
- **Attempted Users List:** Lists all users who have attempted the quiz, along with their suspicious activity, with search and filtering options available.
- **Proctoring Logs:** Provides detailed logs of suspicious activities and webcam images for each user, including timestamps and event descriptions.
- **Configurable Capture Options:** Allows administrators to set custom image sizes and capture intervals according to their needs.
- **Face Recognition Integration:** Compatible with services such as AWS Face Rekognition for identity verification by matching captured images with admin-uploaded photos.
- **Bulk Photo Upload:** Allows admins to upload photos for multiple users at once via a zip file or upload individual photos.
- **Photo Filtering:** Admins can filter users based on whether their photo is uploaded or if the user's face is missing from the image.
- **Suspicious Activity Detection:**
  - Ensures that the webcam remains enabled throughout the quiz attempt.
  - Monitors if the user switches to another browser tab or application.
  - Tracks screen resizing during the quiz.
  - Logs incidents of copying/pasting.
  - Detects if the F12 key (developer tools) is pressed.
- **PDF Report Generation:** Generates a detailed PDF report for each user, containing all logged events and captured images.

- **Suspicious Activity Timeline:** Provides detailed timing information for all suspicious activities detected during the quiz attempt.
- **Proctoring Report Summary:** Generates a summary report for each course and quiz, showing the total number of images captured and users involved.
- **Face Recognition Options:** Admins can configure the match threshold for face recognition to optimize cost and precision, or they can choose to manually review all images.
- **Image Analysis View:** Teachers or admins can quickly identify images where face matching succeeded or failed, with helpful image border and tooltips for further clarification.
- **Admin Views:** Provides both a single-user detailed view and a grid view of proctoring reports for easy navigation.
- **Email Support:** Offers email support for resolving technical issues and addressing user inquiries.

## Installation Process

1. **Download the ZIP File**
  - a. Download the plugin ZIP file from the official source.
2. **Unzip the File**
  - a. Unzip the file and place it in the `/path/to/moodle/mod/quiz/accessrule/proctoring` directory on your Moodle server.

**OR**

  - b. Upload the ZIP file directly from Moodle's plugin installation interface:  
Go to **Site Administration > Plugins > Install Plugins > Upload ZIP File.**
3. **License Activation**
  - a. To activate and use the plugin, you must purchase a license key.  
You can obtain the license key by visiting [Moodle Proctoring Pro Details](#).
4. **Complete Installation**
  - a. Once the plugin is installed, you'll be prompted to enter your license key during the setup process.

## Initial Setup Configuration

1. **Add License Key:** After installation, navigate to the plugin settings and enter the license key obtained from the [Moodle Proctoring Pro Details Page](#).

<p>User Image Upload List</p> <p>Proctoring Pro License Key <small>quizaccess_proctoring   license_key</small></p>	<p><a href="#">Upload Images for Users</a></p> <p><input type="text" value="TGdhhbHRHODMuYUjSMGNEb3ZMMnguR2"/> Default: Empty</p> <p>Enter the Proctoring Pro license key provided during purchase</p>
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2. **Additional Configuration Settings:** Admins can customize the plugin behavior by setting specific parameters during the Proctoring Plugin Pro configuration. Below are the key settings that can be configured:



- a. **Camshot Delay:** This setting controls the time delay (in seconds) between each webcam capture during the quiz. Admins can adjust this value to fit their proctoring requirements.
- b. **Camshot Image Width:** This setting specifies the width of the captured webcam images in pixels. The height will automatically adjust proportionally. Admins can modify the width based on their storage and image quality preferences.
- c. **Images in Grid View:** This option limits the number of images displayed per page in the grid view of the proctoring report. Admins can set the maximum number of images they wish to display in the report's grid view.

Camshot Interval (seconds) <small>quizaccess_proctoring   autoreconfigurecamshotdelay</small>	<input type="text" value="10"/> Default: 30
	Specify the time delay (in seconds) between each camshot
Camshot Image Width (pixels) <small>quizaccess_proctoring   autoreconfigureimagewidth</small>	<input type="text" value="230"/> Default: 230
	Specify the width (in pixels) of the camshot image. The height will scale automatically
Images per Page in Grid View <small>quizaccess_proctoring   gridimagecount</small>	<input type="text" value="24"/> Default: 20
	Limit the number of images displayed per page in the grid view of the proctoring report

3. **Select Face Analysis Method:** Choose the face analysis service you want to use (You will need to provide the API credentials (API key, secret key, etc.) for the selected service):

Facial Recognition Method (BS/AWS) <small>quizaccess_proctoring   fcmethod</small>	<input type="text" value="AWS"/> Default: None
	Choose the service for facial recognition (Options: AWS, BS)

- **BS Face Matching API:** When using the BS face match method, the BS service API, and BS API key have to be entered.

BS Service API Endpoint <small>quizaccess_proctoring   bsapi</small>	<input type="text"/> Default: Empty
	API endpoint for the BS facial recognition service
BS API Key <small>quizaccess_proctoring   bs_api_key</small>	<a href="#">Click to enter text</a>  
	Enter the BS API Key
Face Match Threshold (BS API) <small>quizaccess_proctoring   threshold</small>	<input type="text" value="68"/> Default: 68
	Set the threshold percentage for face verification

If you need the BS service API, BS API key, please contact here: [elarning@brainstation-23.com](mailto:elarning@brainstation-23.com)

- **AWS Face Rekognition:** For AWS facematch, only the AWS key and secret are needed.

<b>AWS Access Key</b> <small>quizaccess_proctoring   awskey</small>	<input type="text"/>	Default: Empty
Enter the AWS access key for the facial recognition service		
<b>AWS Secret Key</b> <small>quizaccess_proctoring   awssecret</small>	<input type="text"/>	Default: Empty
Enter the AWS secret key for the facial recognition service		
<b>Face Match Threshold (AWS API)</b> <small>quizaccess_proctoring   awsfcthreshold</small>	<input type="text" value="80"/>	Default: 80
Set the threshold percentage for face verification using AWS		

If you need the AWS key and secret, you can refer to this official documentation [here](#).

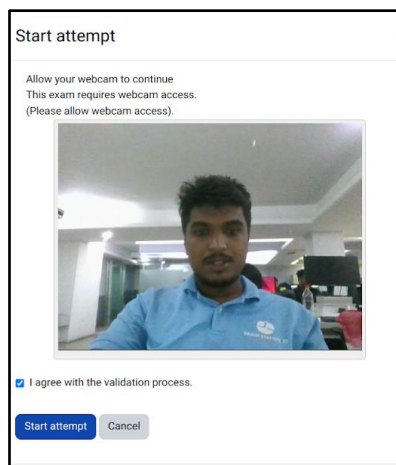
- Face match Scheduler Task:** Images of attempted quizzes can be analyzed by an automatic scheduled task. This can be enabled from the following settings.

<b>Face Matches per Quiz</b> <small>quizaccess_proctoring   awschecknumber</small>	<input type="text" value="-1"/>	Default: Empty
Set the number of face matches required per quiz (-1 to check all)		

- Face validation on quiz start:** This option can be enabled or disabled based on your requirements.

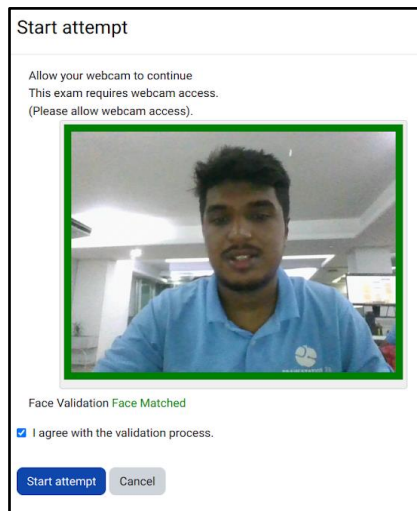
<b>Face ID Validation on Quiz Start</b> <small>quizaccess_proctoring   fcheckstartchk</small>	<input type="checkbox"/>	Default: No
Require face ID validation at the start of the quiz (if "yes", the user must validate their face to start the quiz)		

- Disable (Default):** Users can start the quiz without doing face verification. And the given modal will pop up:



By clicking on the checklist, the start attempt button will be clickable.

- Enabled:**



Upon clicking the "Validate Face" button, the system will check for a face match. If a match is found, the "Start Attempt" button will become clickable, allowing the user to begin the quiz. Without a matching face, the user will not be able to start the quiz.

On the modal, the user will see a message indicating whether their face matches. If a match is found, it will display **"Face Matched."** If no match is found, it will show **"Face Not Matched."** If the user's base photo has not been uploaded, the message will state **"Photo not uploaded. Please contact the admin."** If the API key or secret is not valid, it will display **"Face match failed. Please contact the admin."**

## Updating Plugin Settings

To update the plugin settings at any time:

1. Go to **Site Administration > Plugins**.
2. In the **Activity Module** section, select **Proctoring**.
3. Adjust the plugin configuration as needed, including updating the license key, face analysis method, image analysis settings, and more.

## Upload User Images

The **Upload User Images** page in **Proctoring Plugin Pro v2.0.1** allows administrators to manage user photos for face recognition during proctoring-enabled quizzes. This section provides a guide on how to use the various features available on this page.

### 1. User List

The main area of the page displays a list of all users enrolled in the course or participating in quizzes using the proctoring functionality. For each user, the following details are shown:

- **Username:** The name of the user.
- **Profile Picture:** Displays the user's profile image if it has been uploaded.
- **Image Status:** Indicates whether a valid image has been uploaded and whether a face has been detected.
- **Buttons:** Specific buttons for editing, deleting, or updating the user's picture.

#### How to Use:

- For users who have uploaded an image, buttons will be available to update or delete the picture.
- For users without an uploaded image, an **Upload Image** button will be shown.
- The **Image Status** field will indicate if a valid face is detected in the uploaded image. For bulk uploads, admins must click the **Detect Faces** button to analyze the images.

## 2. Search Bar

Located at the top of the user list, the search bar enables you to quickly find specific users.

#### How to Use:

- Enter the username in the search field to instantly filter the list.
- Results will appear as you type, making it easy to locate a specific user.

## 3. Filter Categories

- **All Students:** Displays a complete list of all students, regardless of whether they have uploaded an image or if their face was detected.
- **Students With Pictures:** Shows only students who have successfully uploaded a profile image.
- **Students Without Pictures:** Lists students who have not uploaded any profile image.
- **Students With Undetected Faces:** Filters students whose uploaded image does not contain a recognizable face, based on face detection analysis.

## 4. Upload Multiple Images (ZIP File)

Admins can upload images for multiple users in bulk using a ZIP file. The images in the ZIP file must be named based on the usernames to ensure proper matching.

#### How to Use:

- Click the **Upload ZIP File** button.
- Select the ZIP file from your computer. Ensure that the images inside the ZIP file are named in the format `username.png`, `username.jpg`, `username.jpeg`, etc.
- The plugin will automatically assign the images to the correct users based on the filenames.
- If a user already has an uploaded image, you will be prompted with an option to overwrite the existing image.
- Once uploaded, images will be analyzed, and you can use filters to view users based on image status.



## 5. Detect Button (Face Analysis)

The **Detect** button allows you to analyze all uploaded images at once. This feature runs face recognition on each image to determine if a valid face is present.

### How to Use:

- Click the **Detect** button after uploading user images.
- The system will analyze each image and categorize users into two groups:
  - **Face Detected:** Users whose images contain a detectable face.
  - **No Face Detected:** Users whose images do not contain a recognizable face.
- Use the filter options to easily view users with no face detected.

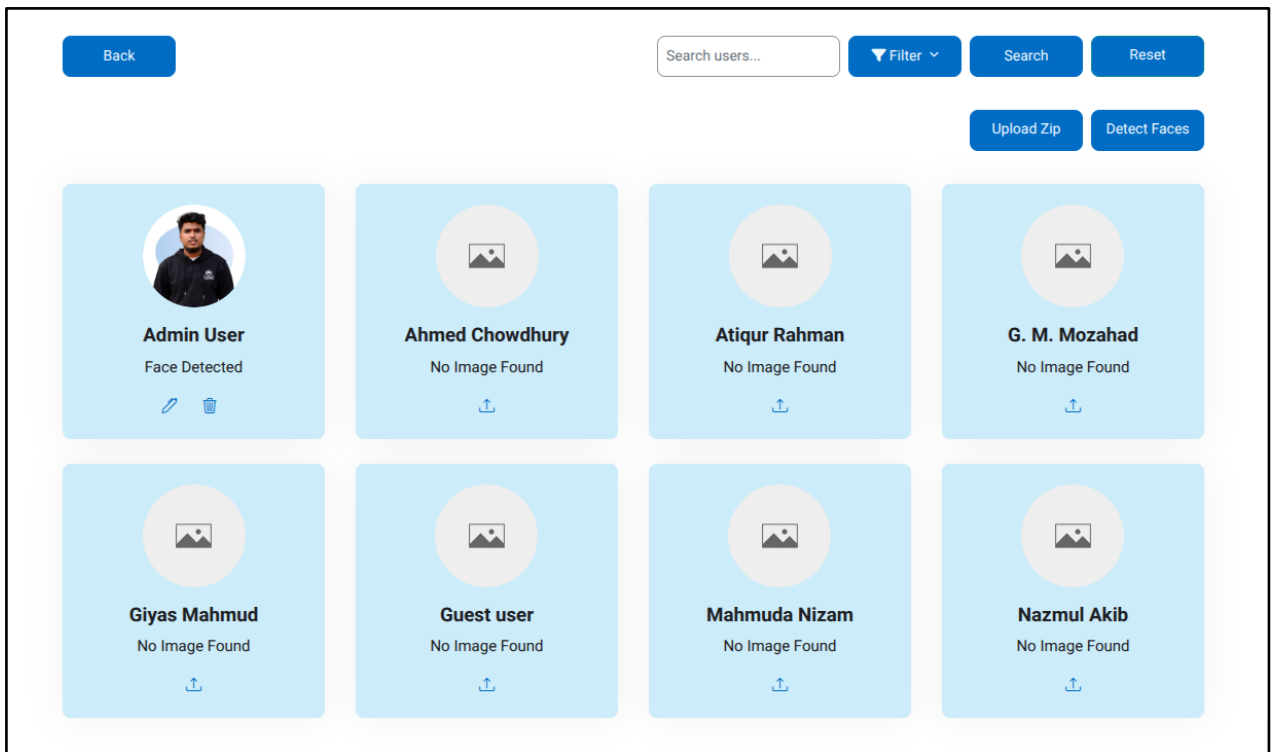
## 6. Upload/Update/Delete Specific User Images

Admins can manually manage images for individual users, allowing for uploads, updates, or deletions on a per-user basis.

### How to Use:

- **Upload Image for Specific User:**
  - Find the user in the list.
  - Click the **Upload Image** button next to their name.
  - Select the image file from your computer.
  - The image will be uploaded and analyzed for face detection.
- **Update Image:**
  - If an image already exists for the user, click the **Update Image** button.
  - Upload a new image, and the existing one will be replaced.
- **Delete Image:**
  - To remove an image, click the **Delete Image** button next to the user's name.
  - The image will be permanently deleted, and the status will be updated.

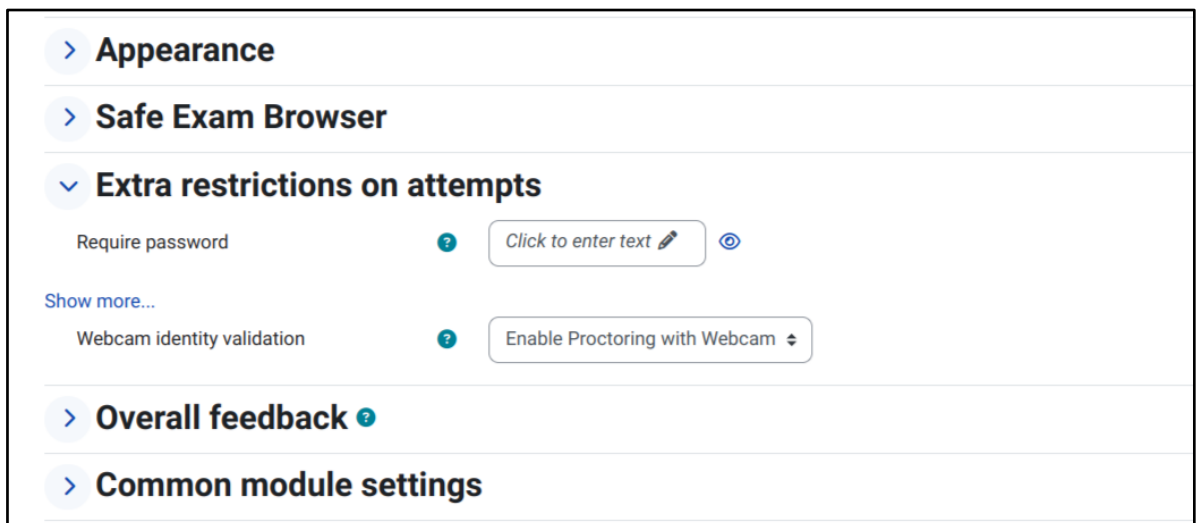
### Overview of the User List:



### Configuring a Quiz:

After installing the plugin, you can enable it by configuring the quiz settings:

1. Go to your quiz settings (Edit Quiz).
2. Under '**Extra restrictions on attempts**', select '**Enable Proctoring with Webcam**' to enable the proctoring functionality.



### Attempting the Quiz

Before starting the quiz, users will be prompted to grant access to their webcam. Once they allow webcam access, a modal will appear depending on whether face verification is enabled or disabled. If

face verification is required, students must complete the verification process before they can proceed to attempt the quiz. This ensures the integrity of the assessment and verifies the identity of the student.

CSE-1121 / Fundamentals of Algorithms / Quiz 1

## Quiz 1

[Back](#)

**Question 1**

Not yet answered

Marked out of 1.00

[Flag question](#)

Which of the following best describes an algorithm?

- a. A high-level programming language
- b. A method to store data in memory
- c. A step-by-step procedure to solve a problem
- d. A diagram to represent data flow

[Clear my choice](#)


[Next page](#)

**Quiz navigation**

1 2 3

[Finish attempt ...](#)

**Webcam**



## Proctoring Report

- **View Reports**

Search users...		<a href="#">Search</a>		<a href="#">Course Report</a>		
Name	Email	Suspicious Events	Date Verified	Proctoring Report	Actions	
G. M. Mozahad	gm@brainstation-23.com	0	2024/Sep/23 07:09:55			
Admin User	mozahad@brainstation-23.com	0	2024/Sep/23 08:09:59			
Sohag Ahmed	sohag@brainstation-23.com	3	2024/Sep/23 09:09:13			
Mahmuda Nizam	mahmuda@brainstation-23.com	8	2024/Sep/23 09:09:27			
Giyas Mahmud	giyas@brainstation-23.com	2	2024/Sep/23 09:09:15			

- **View Individual Proctoring Reports**

Name	Email	Suspicious Events	Date Verified	Proctoring Report	Actions
Admin User	admin@yopmail.com	9	2025/Jan/01 10:01:28		

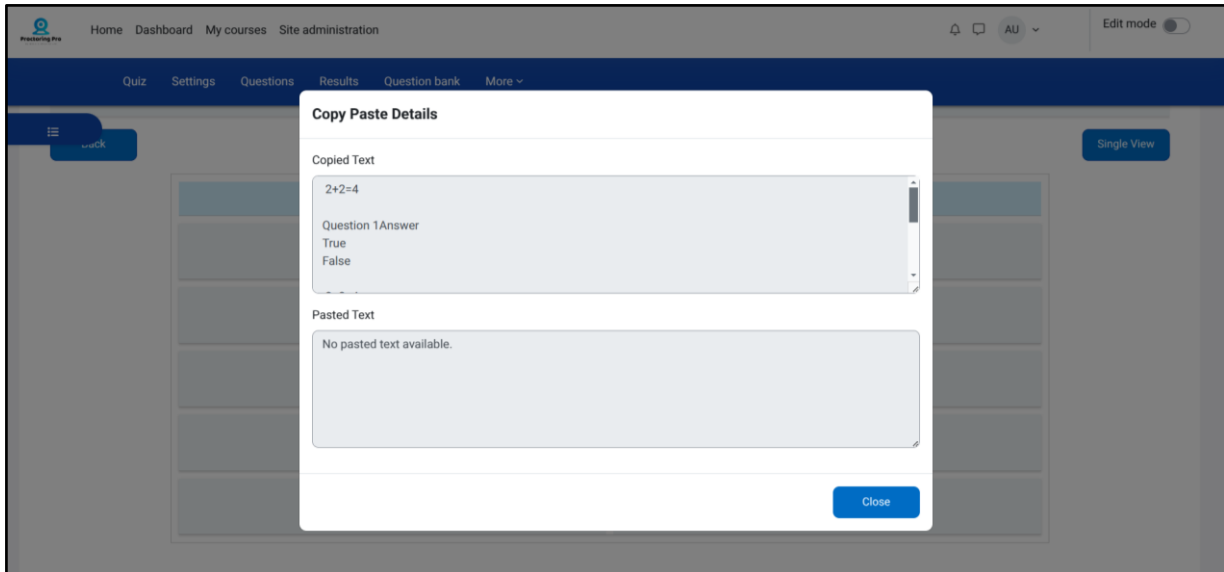
  

Overview	Status
Was the webcam enabled?	2 Log Found
Was the screen focus lost?	No Log Found
Was the screen resized?	3 Log Found
Did copy and paste occur?	4 Log Found
Was the F12 button pressed?	No Log Found

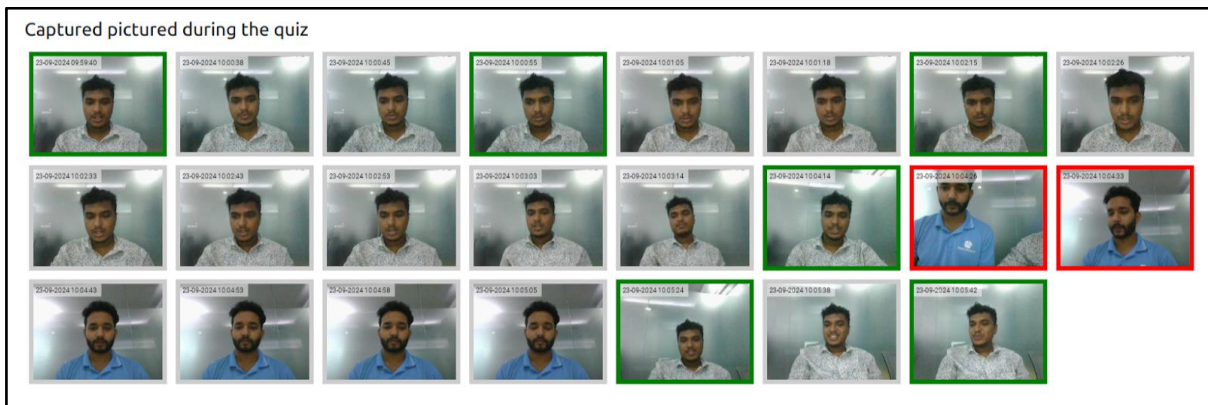
- Suspicious Activity Logs**

The screenshot shows a modal window titled "Copy Paste Occurrences" overlaid on the suspicious activity logs. The modal contains a list of four entries, each with the text "Created: November 26, 2024, 11:24 am". The modal has a "View" button at the top right and a "Close" button at the bottom right. The background shows the same suspicious activity logs table as in the previous image.

- Activity Logs**



- **Captured Images During the Quiz**



- **Download Proctoring Report:** Admin can download the entire proctoring report. Where course name, quiz name, and the user name and created time of the suspicious activity will be presented on that report.

Proctoring Report		
Name: G. M. Mozahad	Course: Computer Algorithms	Quiz: Quiz 2
<b>Lost Focus</b>		
1. 2024-09-23 14:03:46		
<b>Resized</b>		
1. 2024-09-23 14:03:37		
2. 2024-09-23 14:03:45		
<b>Copied Text</b>		
1. 2024-09-23 14:03:28		
2. 2024-09-23 14:03:29		
3. 2024-09-23 14:03:31		
<b>F12 Pressed</b>		
1. 2024-09-23 14:03:37		

- **Proctoring Summary Report:** Admin will find a details view of quizzes where proctoring pro is enabled.

Course Name	Quiz Name	Number of Images	Actions	
CP: Computer Programming	Quiz 2	534		
	Quiz 3	4		
DM: Discrete Mathematics	Quiz 1	8		
	Quiz 2	8		
PP: Proctoring Pro	Quiz 1	5		
	Quiz 2	17		
	Quiz 3	1		

### Browser Compatibility of the Proctoring Plugin

The Proctoring Plugin relies on the **getUserMedia()** API to access the user’s webcam. Therefore, the plugin's browser compatibility is directly tied to the compatibility of the **getUserMedia()** API.

	🖥️						📱					
	Chrome	Edge	Firefox	Internet Explorer	Opera	Safari	Chrome Android	Firefox for Android	Opera Android	Safari on iOS	Samsung Internet	WebView Android
getUserMedia	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
	53	12	36	No	40	11	53	36	41	11	6.0	53
	*		*		*		*	*	*			
Secure context required	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓
	53	79	68	No	40	11	53	68	41	11	6.0	53

## FAQs:

- 1. How can I upload a user image?**
  - a. From the settings of the proctoring plugin, there is an option for uploading user images.
- 2. Why does the analyze image button give a red mark for all the images?**
  - a. Check whether the credentials for the face match methods are correct and if the user’s image is uploaded by the admin.
- 3. Can the students upload their own images?**
  - a. No, only admins can upload user images.
- 4. Where can I get the BS Service API credentials?**
  - a. Please contact: [elarning@brainstation-23.com](mailto:elarning@brainstation-23.com).
- 5. Where can I get the AWS Secret and Key?**
  - a. Please contact: [elarning@brainstation-23.com](mailto:elarning@brainstation-23.com).
- 6. Is the screenshot feature available?**
  - a. No, it has been removed due to browser limitations.
- 7. Is there any documentation for AWS Face Rekognition Service?**
  - a. AWS Documentation link is available on their website.
- 8. How can I report an issue regarding this plugin?**
  - a. Contact us at: [elarning23@brainstation-23.com](mailto:elarning23@brainstation-23.com).
- 9. Why is my Moodle stuck while validating the face?**
  - a. Ensure the credentials for the face match methods are correct.
- 10. Why can’t I upload some user images?**
  - a. Every user image needs to include a face. Otherwise, it cannot be uploaded.
- 11. As a student, why can’t I validate my face before starting a quiz?**
  - a. The student’s image must be uploaded by an admin in Moodle to validate their face before an attempt.
  - b. Ensure proper lighting is available during face validation.
- 12. What does the yellow mark around the image mean?**

- a. Case 1: Check whether the user image is uploaded in Moodle.
- b. Case 2: Images captured with a previous version of the proctoring plugin cannot be analyzed by the current version.