

# DCU CA326 - Third Year Project

## User Manual

Gareth Hogan - 20379616

Joshua Ward - 20460854

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# Home Page

## Layout of the Home Page

The home page displays the name of the system, will welcome you by your username, and provides a short description of what the system is and what it does. It has 3 main buttons in blue beneath the title, which can be seen in the screenshot below. These buttons are used to view your modules, to register a new account, and to logout of your current account.

### Class Vision

Welcome Howard\_JG

[VIEW YOUR MODULES](#)

[REGISTER](#)

[LOGOUT](#)

#### Description

Class Vision is a prototype system aimed at helping lecturers better understand how well students are **engaging** in their lectures. This system uses **cutting-edge** computer visions technology to analyse a video stream of a lecture, it records **key data points** and returns them back to the lecturer. This systems generates **data reports** to help lecturers improve.

## Logging in / Registering a New Account

You can click on the register button to change the description text on the right into a form that allows you to input your account details to create a new account. If you click on the login button, it allows you to input those details to log in to an existing account.

<b>Username</b>	<b>Email</b>
<input type="text" value="New_User_123"/>	<input type="text" value="newuser123@gmail.com"/>
<b>Password</b>	
<input type="password" value="....."/>	
<input type="button" value="REGISTER"/>	

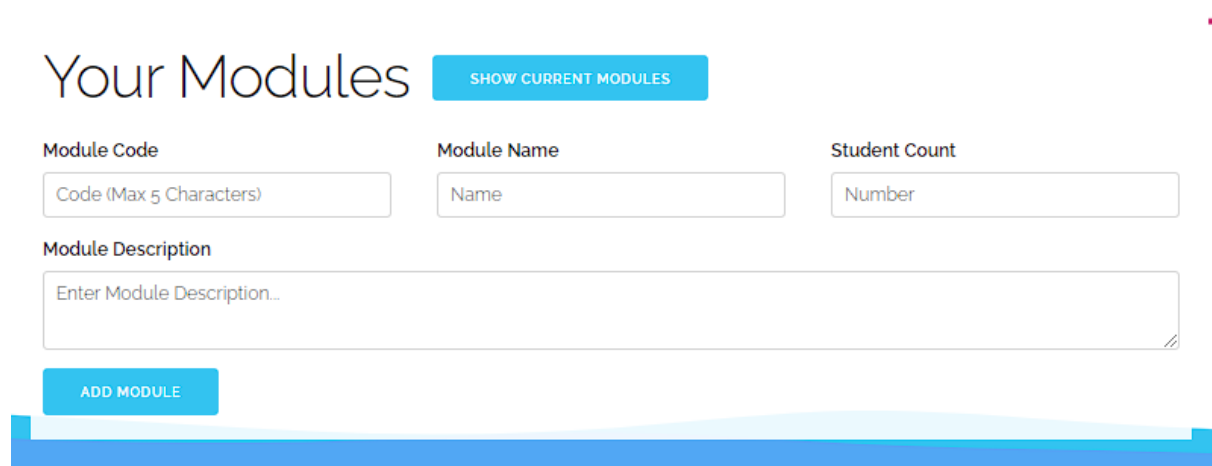
## Logging out of an Account

The login button is replaced by another button stating 'Logout' if you are not currently logged in. Clicking on this will immediately log you out of the account and refresh the homepage for you, leaving the only options as Register and Login.

# Viewing Your Modules

## Adding a Module

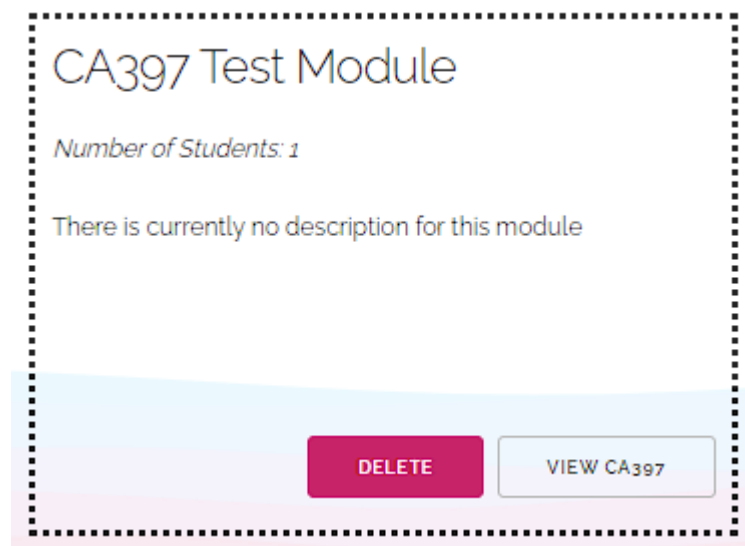
You can click on the 'View Your Modules' button which will bring you to the next page, which has a grid made up of the modules you currently have assigned to you. At the top of this page is a button labelled 'Add New Module', which changes the page to a form that allows for new modules to be added to you. You can click 'Show Current Modules' to bring back the list of modules from this page.



The screenshot shows a web form titled "Your Modules". At the top right of the form area is a blue button labeled "SHOW CURRENT MODULES". Below the title, there are three input fields: "Module Code" with a placeholder "Code (Max 5 Characters)", "Module Name" with a placeholder "Name", and "Student Count" with a placeholder "Number". Below these is a larger text area for "Module Description" with a placeholder "Enter Module Description...". At the bottom left of the form is a blue button labeled "ADD MODULE". The form is set against a light blue background with a white border.

## Module Information Layout

Each module is made up of a box, which has the module code and name in the top left, then the number of students, and finally a description of the module. In the bottom right corner, there is a white button to view the details for that particular module.



The screenshot shows a dashed rectangular box representing a module card. Inside the box, the text "CA397 Test Module" is at the top. Below it, the text "Number of Students: 1" is displayed. Further down, the text "There is currently no description for this module" is shown. At the bottom right of the box, there are two buttons: a red button labeled "DELETE" and a white button labeled "VIEW CA397". The box is set against a light blue background with a white border.

## Deleting a Module

You can click the red 'Delete' button at the bottom of the module box to delete that module from the system.

## Viewing Your Lectures for a Module

### Interacting with a Lecture

You can click on the 'View Module' button in the bottom right, which will have the module's specific code, to bring you to a page which displays the contents of that module. There is a heading labelled 'Scheduled Lectures', beneath which is a grid of all the lectures currently scheduled for that module. In the boxes that make up each lecture, the day of the week, the date, the start time, and the student count for each lecture are listed. There is a blue button in the bottom left corner which starts the [Class Vision analysis](#).

### Scheduled Lectures

Day: Tuesday Date: 1222-12-12 Time: 12:12:00 Students: 12 <a href="#">START ANALYSIS</a> <a href="#">REMOVE</a>	Day: Monday Date: 2023-02-20 Time: 17:00:00 Students: 34 <a href="#">START ANALYSIS</a> <a href="#">REMOVE</a>	Day: Thursday Date: 2023-03-11 Time: 12:30:00 Students: 45 <a href="#">START ANALYSIS</a> <a href="#">REMOVE</a>
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## Deleting a Lecture

In the bottom right corner of each box of lecture information, there is a red button for deleting the lecture from the system.

## Viewing Lecture Analysis Reports

Below the Scheduled Lectures, there is a list of lecture reports which you can access from a button on the right labelled 'Open Report'. Upon clicking this button, a pop-up with the lecture report details will appear on the screen. This lecture report will go through general statistics, the dominant emotion for the lecture, and show a graph of potentially relevant data points throughout the lecture for you to observe.

## Lecture Statistics

- Lecture Day: Tuesday
- Scheduled Time: 12:12
- Length of analysis: 0:01:58
- Registered Students: 12
- Maximum Faces in one capture: 1
- Average Faces seen: 0.90
- Total faces seen throughout lecture: 38
- Total Profile Faces seen: 30
- Total Eyes seen: 78

- Above you can see the raw statistics extracted from your lecture
- The faces seen will not be 100% accurate to student numbers, due to unseen faces or duplicate detections
- An image to analyse is captured every one second whilst analysis is ongoing
- Shown Below is a graph which shows the number of faces, profiles (side-faces) and eyes seen over time

## Dominant Emotion = Fear

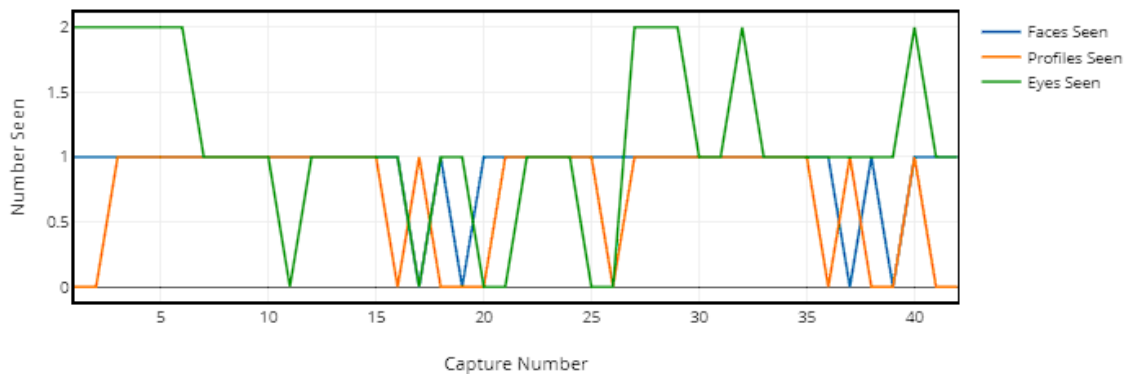


way you feel is right.

The dominant emotion is the most frequently recognised emotion from faces captured during analysis.

This emotion detection is not 100% accurate and you may interpret the results and patterns in whatever

Data Points throughout Lecture



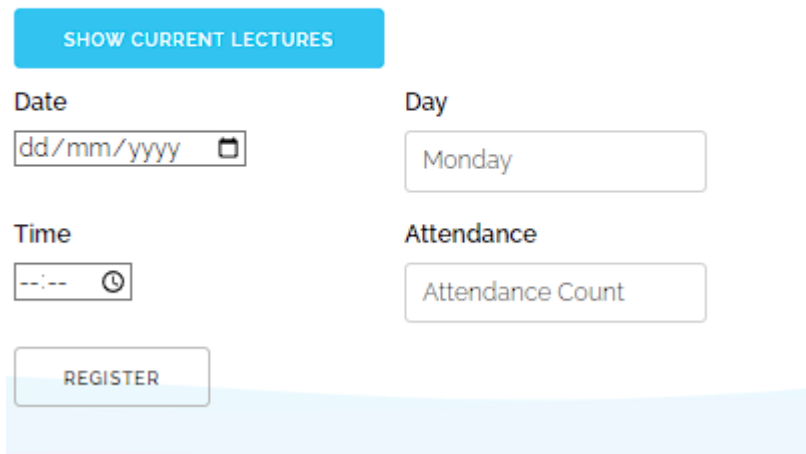
## Understanding the Lecture Report Graph

The graph seen at the bottom of the report goes through the faces seen, profiles seen, and eyes seen of the lecture. The faces seen registers how often a face was registered looking directly at the camera, which represents students paying attention. The 'profiles seen' registers when a student isn't looking directly at the lens, but it still registers a head. This could be a student looking down at their phone, or it could be a student turning to talk to another student, both of which are useful information to register as it means reduced attentiveness. Finally, the eyes seen registers whether a student is looking forward, or if they have their head potentially tilted away hiding their eyes, or if they're looking down, which is a good way to measure a lack of attention.

## Adding a New Lecture

Right underneath the module title on the lecture page, there are 3 buttons. You can click the first button on the left to change the page to a form for adding new lectures to the module. This brings up a form where you can input the required information for a particular lecture.

### Register New Lecture

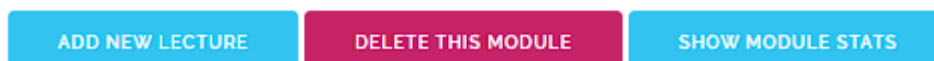


The form for registering a new lecture includes a blue button labeled 'SHOW CURRENT LECTURES' at the top. Below it are four input fields: 'Date' with a text box containing 'dd/mm/yyyy' and a calendar icon, 'Day' with a dropdown menu showing 'Monday', 'Time' with a text box containing '--:--' and a clock icon, and 'Attendance' with a text box containing 'Attendance Count'. A blue button labeled 'REGISTER' is positioned below the 'Date' and 'Time' fields. The entire form is set against a light blue background.

## Deleting a Module

You can click the middle button to delete the module, which then redirects you back to the previous page with the list of the rest of your modules.

### CA397-Test Module



Three buttons are displayed horizontally: a blue button labeled 'ADD NEW LECTURE', a red button labeled 'DELETE THIS MODULE', and a blue button labeled 'SHOW MODULE STATS'.

## Viewing Module Stats

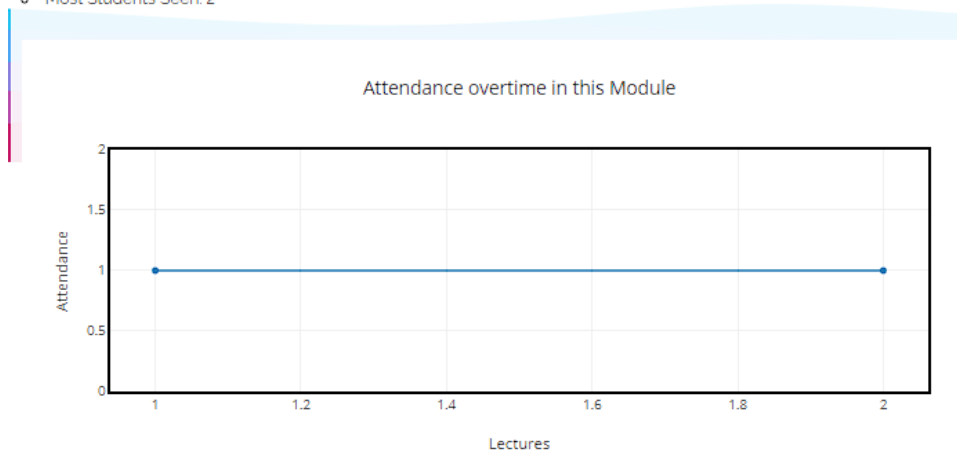
The final rightmost button is used to display module stats, which are combined from the different lecture reports within the module. The module stats show the average attendance throughout the module, how long the average lecture has been, a ratio for attentiveness, and the maximum number of students that have attended. It also displays the most common emotions on the right, and a graph displays the average attendance below the statistics. You can go back to your scheduled lectures by clicking on the blue button stating 'Show Module Schedule' that has replaced the 'Show Module Stats' button.

## Module Overall Statistics

- Percent Attendance: 5%
- Average Students Attending: 1
- Average Length: 0 Hour(s), 1 Minute(s), 25 Second(s).
- Ratio of Front Faces to Side Faces: 2.55
- Most Students Seen: 2

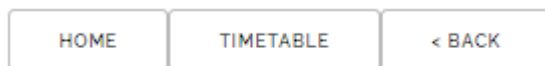
### Most Common Emotions

1. neutral
2. fear
3. No data to show



## Interacting with the Header buttons

At the top of the screen on each page, there are 3 buttons.



### Going to the Homepage

The button on the left of the header is the Home button, which brings you back to the homescreen.

### Going Back

The button on the right of the header is for moving back up a page, if you wish to return to your list of modules from a specific module page for instance.

## Timetable

### Viewing the Timetable

The final button in the middle of the header brings you to the timetable when clicked. Upon clicking on the timetable button, you are brought to the timetable page where all the lectures you have are listed chronologically and sorted by day. Each lecture states the module it is

associated with, the time that it takes place, and then it has a button to start the Class Vision analysis and a button to view the lecture details.

## Monday

CA401 - Test Module 4  
Time: 11:11:00

START ANALYSIS

VIEW CA401

CA401 - Test Module 4  
Time: 12:12:00

START ANALYSIS

VIEW CA401

CA397 - Test Module  
Time: 17:00:00

START ANALYSIS

VIEW CA397

## Tuesday

CA397 - Test Module  
Time: 12:12:00

START ANALYSIS

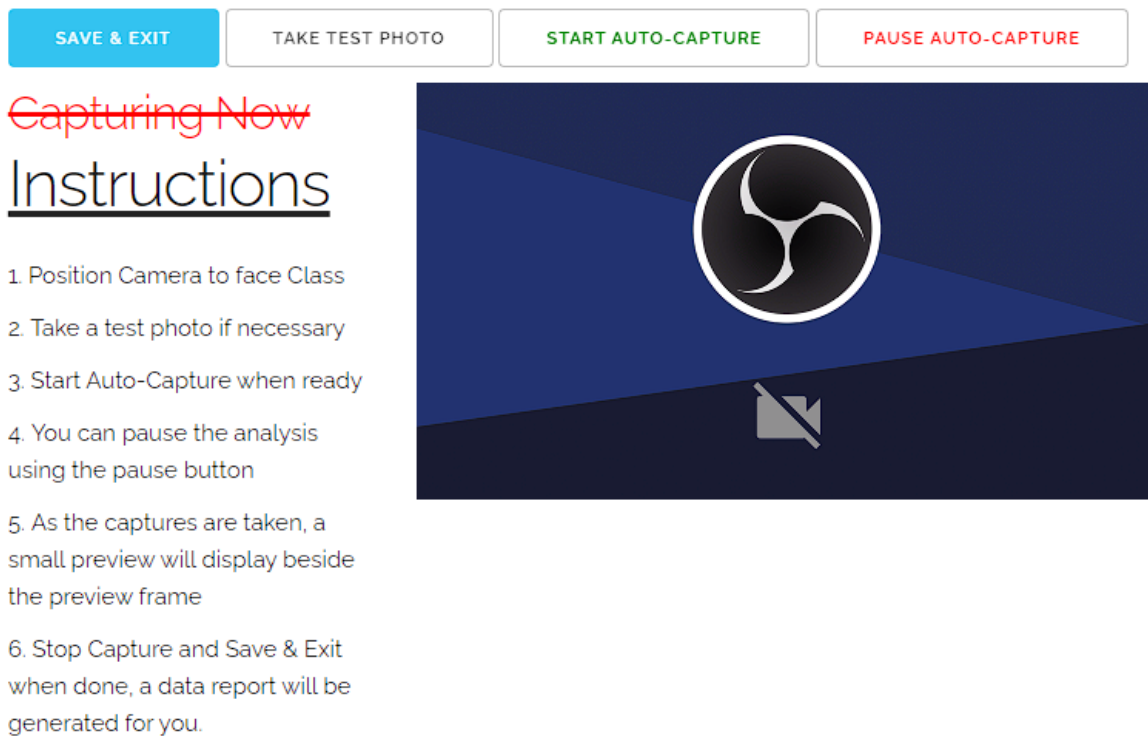
VIEW CA397



# Using the Class Vision Analysis Tool

## Starting the Class Vision Analysis

When the Start Analysis button is clicked, a new tab is opened for you which brings you into the Class Vision analysis app. Instructions on using the application are listed on the left of the page, as you can see in the screenshot below. On the right side of the page, your camera feedback will appear to show the system is working.



## Interacting with the Class Vision Analysis

Along the top of the page, there are four buttons: The first button says 'Save & Exit', and is clicked when you are done with using the service, to generate a new report. The second button is to 'Take Test Photo', which allows you to ensure the app is working with your camera correctly and registering faces. The third button starts the capture, which takes 1 picture every second and registers the faces and emotions from that. The fourth button ends the capture, which allows you to Save & Exit with the report from the data they have captured.