



PLANT TRACKER USER MANUAL

Detecting Disease in Plants

Lecturer
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Introduction

The purpose of this document is to explain how to install and use Plant Tracker. Plant Tracker is an application used to track the level of disease on plants. It is comprised of two parts a mobile application and a website. The analysis is carried out on the mobile application and stored to the website. The website is used to view the analyses carried out by the mobile application. A user can use the website view charts bases on the analysis, generate csv files that can be down loaded and view individual analysis. This guide is comprised of several steps that a user can follow to ensure the application is installed correctly and being used correctly.

Administrator

The first step in setting up Plant Tracker is for the admin to add user accounts. By default, there will be one account created in the application, the administrator account. The new system administrator first must login to the web site and select add users.

Web site login

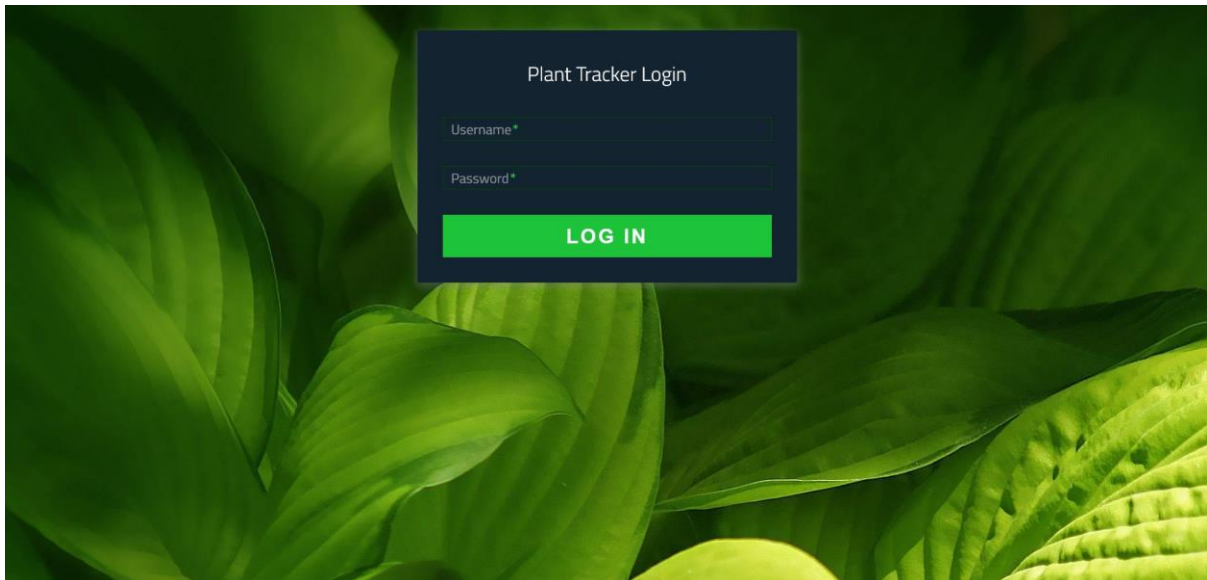


Figure 1 Website login

Administrator home page

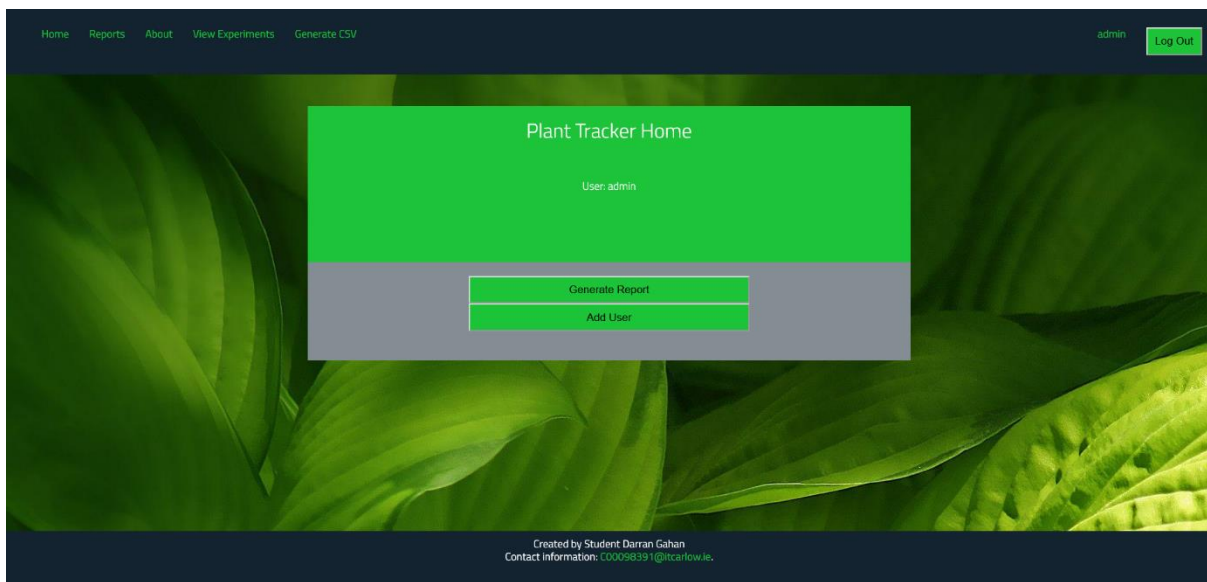


Figure 2 The administrators home page contains an add user option

The Administrator should select the “Add User“ option.

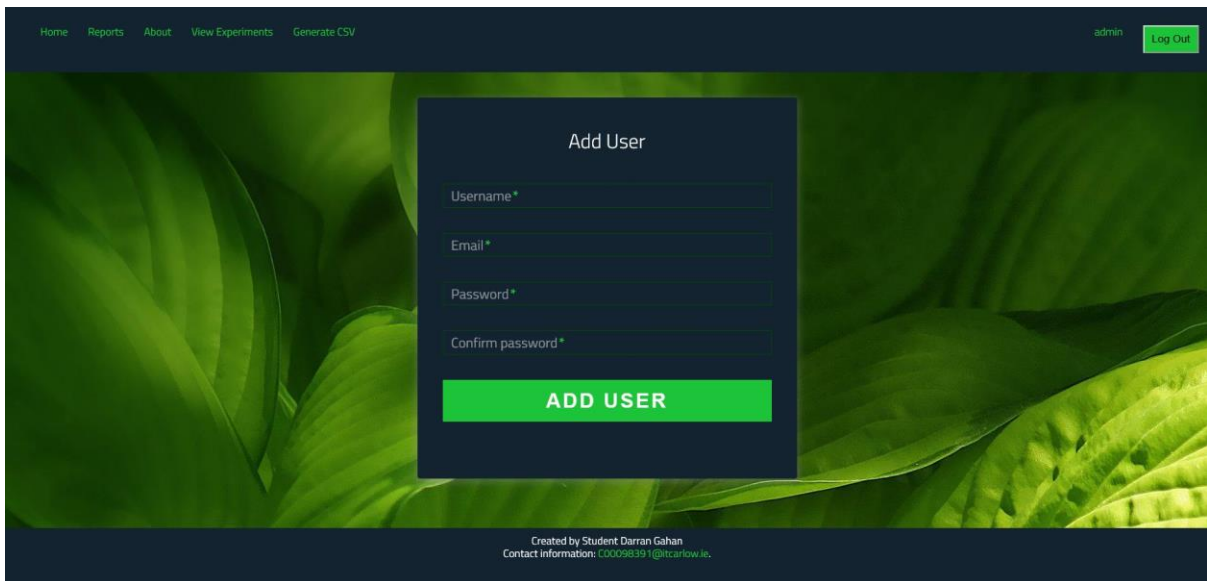


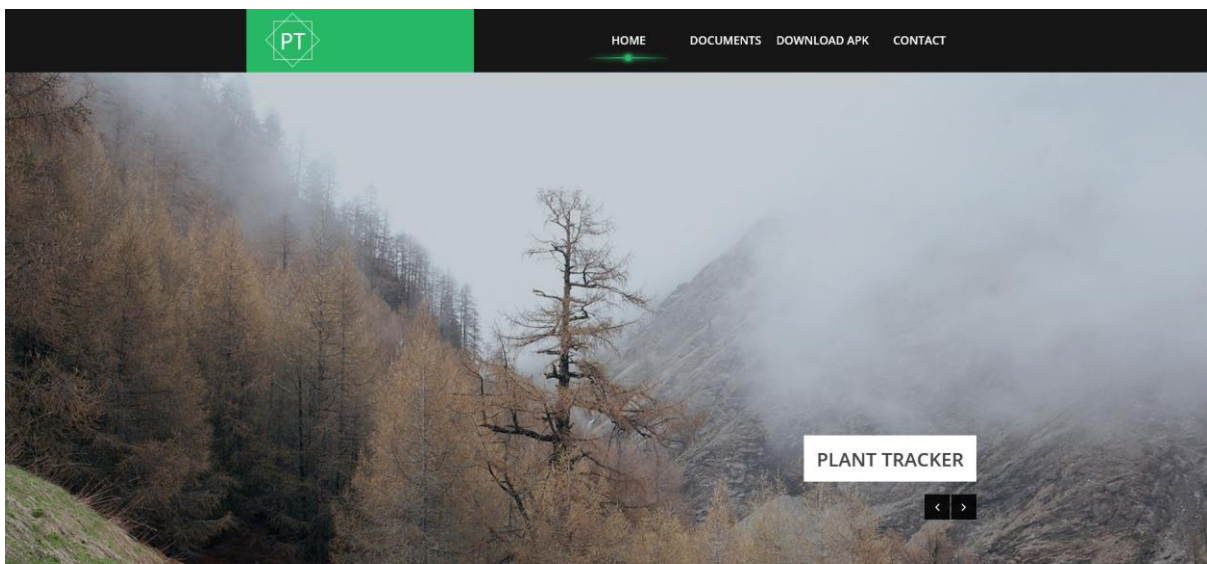
Figure 3 Add new user

The Administrator must enter the required detail and select add new user. This can be repeated until you have entered all new user you require. New users can also be added at any time in the future.

Mobile Application

Step 1

The first step is to navigate to <http://glasnost.itcarlow.ie/~softeng4/C00098391> and select download APK.



Step 2

Install the APK on the mobile device. In order to login an you need to receive login details from the system administrator. Once you launch the application a user can enter their login detail and select sign in.

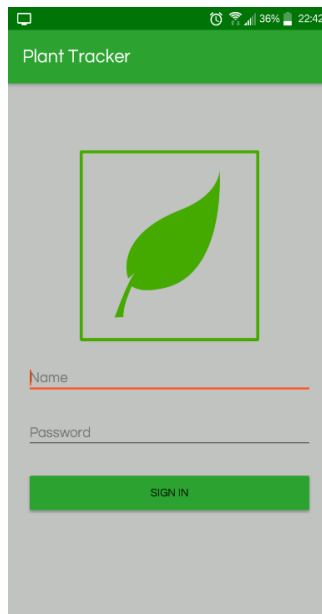


Figure 4 Mobile login

Step 3

The next screen will be the main or home screen here you will be able to select between “Start New Experiment” and “Continue Experiment.”



Figure 5 Mobile application
Main screen

Start New Experiment

Selecting the start new experiment option will require the user to capture an image of the label for the experiment in order to create the experiment with the necessary information. If the application detects the necessary text, the user can select to create the experiment. If the text is not detected or incorrectly detected the user can choose to input the details manually. This will bring the user to a menu to enter the details for the experiment.



Figure 6 Capture Text

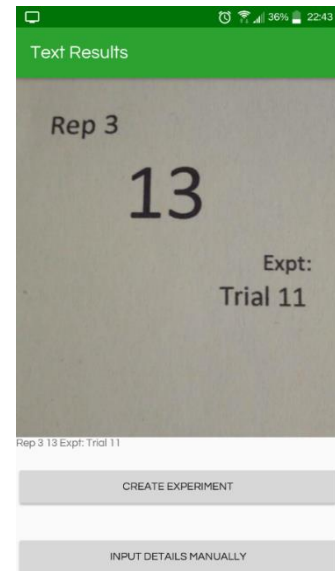


Figure 7 Text Results

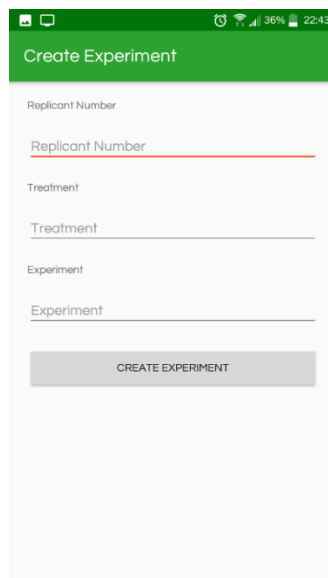


Figure 6 Input Experiment Details

The user can enter the experiment details and select “Create Experiment”.

Continue Experiment

Selecting the continue experiment option will give the user a list of experiments that they are associated with, from this list the user can select the experiment that they wish to continue adding analyses to.

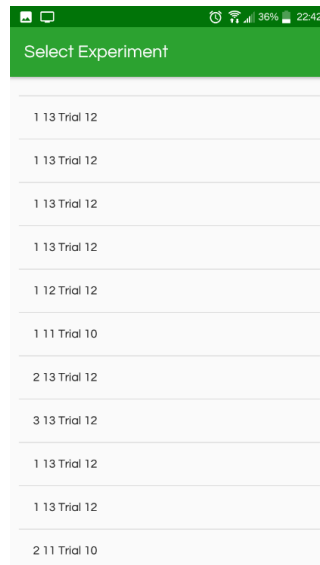


Figure 7 Continue Experiment

Step 4

Once a new experiment has been created or, an experiment to continue has been selected, the user is directed to the detection screen. On this screen the user should capture an image of a leaf they wish to analysis. The leaf should be as close to centre of the screen as possible, there is a grid provided on the camera to aid with this.

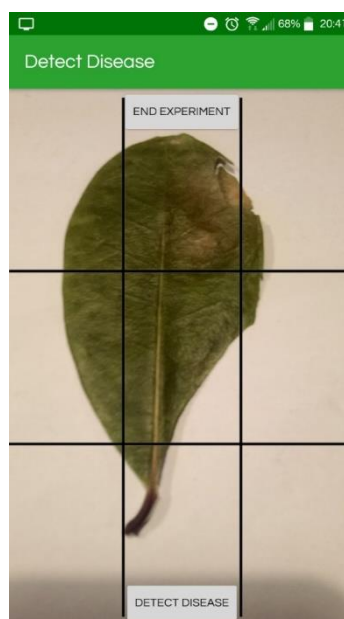


Figure 8 Detect Disease



Figure 9 Select Diseased Area

Step 5

Once an image has been captured the user will be shown the captured image, at this point the user should touch the image at the location of the disease. This will tell the application the colour of the disease it should detect. The application will then analysis the image.

Step 6

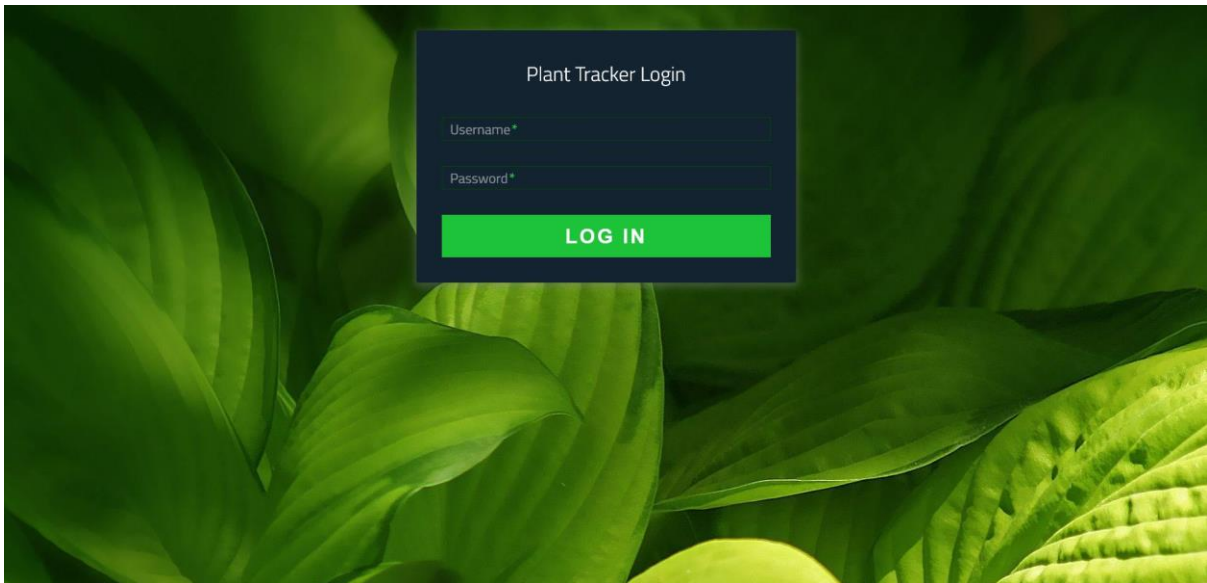
When the application has made an analysis, it will present the user with the level it detected as a percentage. It will also display the colour it used to determine this analysis. The user can then select “Upload Analysis”. The application will upload the analysis and then return to the detect stage of the application. To allow the user to either continue adding to the experiment or select to end the experiment.



Figure 10 Analysis Results

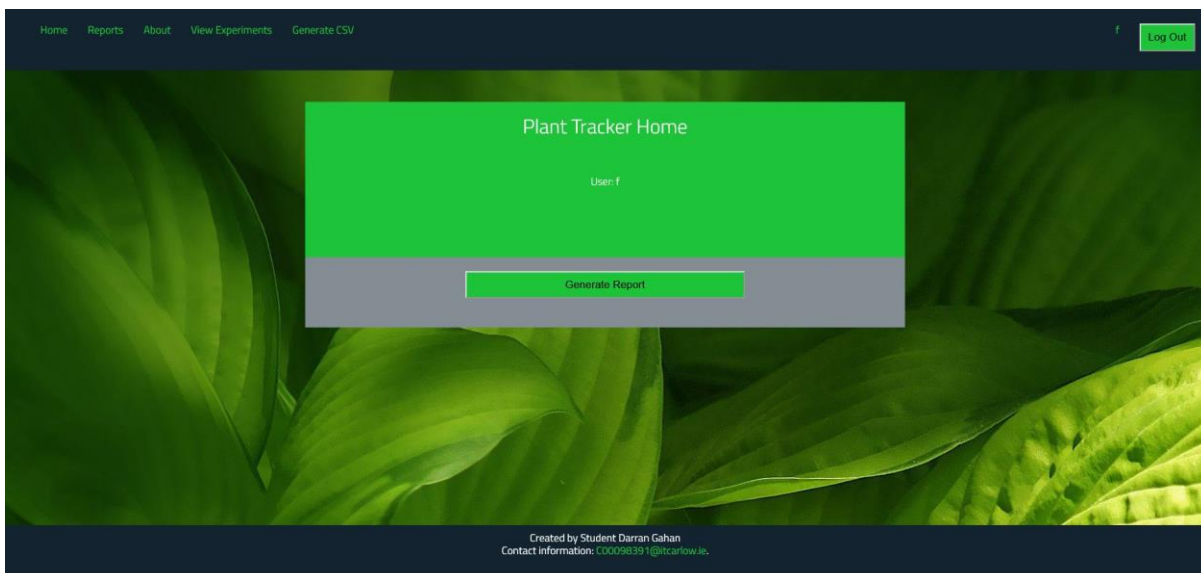
Website

Login



The user should navigate to <http://c0009839.candept.com/PlantTracker/> and enter their username and password and select login.

Home



The user will be shown the home screen. From here the user can navigate to View Experiment, Generate CSV, and Reports to view charts from the data.

View experiments

The screenshot shows a web interface with a dark blue header containing navigation links: Home, Reports, About, View Experiments, and Generate CSV. A 'Log Out' button is in the top right. The main content area has a green background with a white box titled 'Experiments Associated with f'. Inside this box is a table with the following data:

Id	Replicant	Expt	Treatment	View Individual Analysis	View Experiment Label
12	1	Trial 12	13	Analysis	View Experiment Label
13	1	Trial 12	13	Analysis	View Experiment Label
14	1	Trial 12	13	Analysis	View Experiment Label
15	1	Trial 12	13	Analysis	View Experiment Label
16	1	Trial 12	13	Analysis	View Experiment Label
17	1	Trial 12	13	Analysis	View Experiment Label
18	1	Trial 12	13	Analysis	View Experiment Label
19	1	Trial 12	13	Analysis	View Experiment Label
20	1	Trial 12	13	Analysis	View Experiment Label
21	1	Trial 12	13	Analysis	View Experiment Label
22	1	Trial 12	13	Analysis	View Experiment Label
23	1	Trial 12	13	Analysis	View Experiment Label
24	1	Trial 12	13	Analysis	View Experiment Label
25	1	Trial 12	13	Analysis	View Experiment Label
27	1	Trial 9	12	Analysis	View Experiment Label
35	1	Trial 12	13	Analysis	View Experiment Label
36	1	Trial 12	13	Analysis	View Experiment Label
37	1	Trial 12	13	Analysis	View Experiment Label
38	1	Trial 12	13	Analysis	View Experiment Label

At the bottom of the page, it says: 'Created by Student Darran Gahan' and 'Contact information: 000098391@itcarlow.ie.'

On the view experiments page a user can see all experiments they are associated with and the experiment labels that goes with the experiment. A user can also select “Analyses” to view the analyses associated with the experiment.

View Analyses

The screenshot shows a web interface with a dark blue header containing navigation links: Home, Reports, About, View Experiments, and Generate CSV. A 'Log Out' button is in the top right. The main content area has a green background with a white box titled 'Analysis Associated with f'. Below the title is the number '12'. Inside the box is a table with the following data:


Id	Replicant	Expt	Treatment	Analysis	View Individual Analysis
11	1	Trial 12	13	18	Individual Analysis
12	1	Trial 12	13	18	Individual Analysis
13	1	Trial 12	13	18	Individual Analysis
96	1	Trial 12	13	0	Individual Analysis
97	1	Trial 12	13	7	Individual Analysis
108	1	Trial 12	13	0	Individual Analysis
110	1	Trial 12	13	0	Individual Analysis
117	1	Trial 12	13	10	Individual Analysis
119	1	Trial 12	13	0	Individual Analysis

At the bottom of the page, it says: 'Created by Student Darran Gahan' and 'Contact information: 000098391@itcarlow.ie.'

On the Analyses page all the analyses from the selected experiment that are associated with the user are shown. From here a user can access the individual analysis from the experiment.

View individual Analysis


Plant Tracker Individual Analysis



id	Replicant	Expt	Treatment	Weather	Date	Time	Analysis
117	1	Trial 12	13	9.07C, Clouds(broken clouds), Humidity: 76	09-04-2019	10:20:32	10

Created by Student Darran Gahan
Contact information: 00098391@btcarlow.ie.

id	Replicant	Expt	Treatment	Weather	Date	Time	Analysis
117	1	Trial 12	13	9.07C, Clouds(broken clouds), Humidity: 76	09-04-2019	10:20:32	10

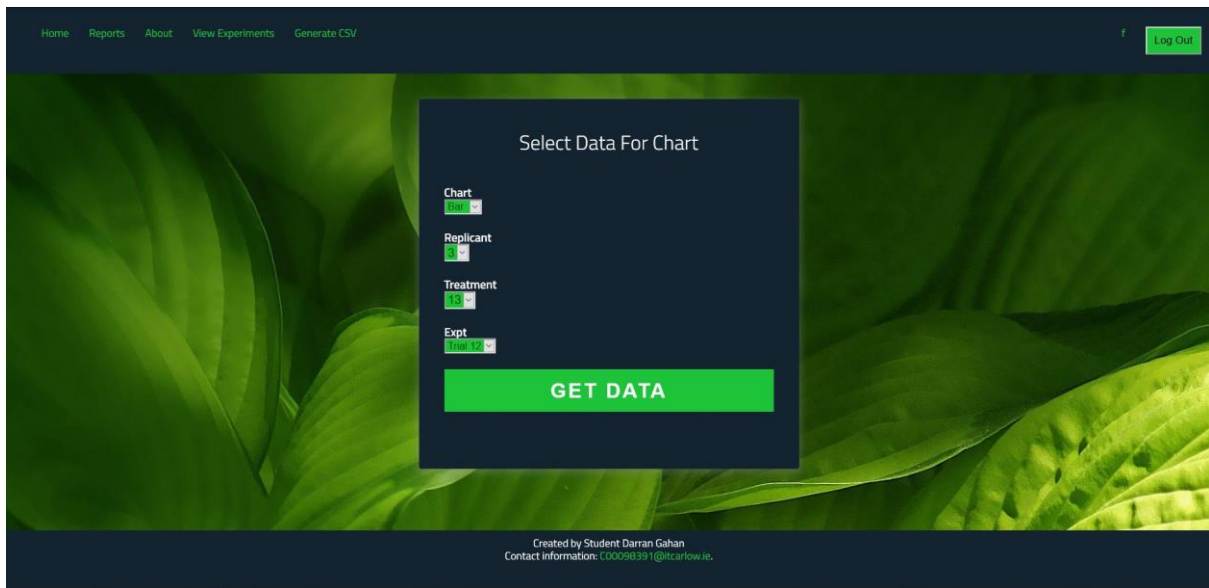


Use ctrl + scroll to zoom the map

Created by Student Darran Gahan
Contact information: 00098391@btcarlow.ie.

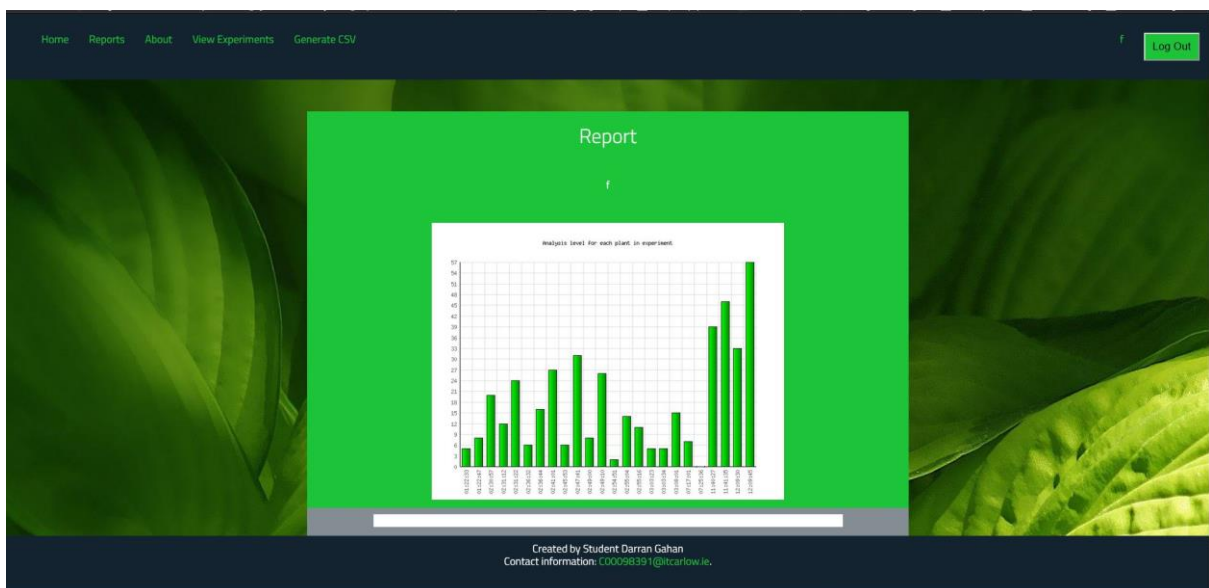
On the individual analysis page, a user can view the image of the leaf, the weather when the image was taken, the time and date, the analysis and the experiment information. The user can also view the location where the analysis was captured.

Generate Report screen



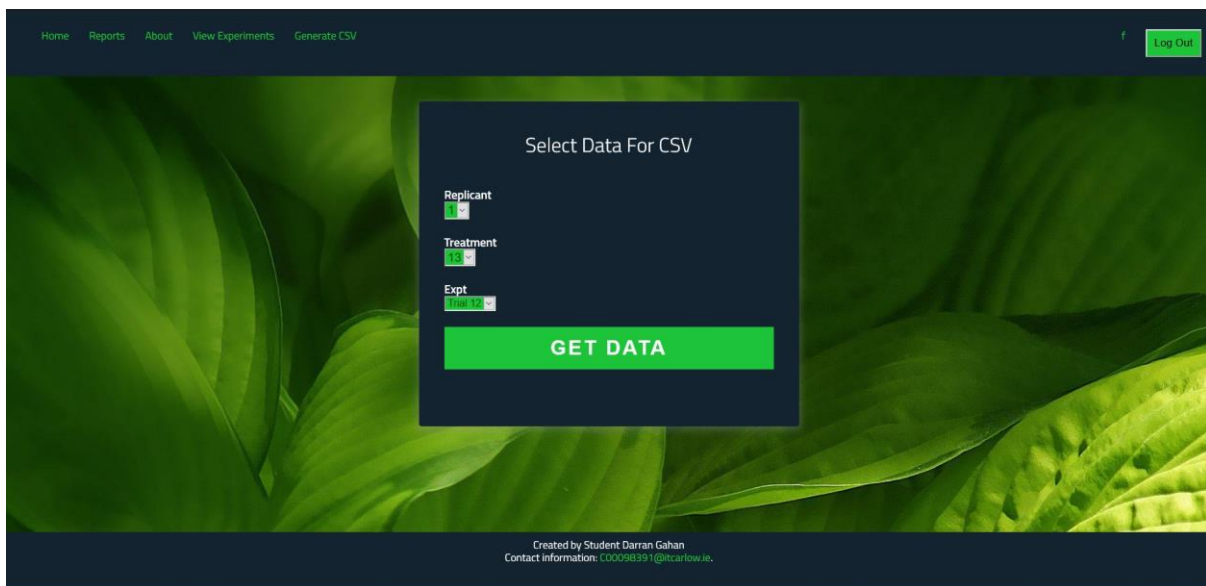
In above image a user should select the information regarding the experiment they wish to generate a chart for.

View Report screen.



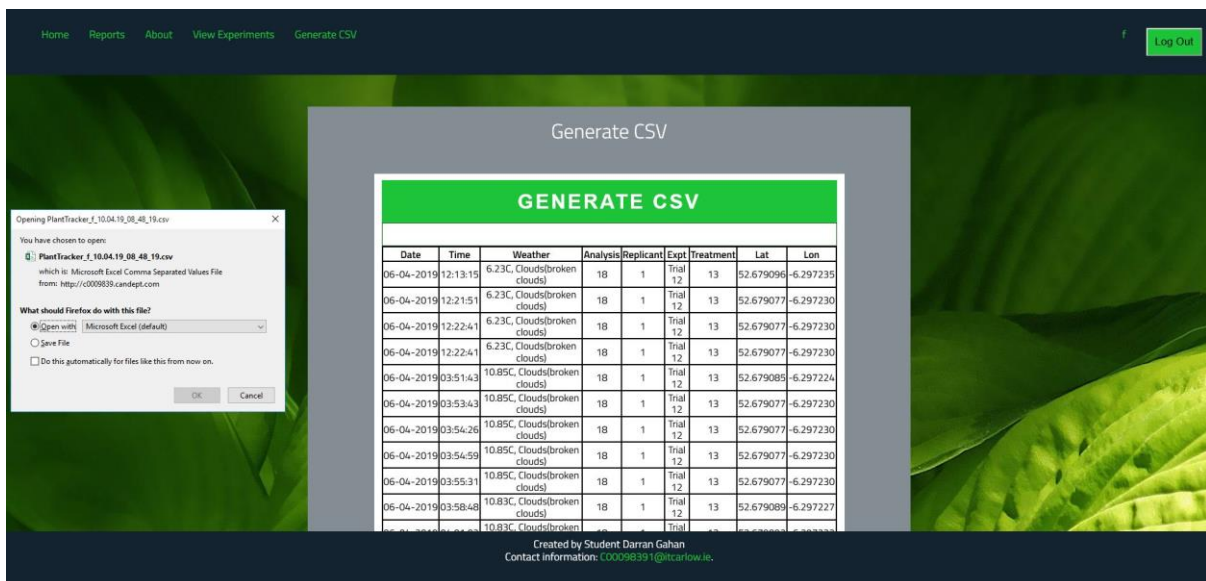
The above image shows a chart that was generate from experiment data. Each bar in chart is an analysis with height showing level of disease that was detected.

Generate CSV screen.



On the above screen a user should enter the information regarding the experiment they wish to generate a csv for.

Download CSV screen.



The user should then click Generate CSV and select ok to download the csv to their local computer.

Any csv data generated by a user will only contain analyses associated with that user from the selected experiment. If all the analyses from an experiment are required logging in with the administrator account will allow you to download all the analyses from an experiment to a csv file.