International workshop on GIS, Remote Sensing and Geoarchaeology

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Practical handout by Francesc C. Conesa (fcic2@cam.ac.uk), *Arnau Garcia-Molsosa* (ag2023@cam.ac.uk) *and Natalia Égüez* (ne287@cam.ac.uk)

Practical 2 -> Field survey using GIS Cloud services

Aims of the training

- Create forms for archaeological survey.
- Using mobile devices as field GPS.
- Integrate results in a desktop GIS.

Required software

GIS cloud web: http://www.giscloud.com/

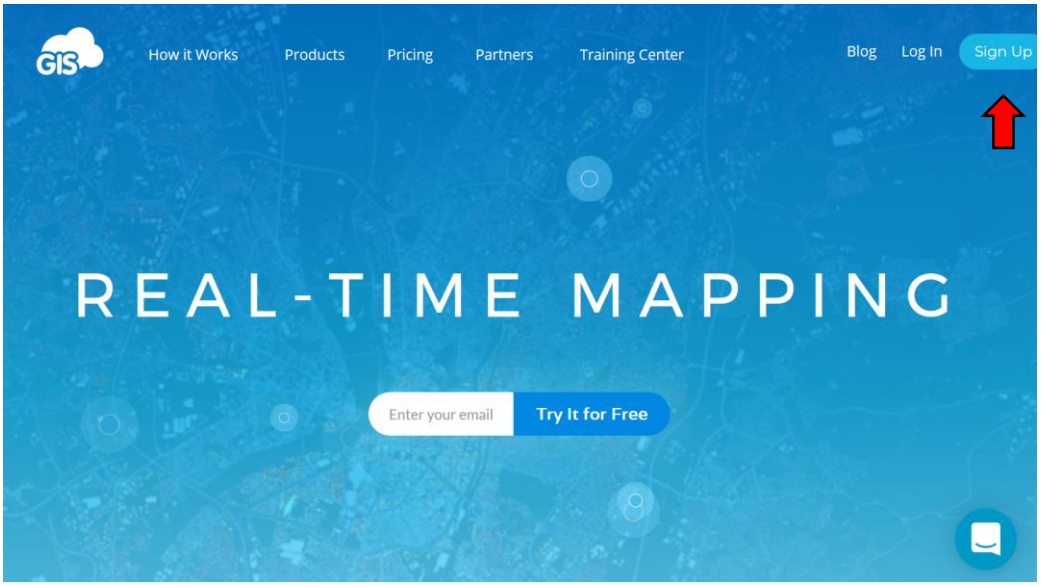
Mobile data collector: https://play.google.com/store/apps/details?id=com.giscloud.mdc; https://itunes.apple.com/us/app/gis-cloud-mobile-data-collection/id640535923?mt=8

Required data

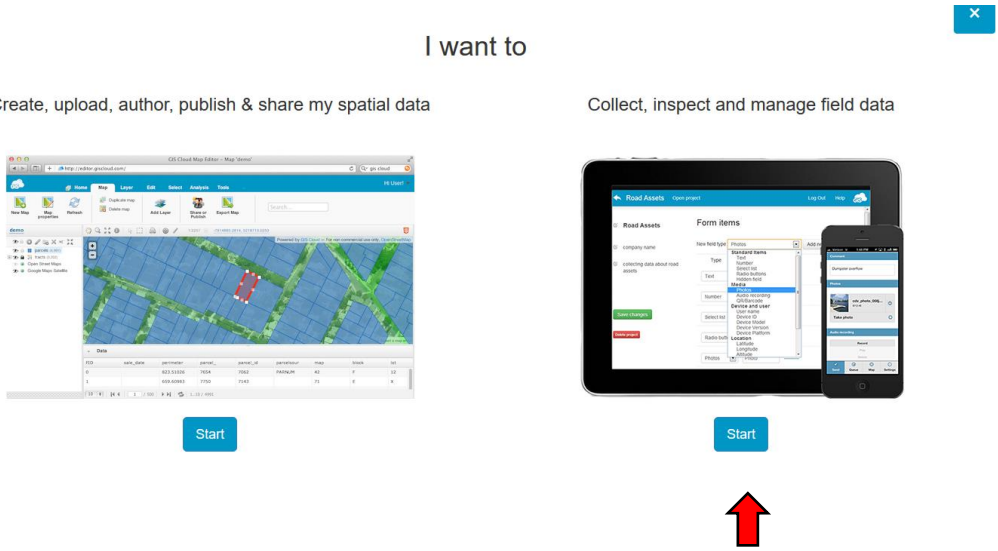
No previous dataset required

Instructions

1- Sign Up & Log In



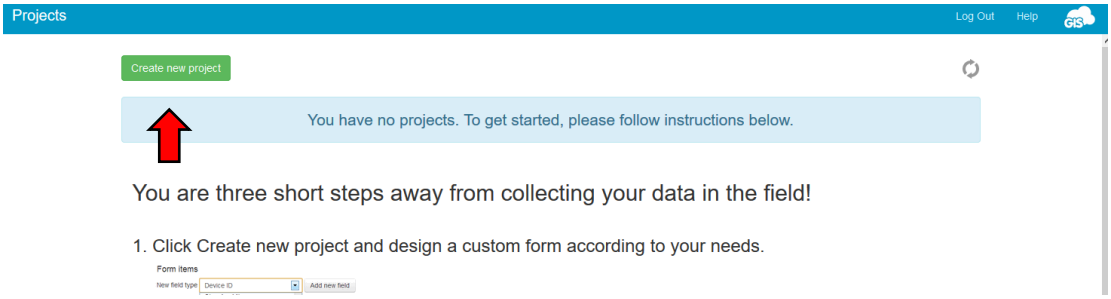
2- Start collect inspect and manage data field



3- Create a new project

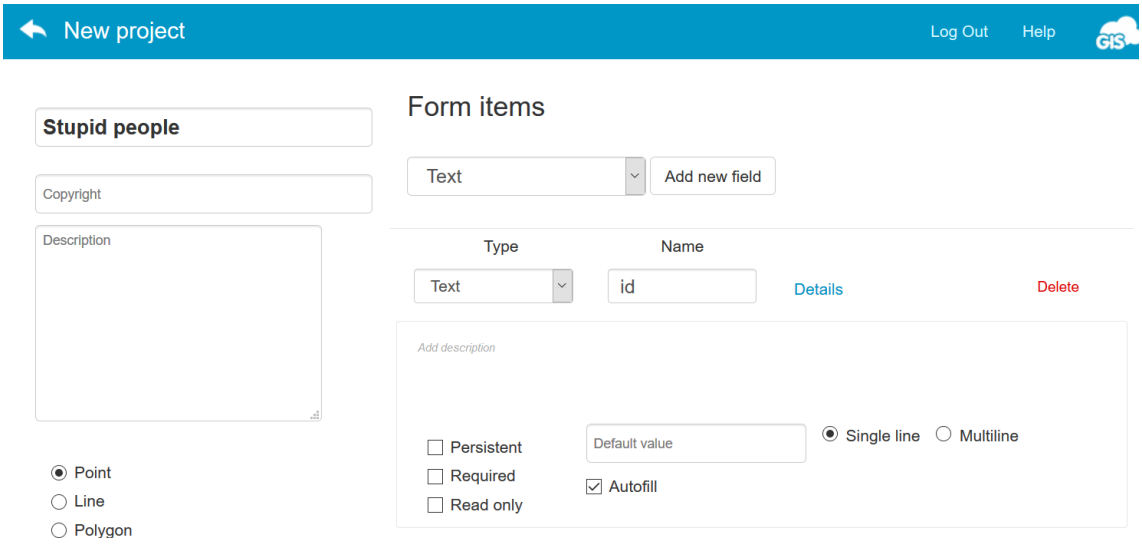
A project defines a type of element that is going to be collected using the same table. Typical examples in archaeology include “sites”, types of monuments or parts of the surface (for a traditional “pottery survey”).

In this practice you can define any element of your daily life (so you can collect data during the course). In the example, I am interested in identifying the areas where I meet more stupid people. Other examples you can use are types of cars, favorite food, buildings, shops, plants and trees, animals etc…

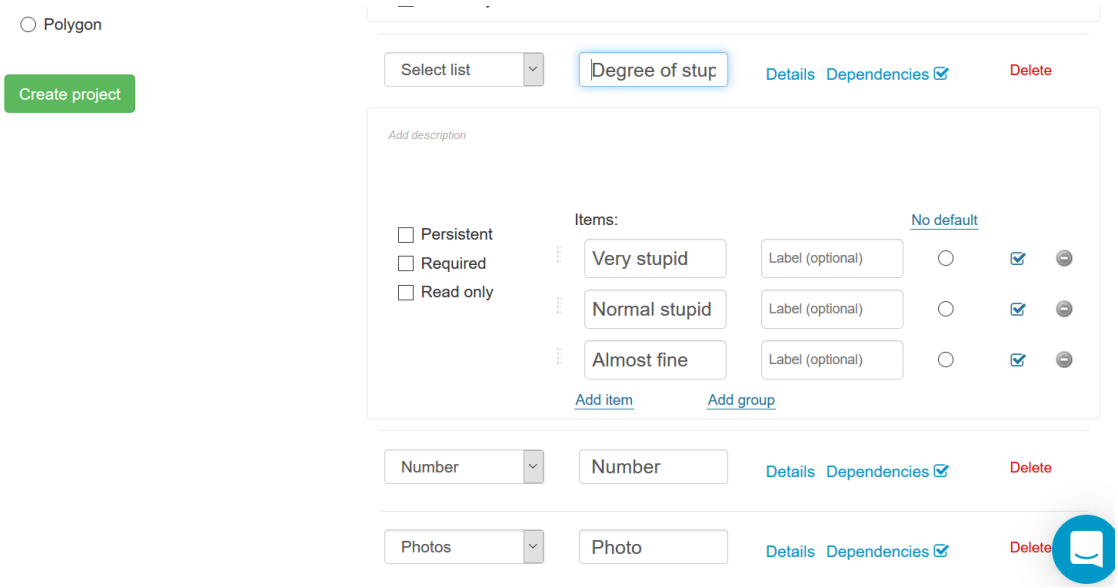


4- Introduce fields.

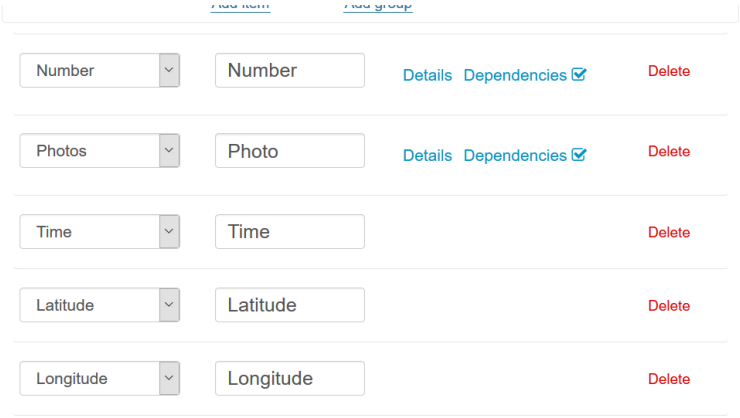
This step is the most important. Here is where we are defining the architecture of our database and it is complicated to change later, so it is very important to define the different fields according to the objectives. Note that for group projects you need to define exactly the same fields.



We will collect the information as points with associated information. In the example the first field is defined as text that will identify the object (e.g. Stupid1, Stupid2, etc…)



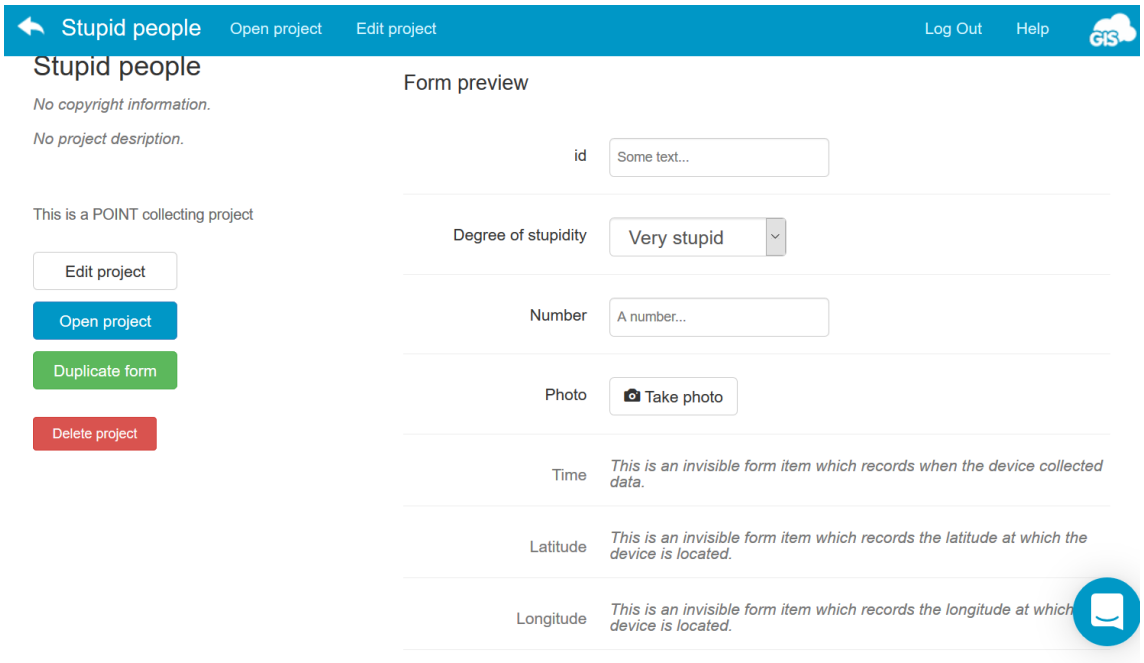
Then I defined a field that will allow to select the degree of stupidity from a list. Create lists is important, because makes the resulting table more consistent (e.g. same word in Mayusc. or Minusc.). The second is a number field, use to collect quantities (in this case, how many stupid people were in a single location). The form also allow to collect images and a photo field have been defined in this case.



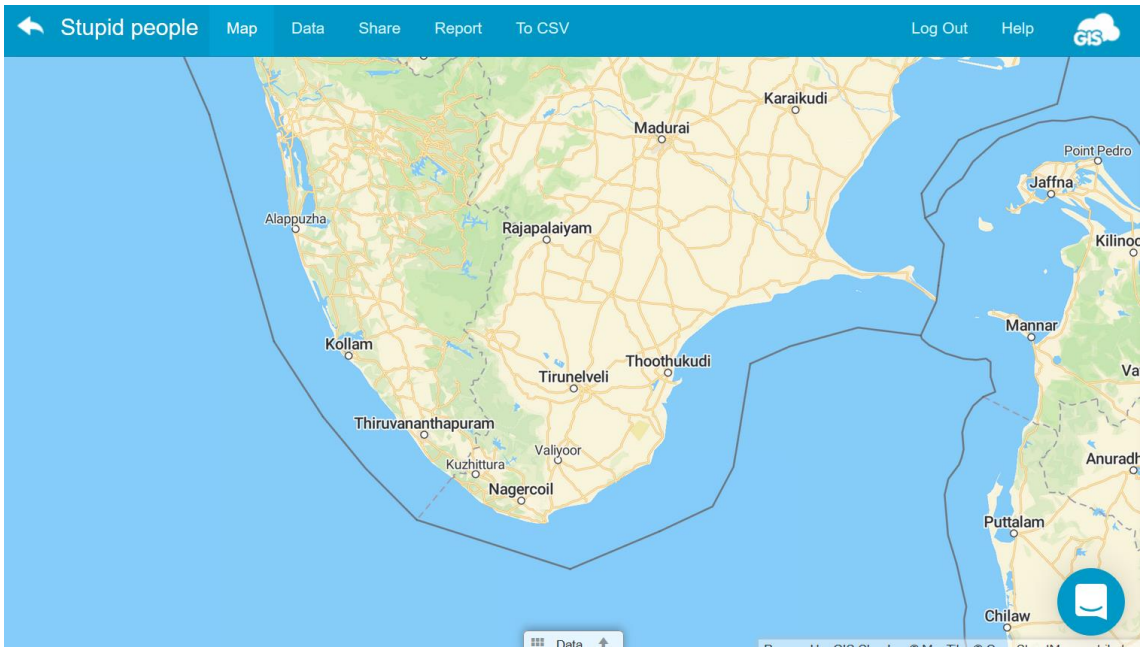
Finally, there are three fields that will be invisible in the phone but will automatically collect information about the location, time and other data that might be of interest.

DON'T FORGET LATITUDE AND LONGITUDE FIELDS

5- Create your project

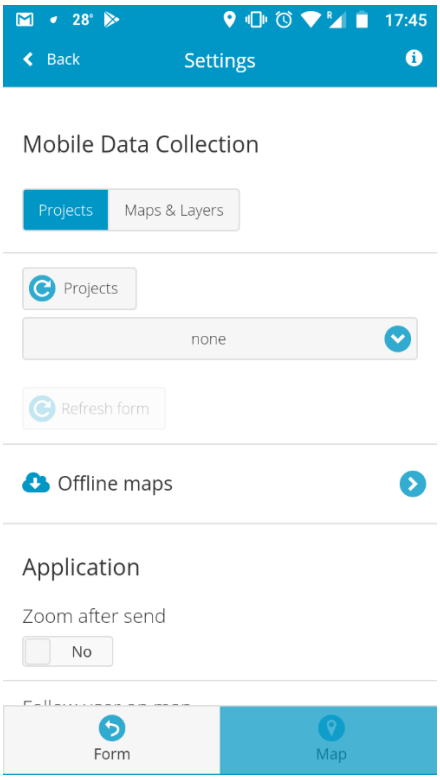


Once done, you will see a page similar to that. You can review your form and edit if you think changes are necessary. After that you can open the project and explore the GisCloud web.

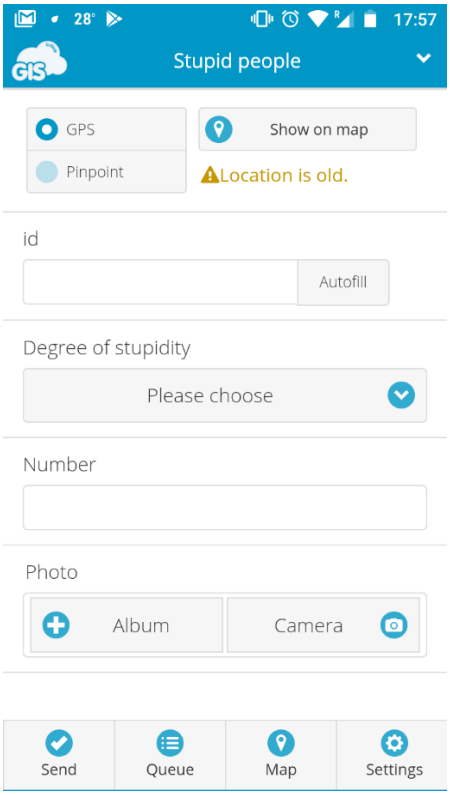


6- Download the app in your phone (GIS Cloud Mobile Data Collector), Log In with your username & password and select your project.

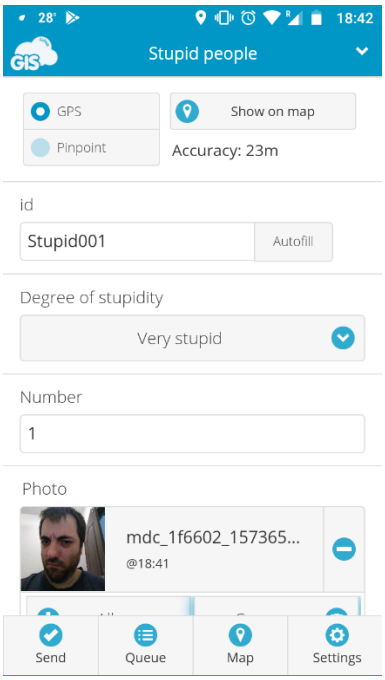
The app is named Mobile Data Collector and is available for android and IOS.



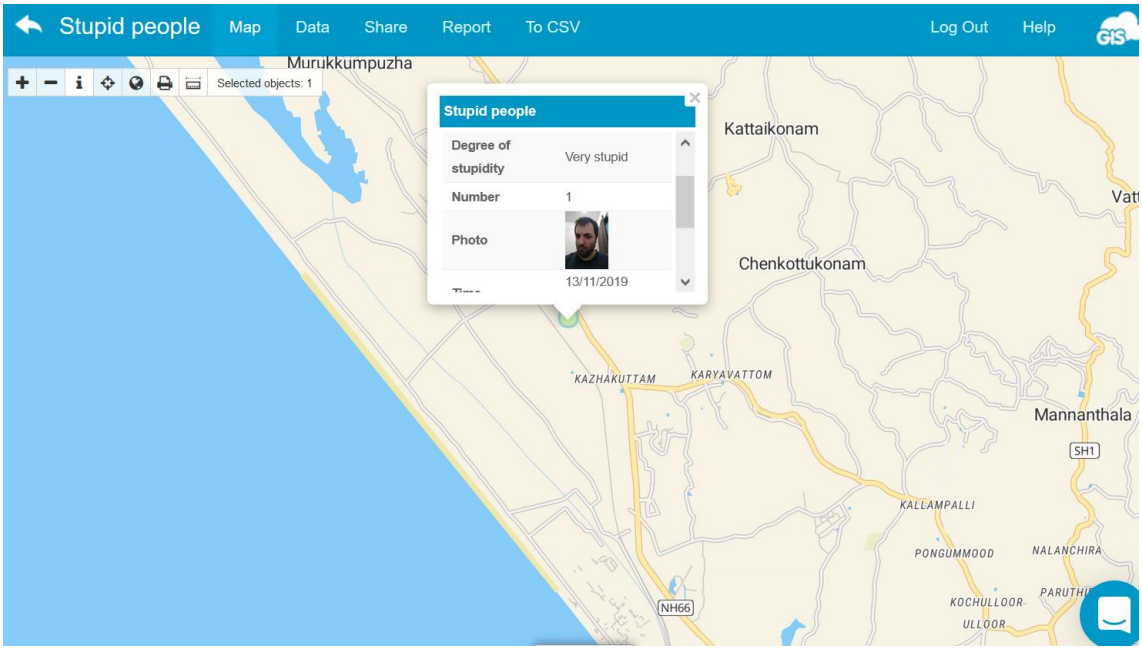
Select the project and open the form.



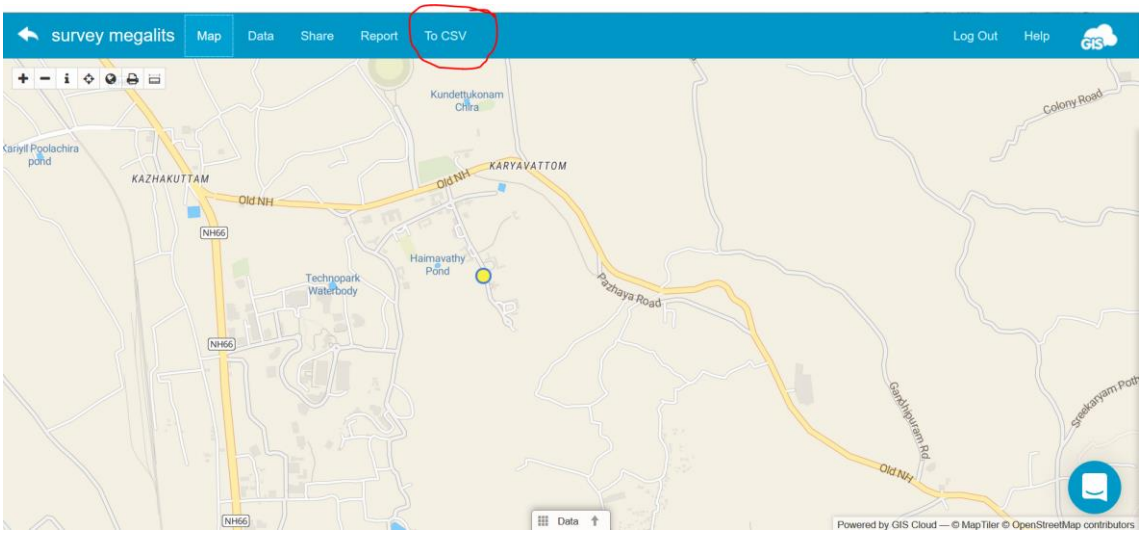
Now you can start to collect data. Complete the form and press “send”, after that you will see a number in “que” when disappear you can open the map and see the point (you can edit the point). Not that in the upper part you can select GPS or Pinpoint (if you don’t trust the GPS). It also indicates the accuracy of the GPSmeasurment.



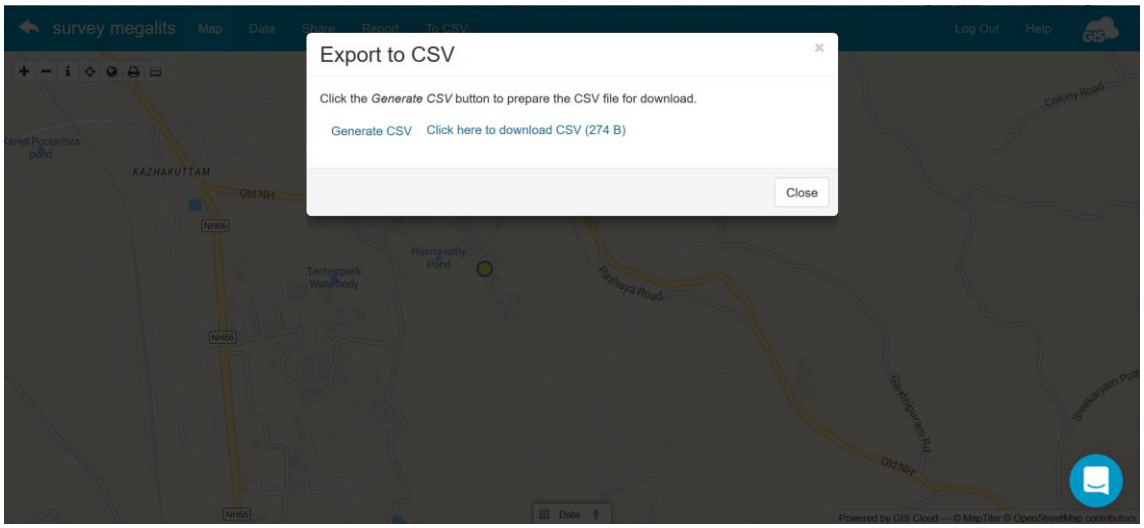
After collecting one point, access again the webpage and you will see the point there as well.



7. Once you have your points ready its time to download and open in QGIS. Wesill start by going to the webpage and select “to CVS”



Then we will select “generate csv” and “download”



8. Now you have a csv file in your download folder. We have covered the loading of csv files in QGIS in other moments of the course. A quick reminder:

Data Source Manager -> Add Delimited Text layer

Select the appropriate columns for the coordinates. The CRS is EPSG4326 (check DMS cooridnates)

Now you should be able to visualize the points in the map. You can load a basemap (e.g. google satellite) and check that everything is in order.

9. Save the csv as a shapefile. Remember:

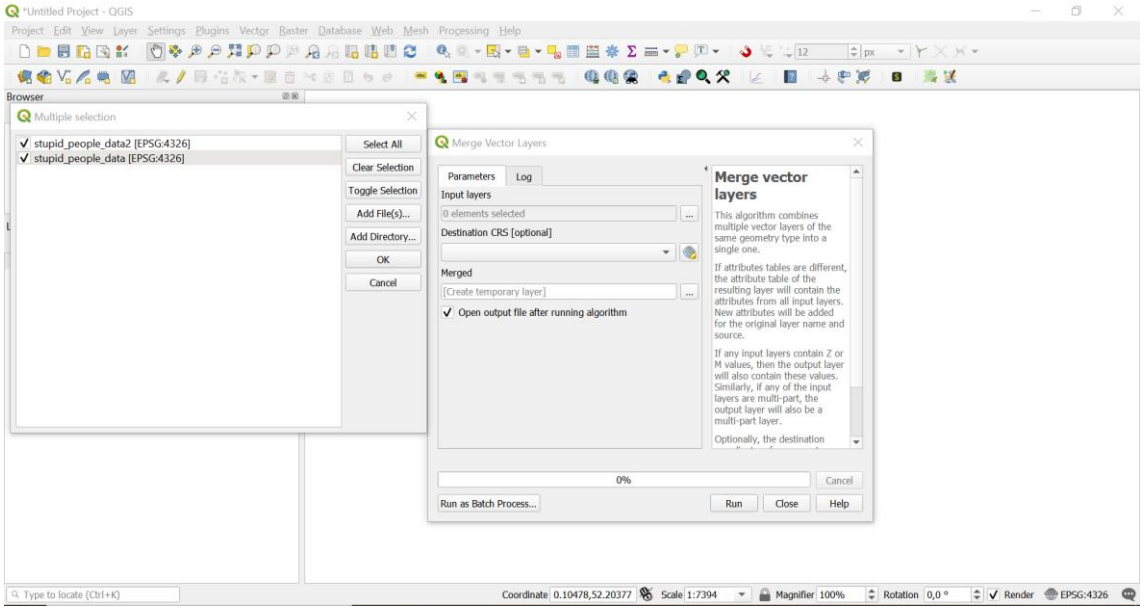
Select the layer and right-click -> Export -> Save Features As

10. Share your Shapefile files (all of them!) with the rest of your team. Open all the layers in your QGIS.

11. In the next step we are going to merge the different observation datasets in a single shapefile. For that we are going to the main menu and select:

Vector -> Data Management tools -> Merge Vector Layers

When the windows appear click on the "…" button and select all the layers you want to merge.



You can select the CRS (EPSG4326) and then press run.

The result is a new temporary layer call "merged" with all the observations. Check the attribute table if everything is ok. Then save the new layer as a shapefile.

Well done! You survey is finish.

Now you can analyze the data and play with the layer properties and Map composer to prepare nice final maps.