Targeted skills

By the end of this module, you will know how to:

- import/convert csv file with lat, lon attributes into GIS layer
- overlay layer created over GoogleMap, OpenStreeMap, … background layers

Data

Data to be used in this module can be found in the following folders:

`data/safecast_subset.csv`

Exercise outline & memos

1. CSV format

CSV stands for "Comma-separated value" and is a file format allowing to store tabular data in plain text.

For instance, let's consider that we measured ionizing radiation at a particular location and time, we could store the data in a single file with a first row containing the name of the attributes measured separated by commas:

- **id**: unique identifier of the measurement
- **value**: measured value
- **captured_at**: time of measuring
- **latitude & longitude**: georeference
- **unit**: unit of measurement (here in Counts per minute)

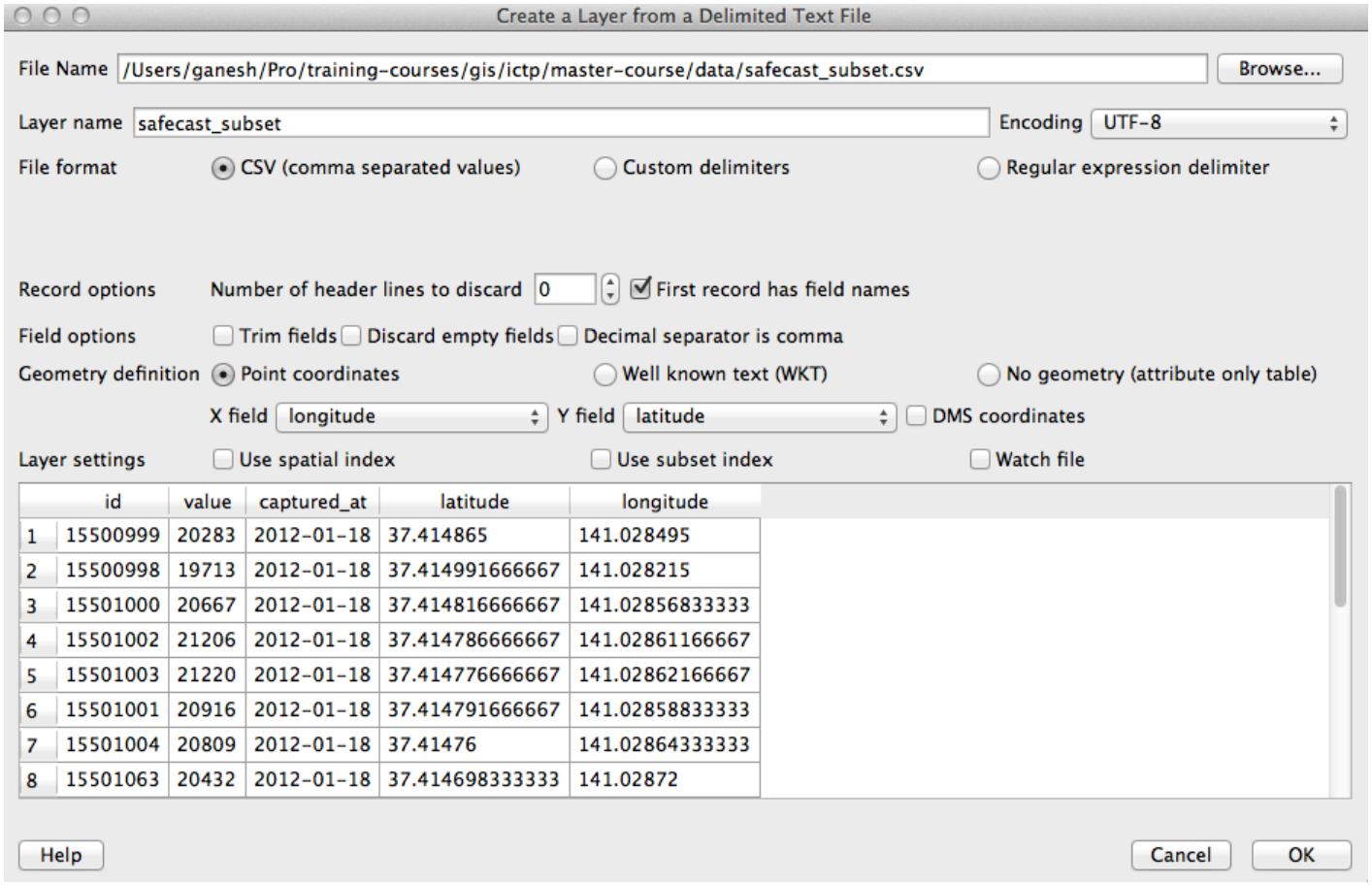
and a series of row containing attribute's values for each single measurement separated by commas:

```
id,value,captured_at,latitude,longitude,unit
15500999,20283,2012-01-18,37.414865,141.028495,cpm
15500998,19713,2012-01-18,37.414991666667,141.028215,cpm
15501000,20667,2012-01-18,37.414816666667,141.02856833333,cpm
...
```

2. Importing/converting csv file with lat, lon attributes into GIS layer

```
[In QGIS top menu]
Layer   Add Layer   Add Delimited Text Layer...
```

then reproduce settings shown below (File format, First record as field names, X field, ...:



	id	value	captured_at	latitude	longitude
1	15500999	20283	2012-01-18	37.414865	141.028495
2	15500998	19713	2012-01-18	37.414991666667	141.028215
3	15501000	20667	2012-01-18	37.414816666667	141.02856833333
4	15501002	21206	2012-01-18	37.414786666667	141.02861166667
5	15501003	21220	2012-01-18	37.414776666667	141.02862166667
6	15501001	20916	2012-01-18	37.414791666667	141.02858833333
7	15501004	20809	2012-01-18	37.41476	141.02864333333
8	15501063	20432	2012-01-18	37.414698333333	141.02872

```
Click "OK"

Select "WGS84" as CRS then click "Ok"

Finally, save the layer as shapefile: click right on layer and "Save As"
```

Congrats, you have created your first GIS layer / shapefile from scratch !

3. Overlaying layer created over GoogleMap or OpenStreeMap layers

```
Install "OpenLayers Plugin" if not already installed. If/when installed the plugin
needs to be activated (checkbox on).

[In QGIS top menu]
Web  OpenLayers plugin  OpenStreetMap  OSM Humanitarian Data Model
```

Warning: Check order of layers in the Layers panel as the point layer might be lower in the stack