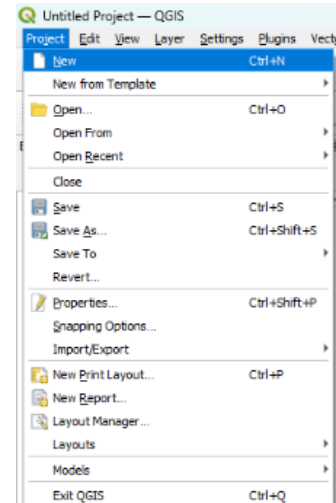


How to Run – placesWorld_CB.py within QGIS

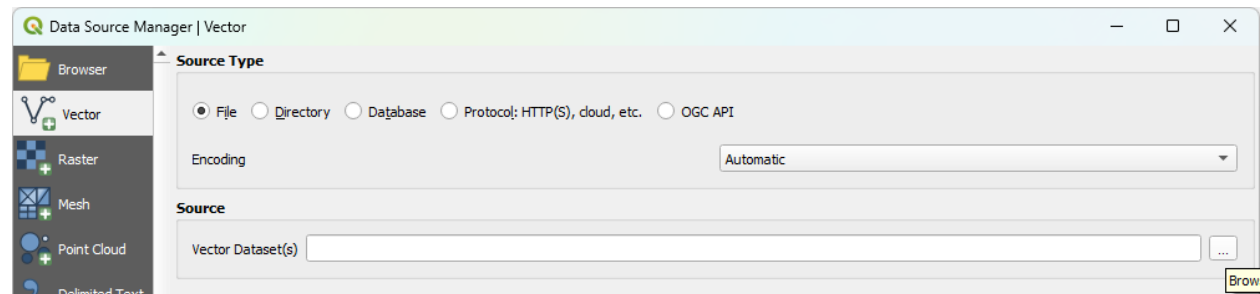
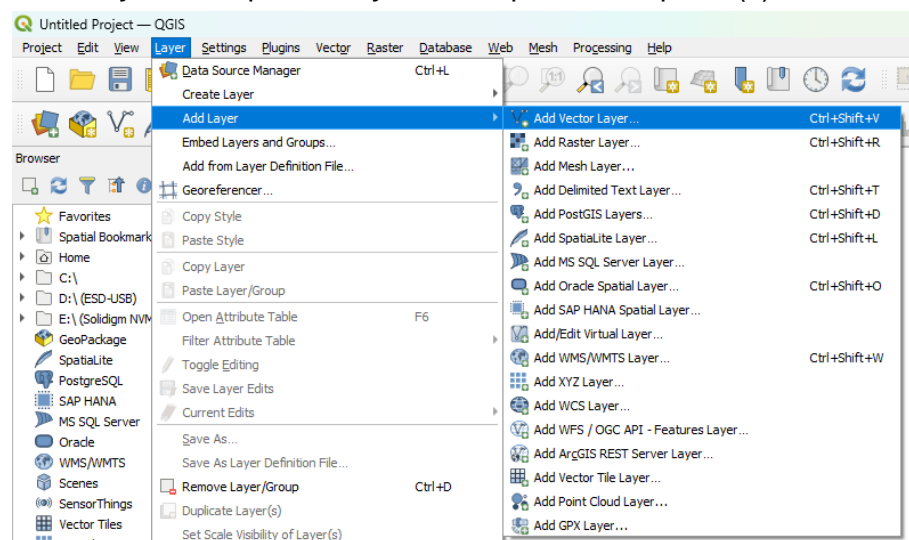
Step 1

Begin by opening QGIS 3.38.2-Grenoble, and make sure you have Python version 3.x installed. Navigate to *Project > New*, then click to create a new project.



Step 2

In your new project, navigate to *Layer > Add Layer > Add Vector Layer*. Click the ellipses next to *Source > Vector Dataset(s)*, then browse your computer for your valid places shapefile(s).

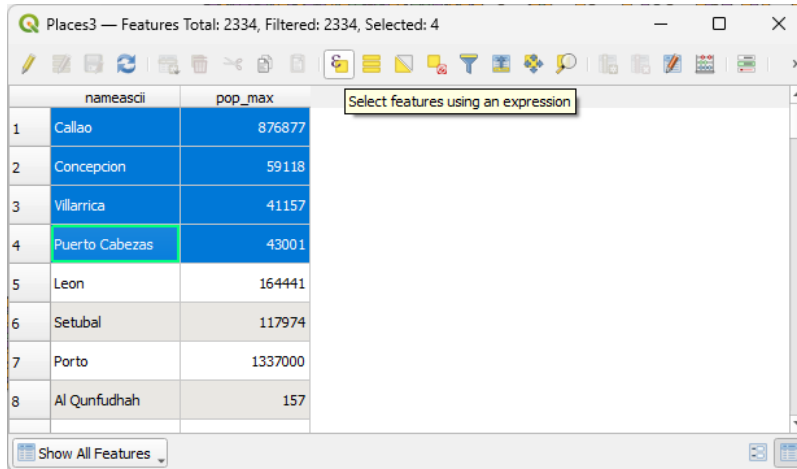


Step 3

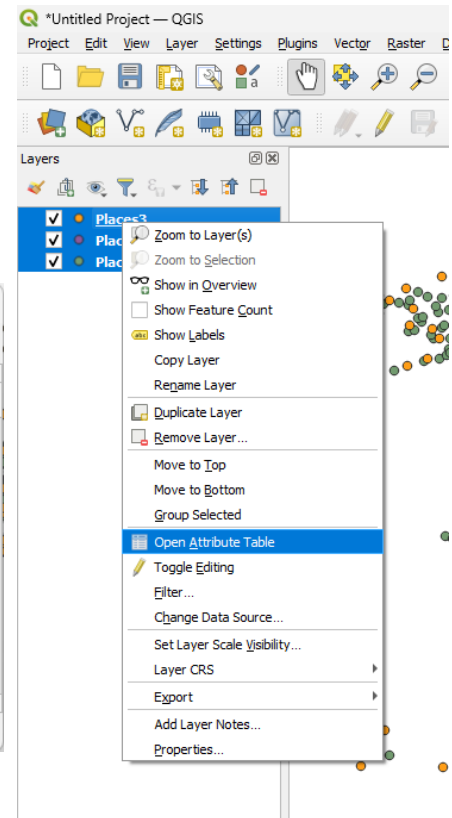
Click on your selected layer(s) for analysis in the *Layers* pane to set it as your active layer. The layer should be highlighted blue once you have selected it.

Step 4

Select any points on the map you want to analyze via right clicking your selected layer(s) and clicking *Open Attribute Table*. From this screen you can use selection queries to select your desired points, or simply select manually by clicking on a row.



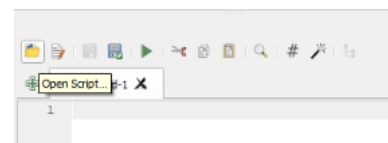
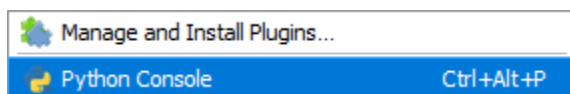
	nameascii	pop_max
1	Callao	876877
2	Concepcion	59118
3	Villarrica	41157
4	Puerto Cabezas	43001
5	Leon	164441
6	Setubal	117974
7	Porto	1337000
8	Al Qunfudhah	157



If no points are selected the script will default to all points available.

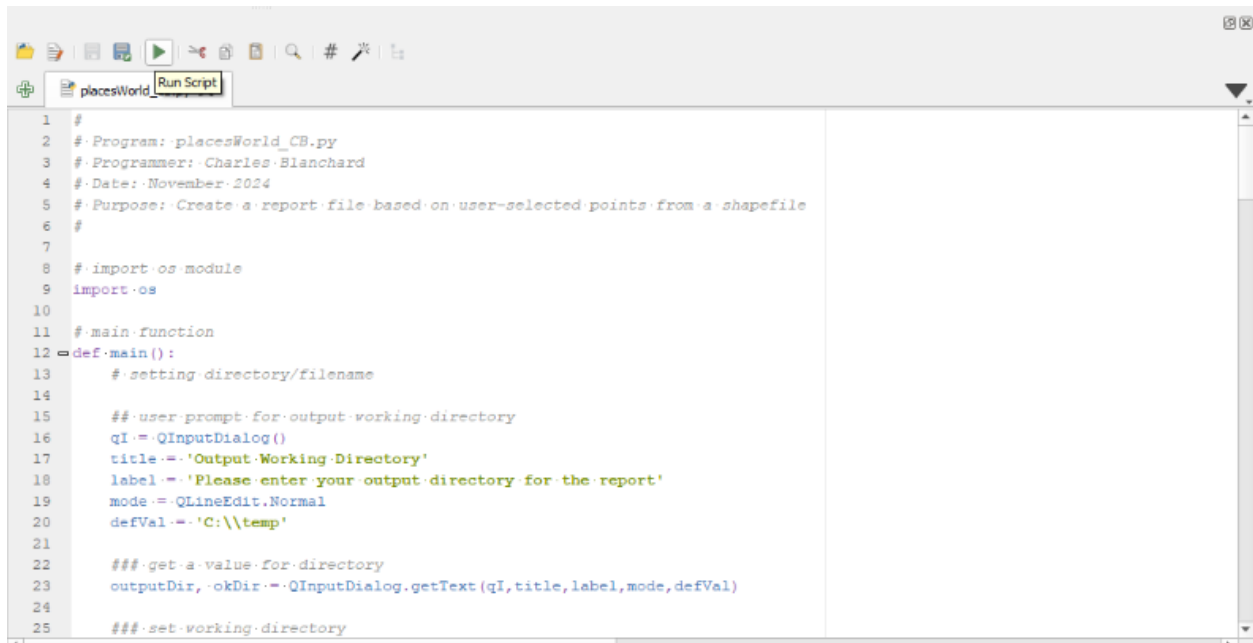
Step 5

Save your project. Next, navigate to *Plugins > Python Console*. Click *Show Editor* within the Python Console. A new editor pane should open at the bottom right of your screen. Within the editor pane click *Open Script*. Browse to *placesWorld_CB.py* and open it.

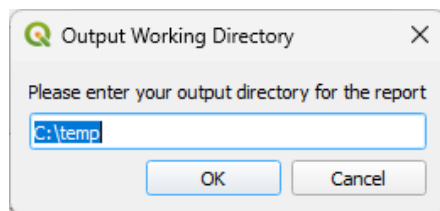


Step 6

Click *Run Script*. A window will open asking for an output working directory for your place report. Enter any valid Windows path to a folder and click **OK**.



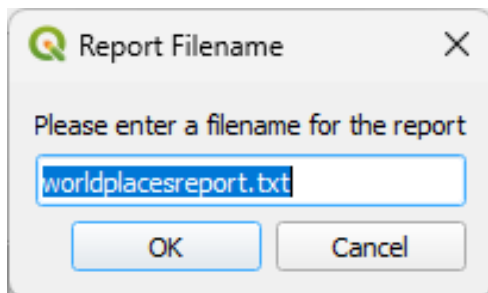
```
1 #
2 # Program: placesWorld_CB.py
3 # Programmer: Charles Blanchard
4 # Date: November 2024
5 # Purpose: Create a report file based on user-selected points from a shapefile
6 #
7
8 # import os module
9 import os
10
11 # main function
12 def main():
13     # setting directory/filename
14
15     ## user prompt for output working directory
16     qI = QInputDialog()
17     title = 'Output Working Directory'
18     label = 'Please enter your output directory for the report'
19     mode = QLineEdit.Normal
20     defVal = 'C:\\temp'
21
22     ## get a value for directory
23     outputDir, okDir = QInputDialog.getText(qI, title, label, mode, defVal)
24
25     ## set working directory
```



Caution: If you enter an invalid path the script will default to C:\\temp. See **Appendix A** for examples of valid and invalid paths.

Step 7

Another window will open asking for a file name for the output report text file. Enter any Windows-permitted name for a file and click **OK**. If your file name does not contain a .txt extension, one will be appended to the end of the name.



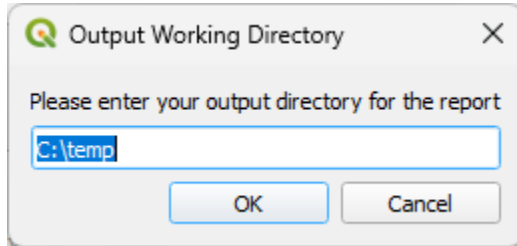
Step 8

A report file stating the number of selected places in each global quadrant as well as the total population by quadrant and highest/lowest population places will be created in your selected directory. Open this file in your text editor of choice and view your results! A selection of reports are located in **Appendix B** for further viewing.

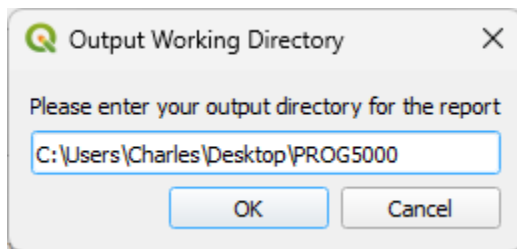
Appendix A

Examples of valid and invalid path names for output directory

Valid:

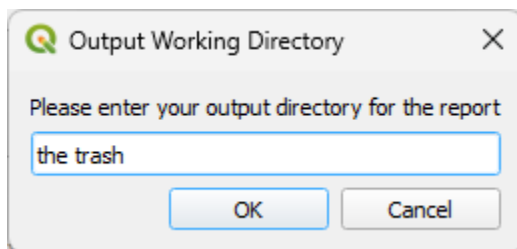


Default directory

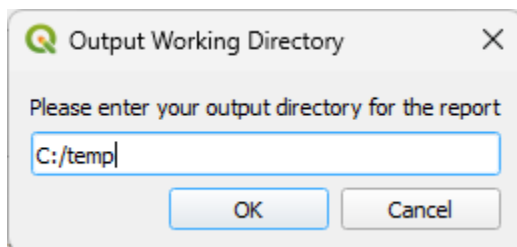


A copied path from an accesible folder

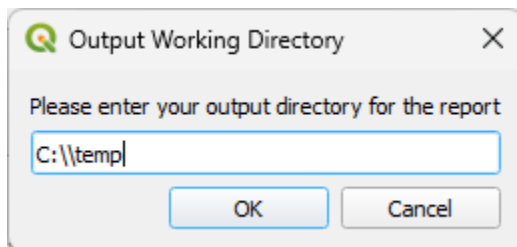
Invalid:



Random text string



Forward slash instead of backslash



Double backslashes

Appendix B

Final Reports

Three different shapefiles selected as active layer; no points selected:

```
Report of Selected World Places
=====
1190 northeastern places have a total population of 1117769503
542 northwestern places have a total population of 362289929
341 southeastern places have a total population of 126630831
261 southwestern places have a total population of 159539499
=====
The Northeastern place of Tokyo has the highest population of 35676000
The Northeastern place of Krasino has the lowest population of 10
```

One shapefile selected as active layer; no points selected:

```
Report of Selected World Places
=====
1043 northeastern places have a total population of 146121716
998 northwestern places have a total population of 93324040
118 southeastern places have a total population of 3150291
341 southwestern places have a total population of 27304414
=====
The Northwestern place of Irvine has the highest population of 3010232
The Northwestern place of El Porvenir has the lowest population of 10
```

One shapefile selected as active layer; five points selected:

```
Report of Selected World Places
=====
0 northeastern places have a total population of 0
0 northwestern places have a total population of 0
0 southeastern places have a total population of 0
5 southwestern places have a total population of 118018
=====
The Southwestern place of Florida has the highest population of 32234
The Southwestern place of Canelones has the lowest population of 19698
```