Exercise 4: Joining Data

In this exercise you will learn how to join data from an excel table to spatial data in QGIS. Since the shapefile contains multiple, unique records, the data to be linked must be in the same form. If a name field is used for linking, ensure that the spelling is exactly the same.

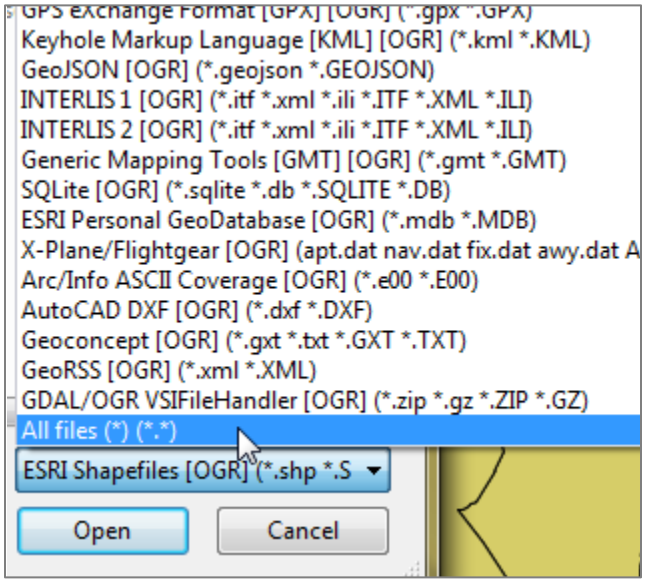
Section 1: Join Attributes

The *VNM_adm2* layer only contains the name information for Provinces and geographic information. You will join the *Province_Statistics* file to the *VNM_adm2* layer in order to display the indicator data contained in the excel file.

1. Launch the QGIS Desktop application
2. Click *File>Open*
3. Navigate to

   \\Vietnam_Training\04_Exercises\Project_Files\VNM_Joining_Data.qgs

4. Click the *Add Vector Layer*  button from the toolbar
5. Click the *Browse* button
6. Select *All Files (*),(*,*)* from the *File Type* menu on the bottom right



7. Navigate to

   \\Vietnam_Training\05_Data\01_Excel\Province_Statistics.xls

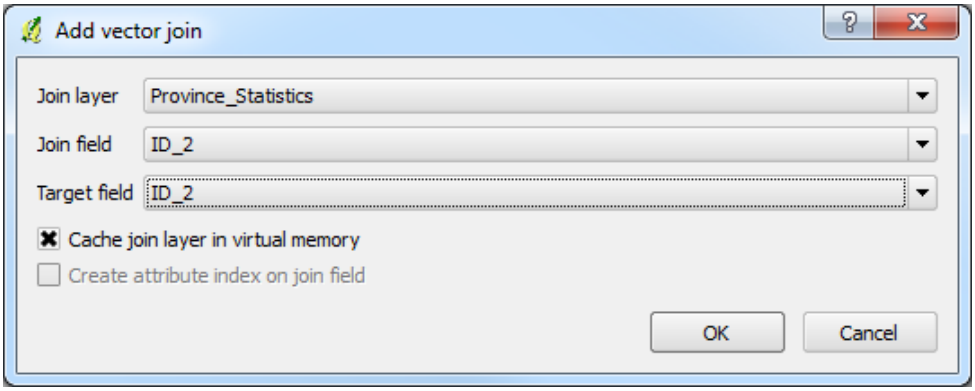
8. Click *Open*
9. Right click on the *Province_Statistics* layer and select *Open Attribute Table*
10. Explore the attribute table

11. Right click on the *VNM_adm2* layer in the *Layer Panel* and select *Properties*
12. Click the *Joins* tab in the *Layer Properties* window

13. Click the *Plus*  button
14. Set *Join Layer* to *Province Statistics*
15. Set *Join Field* to *ID_2*
16. Set *Target Field* to *ID_2*

    (Both layers have an *ID_2* field in their respective attribute tables.)

Your *Add vector join* window should look like the image below



17. Click *OK*
18. Click *OK* to close the *Layer Properties* window
19. Right click on the *VNM_adm2* layer and select *Open Attribute Table*
20. Scroll to the right to see the newly joined data

You should see the data for select variables joined to the appropriate region. You can now map this data or send the file to colleagues.

> **Note**: If the attribute table does not contain the data for the variables you just attempted to join, go back to the .dbf file to ensure that the Join field is spelled exactly the same as the target join field from the shapefile. If there are any differences in spelling, accents, hyphens, or one field contains extra spaces, the attribute join will not work for that record.

The joined data is currently being stored in virtual memory. To save the join permanently, you must export it as a new layer.

21. Right click on the *VNM_adm2* layer and select *Save As…*
22. Choose *ESRI Shapefile* as the Format

23. Click *Browse* for save as, navigate to

    \\Vietnam_Training\06_Participant_Work

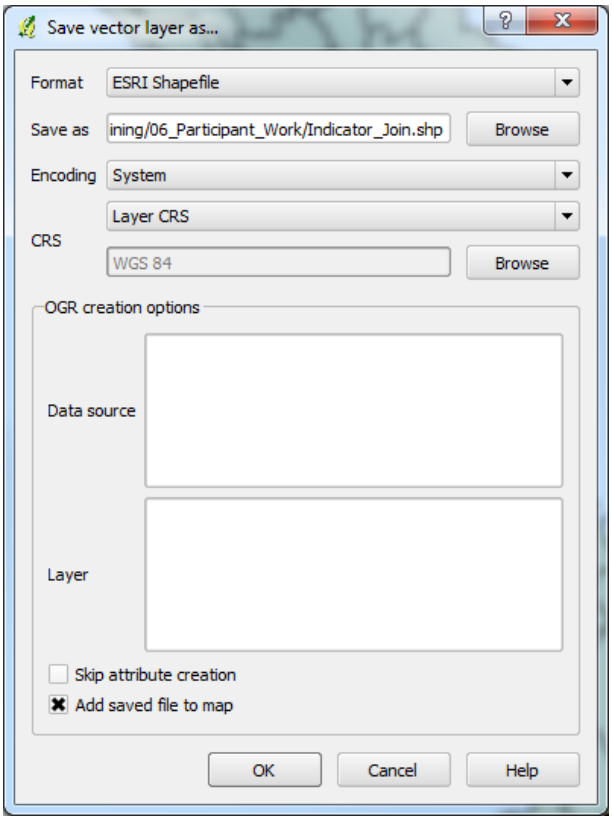
    Name the shapefile “Indicator_Join”

24. Click *Save*

25. Select *Layer CRS* for CRS

26. Check the box next to *Add Saved File to Map*

The resulting window should look like this:



27. Click *OK*

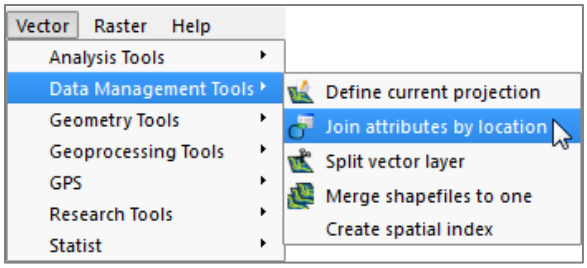
Section 2: Join Attributes by Location

Now we will join the *Settlements_Cities (VNM_settlements_cities)* data to the *Provinces (VNM_adm2)* based on location.

1. Click *Layer>Add Vector Layer…*
2. Browse to

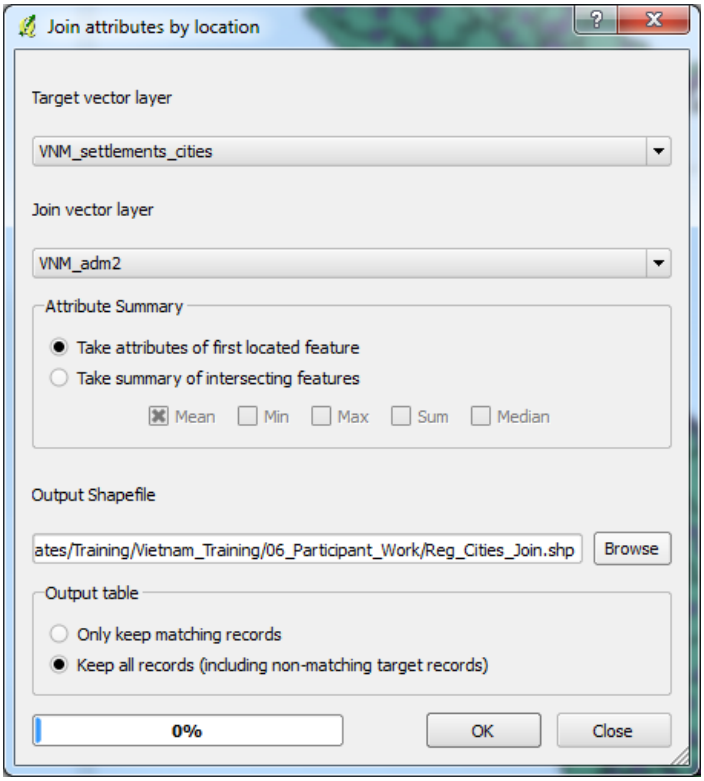
   \\Vietnam_Training\06_Participant_Work \VNM_settlements_cities.shp

3. Click *Open*
4. Click *Vector>Data Management Tools>Join Attributes by Location*



5. Set *Target Vector Layer* field to *VNM_settlements_cities*
6. Set *Join Vector Layer* to *VNM_adm2*
7. Set *Attribute Summary* to *Take Attributes of First Located Features*
8. Set the *Output Shapefile* folder to \\Vietnam_Training\06_Participant_Work
9. Name the shapefile "Reg_Cities_Join"
10. Set *Output Table* to *Keep All Records (Including non-matching Target Records)*

The resulting window should look like this:



11. Click *OK*
12. In the pop-up box, click *Yes* to 'Would you like to add the new layer to the TOC?'
13. Click *Close*
14. Right click on the *Reg_Cities_Join* layer, select *Open Attribute Table*, you should now see the regional attribute information for each city as new fields

Note: Each of the 778 populated places will have their name in the *FULL_NAME* field and the containing province name in the *VARNAME_2* field.

End Exercise.

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