Working with Attributes

QGIS Tutorials and Tips

Author

Ujaval Gandhi

http://google.com/+UjavalGandhi

Translations by

Michael Gieding

Mit Attributen arbeiten

GIS Daten bestehen aus zwei Teilen – Features und Attribute. Attribute sind strukturierte Inhalte über jedes Feature. Dieses Tutorial zeigt, wie Attribute angezeigt und einfache Abfragen auf diese in QGIS durchgeführt werden können.

Übersicht der Aufgabe

Der Datensatz in dieser Anleitung beinhaltet Informationen über besiedelte Orte der Welt. Die Aufgabe besteht darin, in einer Abfrage alles Hauptstädte der Welt zu finden, die mehr als 1.000.000 Einwohner haben.

Other skills you will learn

- Select features from a layer using expressions.
- Deselect features from a layer using the Attributes toolbar.
- Using Query Builder to show a subset of features from a layer.

Daten besorgen

Natural Earth has a nice Populated Places dataset. Download the simple (less columns) dataset
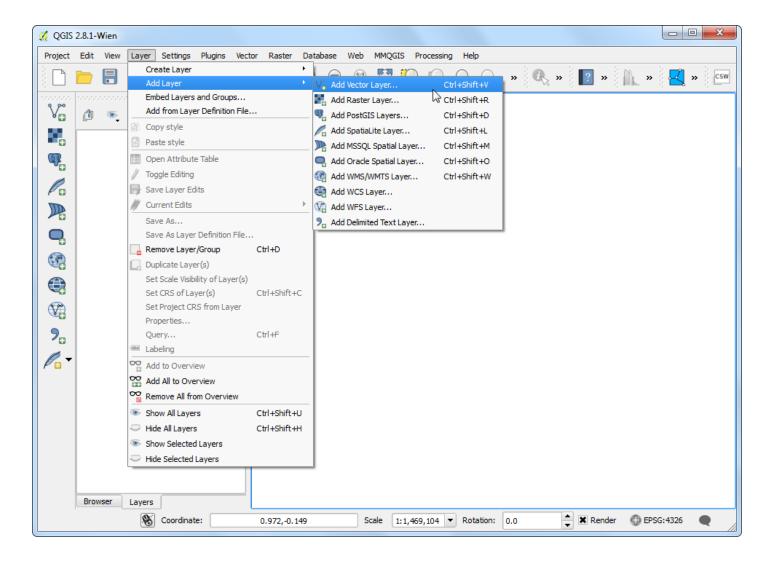
For convenience, you may directly download a copy of datasets from the link below:
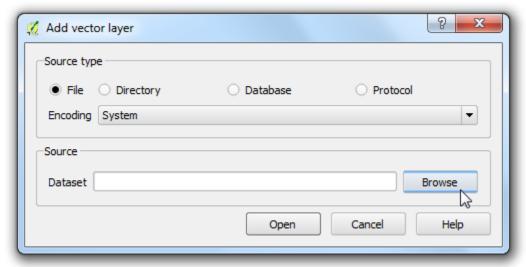
ne_10m_populated_places_simple.zip

Datenquelle [NATURALEARTH]

Arbeitsablauf

1. Once you have downloaded the data, open QGIS. Go to Layer ‣ Add Layer ‣ Add Vector Layer.

2. Klicken Sie auf Durchsuchen und gehen Sie zum Ordner, wo sich die geladenen Daten befinden.

3. Finden Sie die ZIP-Datei *ne_10m_populated_places_simple.zip*. Sie brauchen diese nicht zu entpacken. QGIS kann direkt ZIP-Dateien lesen. Selektieren Sie die Datei und klicken Öffnen.

4. Die Auswahl wird nun in QGIS geladen und Sie sehen viele Punkte, die die besiedelten Orte der Welt repräsentieren.

5. Right-click the layer and select Open Attribute Table.

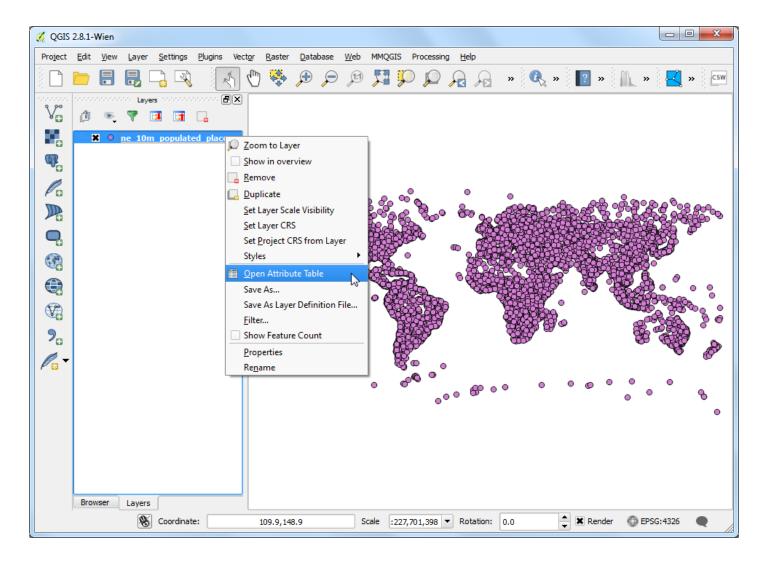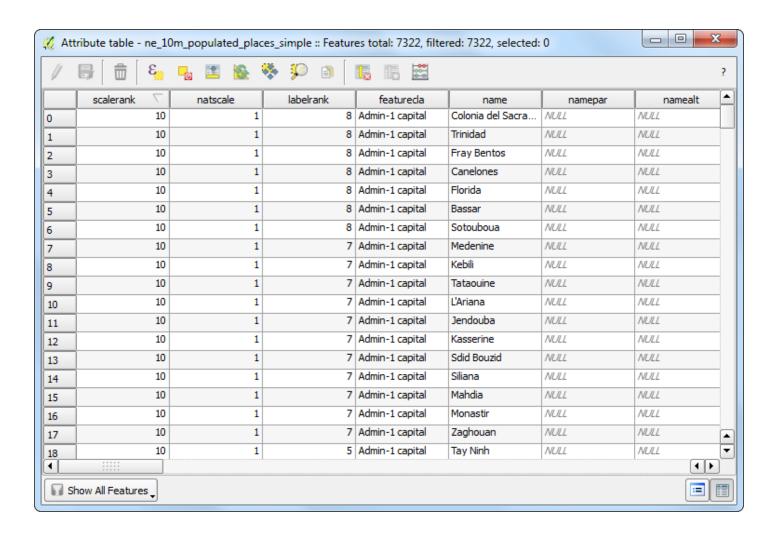6. Erkunden Sie die unterschiedlichen Attribute und deren Werte.

	scalerank	natscale	labelrank	featurecla	name	namepar	namealt
0	10	1	8	Admin-1 capital	Colonia del Sacra...	NULL	NULL
1	10	1	8	Admin-1 capital	Trinidad	NULL	NULL
2	10	1	8	Admin-1 capital	Fray Bentos	NULL	NULL
3	10	1	8	Admin-1 capital	Canelones	NULL	NULL
4	10	1	8	Admin-1 capital	Florida	NULL	NULL
5	10	1	8	Admin-1 capital	Bassar	NULL	NULL
6	10	1	8	Admin-1 capital	Sotouboua	NULL	NULL
7	10	1	7	Admin-1 capital	Medenine	NULL	NULL
8	10	1	7	Admin-1 capital	Kebili	NULL	NULL
9	10	1	7	Admin-1 capital	Tataouine	NULL	NULL
10	10	1	7	Admin-1 capital	L'Ariana	NULL	NULL
11	10	1	7	Admin-1 capital	Jendouba	NULL	NULL
12	10	1	7	Admin-1 capital	Kasserine	NULL	NULL
13	10	1	7	Admin-1 capital	Sdid Bouzid	NULL	NULL
14	10	1	7	Admin-1 capital	Siliana	NULL	NULL
15	10	1	7	Admin-1 capital	Mahdia	NULL	NULL
16	10	1	7	Admin-1 capital	Monastir	NULL	NULL
17	10	1	7	Admin-1 capital	Zaghouan	NULL	NULL
18	10	1	5	Admin-1 capital	Tay Ninh	NULL	NULL

7. Uns interessiert die Population von jedem Feature, so dass wir uns auf das Feld *pop_max* konzentrieren. Sie können zweifach auf die Überschrift klicken, um die Tabelle in absteigender Reihenfolge zu sortieren.

8. Now we are ready to perform our query on these attributes. QGIS uses SQL–like expressions to perform queries. Click Select features using an expression.

9. In the Select By Expression window, expand the Fields and Values section and double-click the ***pop_max*** label. You will notice that it is added to the expression section at the bottom. If you aren't sure about the field values, you can click the Load all unique values to see what the attribute values are present in the dataset. For this exercise, we are looking to find all features that have a population greater than ***1,000,000***. So complete the expression as below and click Select.

```
"pop_max" > 1000000
```

10. Click on Close and return to the main QGIS window. You will notice that a subset of points is now rendered in yellow. This is the result of our query and you are seeing all places from the dataset that have the ***pop_max*** attribute value greater than ***1,000,000***.

11. The goal for this exercise is to find the places that are country capitals. The field containing this data is **adm0cap**. The value *1* indicates that the place is a capital. We can add this criteria to our previous expression using the ***and*** operator. Let's refine our query to select only those places which are capitals. Click on the Select feature using an expression button in the attribute table and enter the expression as below and click Select and then Close.

```
"pop_max" > 1000000 and "adm0cap" = 1
```

12. Return to the main QGIS window. Now you will see a smaller subset of the points selected. This is the result of the second query and shows all places from the dataset that are country capitals as well as have population greater than 1,000,000. If we wanted to do some further analysis on this subset of data, we can make this selection persistent. Right-click the **_ne_10m_populated_places_simple_** layer and select Properties.

13. In the General tab, scroll down to the Feature subset section. Click Query Builder.

14. Enter the same expression you had entered earlier and click OK.

```
"pop_max" > 1000000 and "adm0cap" = 1
```

Query Builder

Set provider filter on ne_10m_populated_places_simple

Fields
- featurecla
- name
- namepar
- namealt
- diffascii
- nameascii
- adm0cap
- capalt
- capin
- worldcity
- megacity
- sov0name
- sov_a3
- adm0name
- adm0_a3

Values

Sample   All

☐ Use unfiltered layer

Operators

| = | < | > | LIKE | % | IN | NOT IN |
| <= | >= | != | ILIKE | AND | OR | NOT |

Provider specific filter expression

`"pop_max" > 1000000 and "adm0cap" = 1`

OK   Test   Clear   Cancel   Help

15. Back in the main QGIS window, you will see rest of the points disappear. You may now perform any other analysis on this layer and only the features that match our expression will be used. You will notice that the points still appear in yellow. This is because they are still selected. Find the Deselect Features from All Layers button under the Attributes toolbar and click on it.

16. You will see that the points are now de-selected and rendered in their original color.