

Working with Attributes

QGIS Tutorials and Tips



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Εργασία με Χαρακτηριστικά

Τα δεδομένα GIS έχουν δύο μέρη – τα χαρακτηριστικά και τις ιδιότητες. Τα χαρακτηριστικά είναι δομημένα δεδομένα για κάθε χαρακτηριστικό. Αυτό το tutorial δείχνει πώς να δείτε τα χαρακτηριστικά και να κάνουμε τα βασικά ερωτήματα σχετικά με τους QGIS.

Επισκόπηση του έργου

Το σύνολο των δεδομένων για αυτό το tutorial περιέχει πληροφορίες σχετικά με κατοικημένες περιοχές του κόσμου. Ο στόχος είναι να αναζητήσετε και να βρείτε όλες τις πρωτεύουσες του κόσμου που έχουν πληθυσμό άνω των 1.000.000.

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.

Αποκτήστε τα δεδομένα

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](#)

Πηγή δεδομένων[NATURALEARTH]_

Διαδικασία

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



2. Κάντε κλικ στο Browse και μεταβείτε στο φάκελο όπου έχετε κατεβάσει τα δεδομένα.



3. Εντοπίστε το κατεβασμένο αρχείο zip ***ne_10m_populated_places_simple.zip***. Δεν χρειάζεται να αποσυμπιέσετε το αρχείο. Το QGIS έχει τη δυνατότητα να διαβάσει απευθείας τα αρχεία zip. Επιλέξτε το αρχείο και κάντε κλικ στο κουμπί Open.



4. Η επιλεγμένη στρώση θα πρέπει τώρα να τοποθετηθεί στο QGIS και θα εμφανιστούν πολλά σημεία που αντιπροσωπεύουν τις κατοικημένες περιοχές του κόσμου.



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



6. Εξερευνήστε τα διάφορα χαρακτηριστικά και τις αξίες τους.

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

| | 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 |

Show All Features

7. Ενδιαφερόμαστε για τον πληθυσμό του κάθε χαρακτηριστικού, έτσι **pop_max** είναι το πεδίο που ψάχνουμε. Μπορείτε να κάνετε κλικ δύο φορές στο πεδίο κεφαλίδας για να ταξινομήσετε τη στήλη με φθίνουσα σειρά.

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

| | longitude | changed | namediff | diffnote | pop_max | pop_min | pop_other |
|------|------------------|----------------|----------|---------------------|----------|----------|-----------|
| 7312 | 139.75140742900 | 0.000000000000 | 0 | NULL | 35676000 | 8336599 | 1294525 |
| 7297 | -73.98001692880 | 0.000000000000 | 0 | NULL | 19040000 | 8008278 | 929260 |
| 7303 | -99.13098820170 | 0.000000000000 | 0 | NULL | 19028000 | 10811002 | 1001844 |
| 7313 | 72.85698929740 | 0.000000000000 | 0 | NULL | 18978000 | 12691836 | 1242608 |
| 7318 | -46.62501998040 | 0.000000000000 | 0 | NULL | 18845000 | 10021295 | 1152294 |
| 7221 | 77.23000402720 | 4.000000000000 | 0 | Changed feature... | 15926000 | 7633213 | 674738 |
| 7311 | 121.43650467800 | 0.000000000000 | 0 | NULL | 14987000 | 14608512 | 1680357 |
| 7316 | 88.32467565810 | 4.000000000000 | 1 | Name changed. ... | 14787000 | 4631392 | 778371 |
| 7248 | 90.40857946670 | 5.000000000000 | 0 | Changed scale ra... | 12797394 | 7000940 | 1499553 |
| 7290 | -58.39753137370 | 0.000000000000 | 0 | NULL | 12795000 | 10929146 | 1027145 |
| 7295 | -118.17998051100 | 0.000000000000 | 0 | NULL | 12500000 | 3694820 | 14226 |
| 7168 | 66.99000891000 | 5.000000000000 | 0 | Changed scale ra... | 12130000 | 11624219 | 1157027 |
| 7310 | 31.24996821970 | 0.000000000000 | 0 | NULL | 11893000 | 7734614 | 1372055 |
| 7317 | -43.22502079420 | 0.000000000000 | 0 | NULL | 11748000 | 2010175 | 182148 |
| 7280 | 135.46014481500 | 4.000000000000 | 0 | Changed feature... | 11294000 | 2592413 | 963078 |
| 7306 | 116.38828568400 | 0.000000000000 | 0 | NULL | 11106000 | 7480601 | 903323 |
| 7274 | 120.98221716200 | 0.000000000000 | 0 | NULL | 11100000 | 3077575 | 238128 |
| 7302 | 37.61552282590 | 0.000000000000 | 0 | NULL | 10452000 | 10452000 | 1058538 |
| 7299 | 29.01000158560 | 0.000000000000 | 0 | NULL | 10061000 | 9945610 | 965148 |

Show All Features

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.

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

| | longitude | changed | namediff | diffnote | pop_max | pop_min | pop_other |
|------|------------------|----------------|----------|---------------------|----------|----------|-----------|
| 7312 | 139.75140742900 | 0.000000000000 | 0 | NULL | 35676000 | 8336599 | 1294525 |
| 7297 | -73.98001692880 | 0.000000000000 | 0 | NULL | 19040000 | 8008278 | 929260 |
| 7303 | -99.13098820170 | 0.000000000000 | 0 | NULL | 19028000 | 10811002 | 1001844 |
| 7313 | 72.85698929740 | 0.000000000000 | 0 | NULL | 18978000 | 12691836 | 1242608 |
| 7318 | -46.62501998040 | 0.000000000000 | 0 | NULL | 18845000 | 10021295 | 1152294 |
| 7221 | 77.23000402720 | 4.000000000000 | 0 | Changed feature... | 15926000 | 7633213 | 674738 |
| 7311 | 121.43650467800 | 0.000000000000 | 0 | NULL | 14987000 | 14608512 | 1680357 |
| 7316 | 88.32467565810 | 4.000000000000 | 1 | Name changed. ... | 14787000 | 4631392 | 778371 |
| 7248 | 90.40857946670 | 5.000000000000 | 0 | Changed scale ra... | 12797394 | 7000940 | 1499553 |
| 7290 | -58.39753137370 | 0.000000000000 | 0 | NULL | 12795000 | 10929146 | 1027145 |
| 7295 | -118.17998051100 | 0.000000000000 | 0 | NULL | 12500000 | 3694820 | 14226 |
| 7168 | 66.99000891000 | 5.000000000000 | 0 | Changed scale ra... | 12130000 | 11624219 | 1157027 |
| 7310 | 31.24996821970 | 0.000000000000 | 0 | NULL | 11893000 | 7734614 | 1372055 |
| 7317 | -43.22502079420 | 0.000000000000 | 0 | NULL | 11748000 | 2010175 | 182148 |
| 7280 | 135.46014481500 | 4.000000000000 | 0 | Changed feature... | 11294000 | 2592413 | 963078 |
| 7306 | 116.38828568400 | 0.000000000000 | 0 | NULL | 11106000 | 7480601 | 903323 |
| 7274 | 120.98221716200 | 0.000000000000 | 0 | NULL | 11100000 | 3077575 | 238128 |
| 7302 | 37.61552282590 | 0.000000000000 | 0 | NULL | 10452000 | 10452000 | 1058538 |
| 7299 | 29.01000158560 | 0.000000000000 | 0 | NULL | 10061000 | 9945610 | 965148 |

Show All Features

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
```



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.

