

Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



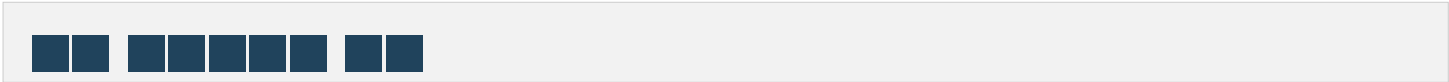
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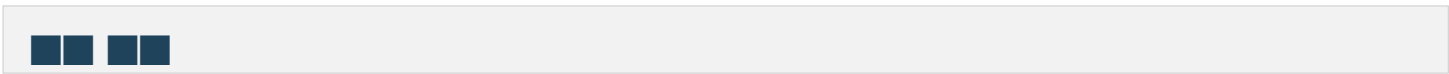
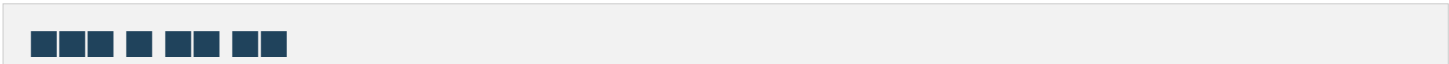
Translations by

SongHyun Choi

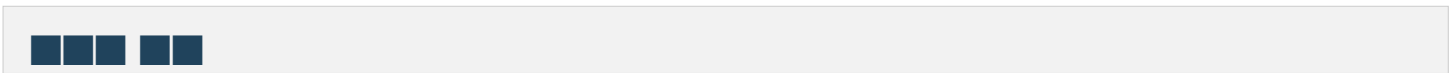


QGISは、GISデータを扱うためのソフトウェアです。このソフトウェアを使用して、地図を作成したり、データを分析したりすることができます。

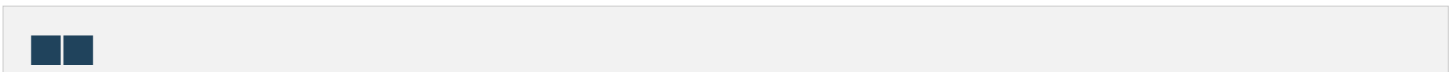
※Field Calculator※

[illegible]

- **Map Projection:** The map uses a **Projected Coordinate Reference System (CRS)**.
- **Units:** The map uses **meters** as the unit of measurement.



```
`Natural Earth <http://www.naturalearthdata.com/downloads/10m-cultural-vectors/railroads/>`_
■■■■ ■■■■ ■■■ ■■■■■■ ■■■■■. ■■■■■ `North America supplement <http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne\_10m\_railroads\_north\_america.zip>`_
■■■■ ■■■ [NATURALEARTH]
```



1. ■■■■ :menuselection: `Layer --> Add Vector Layer` ■■■■.



2. ``ne_10m_railroads_north_america.zip``:guiabel:``OK``.



3. In the *Select layers to add...* dialog, choose ne_10m_railroads_north_america.shp layer.



4. The next step is to open the attribute table for the selected layer. In the QGIS interface, click on the 'Open Attribute Table' button (represented by a small icon of a table) in the bottom right corner of the QGIS window.

Attribute table - ne_10m_railroads_north_america :: Features total: 1127, filtered: 1127, selected: 0

	scalerank	featurecla	sov_a3	uident	add	natrscale	continent
0	8	Railroad	USA	1506	0	0	North America
1	9	Railroad	USA	1606	1	5	North America
2	8	Railroad	USA	1706	0	0	North America
3	8	Railroad	USA	1806	0	0	North America
4	8	Railroad	USA	1906	0	0	North America
5	8	Railroad	USA	2006	0	0	North America
6	8	Railroad	USA	2106	0	0	North America
7	9	Railroad	USA	2206	1	5	North America
8	8	Railroad	USA	2306	0	0	North America
9	8	Railroad	USA	2406	0	0	North America
10	8	Railroad	USA	2506	0	0	North America
11	8	Railroad	USA	2606	0	0	North America
12	8	Railroad	USA	2706	0	0	North America
13	8	Railroad	USA	2806	0	0	North America
14	9	Railroad	USA	2906	1	5	North America
15	9	Railroad	USA	3006	1	5	North America
16	8	Railroad	USA	3106	0	0	North America
17	8	Railroad	USA	3206	0	0	North America
18	8	Railroad	USA	3306	0	0	North America
19	8	Railroad	USA	3506	0	0	North America
20	8	Railroad	USA	3606	0	0	North America
21	8	Railroad	USA	3706	0	0	North America
22	8	Railroad	USA	3806	0	0	North America
23	9	Railroad	USA	3906	1	5	North America

Show All Features

6. `Attribute Table` : `guiabel:` `Select features using an expression`.



7. ■■■ Select By Expression ■■■■■■ ■■ ■■■■■. ■■■■■ Functions list ■■■■■ ■■■■ ■ Fields and Values ■ ■■■■■ sov_a3`■■■■ ■■■■■. ■■■■ ■■■ ■■■■■■ ■■■ :guilabel:`Expression`■■■■ ■■ ■■■ ■■■■■■. `sov_a3` = 'USA'`■■ ■■■■■ ■■■■■■■. ■■ :guilabel:`Select` ■ ■■■ ■■ :guilabel:`Close` ■ ■■■■■■.



8. Back in the main QGIS window, you will see that all lines that fall in USA are selected and appear in yellow.



9. ■■■ ■■■■ ■■ ■■■ ■■■■■■ ■■■■■■ ■■■■■■. ``ne_10m_railroads_north_america`` ■■■■
 ■■■■ ■■■■ ■■■■ ■■■■ ■■ :guilabel: Save Selection As... ■ ■■■■■■. ■■ ■■■■■■ ■■
 ■■■■ ■■■■ ■■■■ ■ ■■ ■ ■■■■ ■■■■ ■■■■ ■■■■.



10. `guiabel:Browse`` `usa_railroads.shp`` `CRS`` `guiabel:CRS`` `guiabel:Browse``

Note

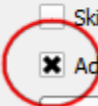
`CRS`` `EPSG:4326`` `(CRS)`` `**degrees**` `**degrees*`` `square` `degrees**`` `**meters`` `**feet**``



11. `filter = 'Filter'` `crs = 'north america equidistant conic'` `crs = 'North_America_Equidistant_Conic'` `crs = 'EPSG:102010'` `crs = 'OK'`



12. ■ ■■■■■ ■■ ■■■■ ■■■■■ Save vector layer as... ■■■■■■■■ ■■■■ ■■■■ ■■■■ ■■■
 :guilabel: 'Add saved file to map' ■ ■■■■■ :guilabel: 'OK' ■ ■■■■■■.



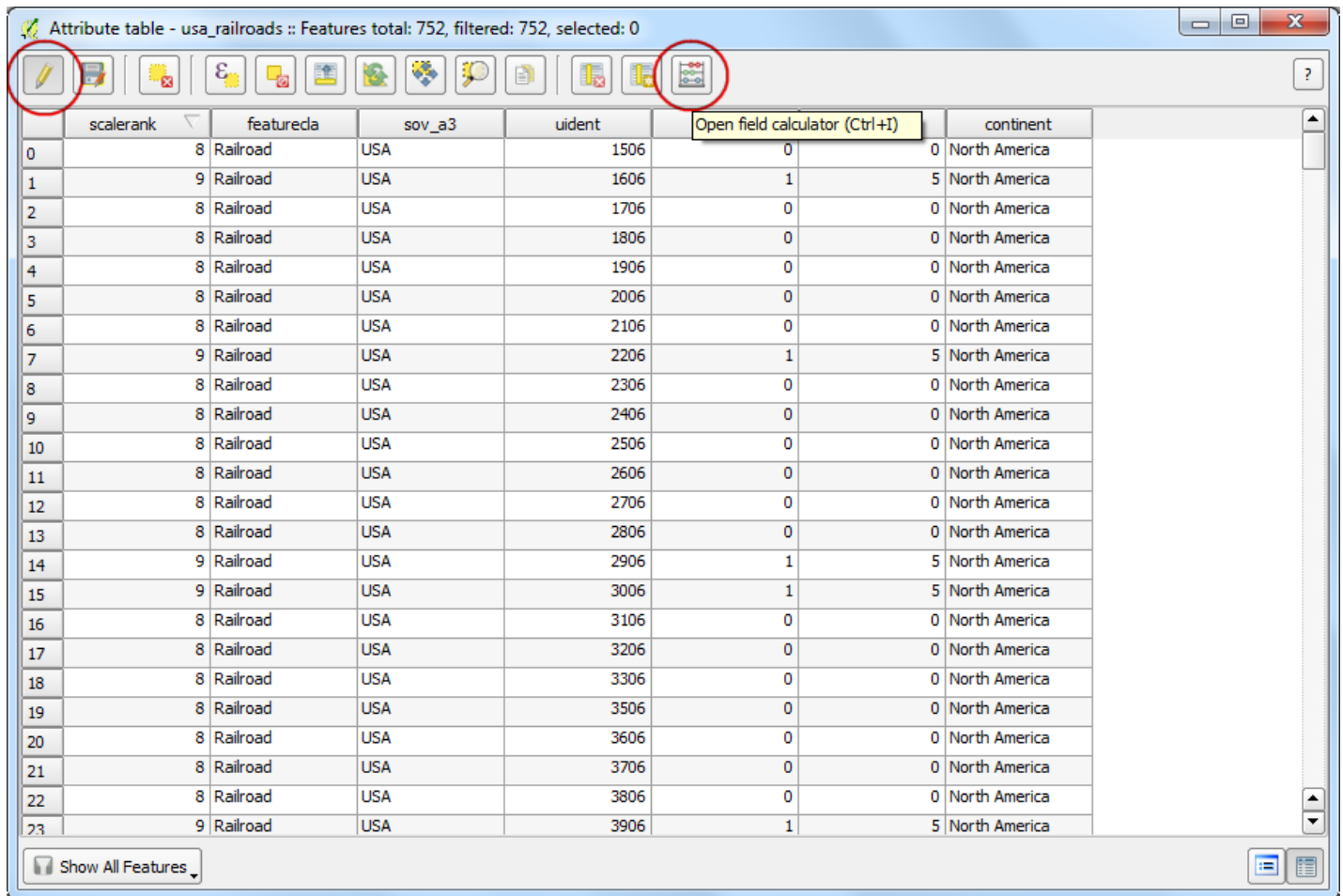
```
usa_railroads` QGIS. `ne_10m_railroads_north_america
```



14. ``usa_railroads`` ■■■■ ■■■ ■■■ ■■■■ ■■ ■■■ ■■ :guilabel: `Open Attribute Table` ■
■■■■■.



15. `self.toggle_editing_button = QPushButton('Toggle editing')`
`self.open_field_calculator_button = QPushButton('Open field calculator')`



16. `Field Calculator` `guiabel: 'Create a new field'` `guiabel: 'Output field name'` `**length_km**` `guiabel: 'Output field type'` `**Decimal number (real)**` `guiabel: 'Precision'` `**2**` `guiabel: 'Function list'`, `guiabel: 'Geometry'` `guiabel: '$length'` `guiabel: 'Expression'` `CRS meters` `**km**` `$length / 1000` `OK` `OK`



17. ■■■■■ Attribute Table ■■■■■ ■■■■■ ■■■■■ ■■■■■ :guilabel:'length_km' ■■■■■ ■■■■■. ■■■■■ ■■■■■ :guilabel:'Toggle editing' ■■■■■ ■■■■■ ■■■■■ ■■■■■ ■■■■■.



19. `QGIS::VectorLayer::BasicStatisticsDialog` :guilabel: "Input Vector layer" `self.parent().layer()` :guilabel: "Target field" `self.parent().field()` :guilabel: "OK" `self.parent().ok()` :guilabel: "Sum" `self.parent().sum()`

Note

The `BasicStatisticsDialog` class is a subclass of `QDialog`. It is used to display the Basic Statistics dialog box. The `BasicStatisticsDialog` class has a `BasicStatisticsDialog` constructor that takes a `QVectorLayer` object as an argument. The `BasicStatisticsDialog` class has a `BasicStatisticsDialog` method that returns the `BasicStatisticsDialog` object.

Basics statistics

Input Vector Layer
usa_railroads

☐ Use only selected features

Target field
length_km

Statistics output

Parameter	Value
Mean	127.751569149
StdDev	125.80562595
Sum	96069.18
Min	0.01
Max	936.6
N	752.0
CV	0.984767755...
Number of unique values	743

Press Ctrl+C to copy results to the clipboard

0% OK Close