

# Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



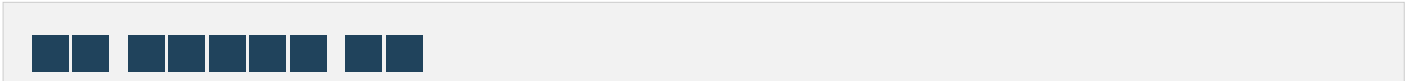
Author

Ujaval Gandhi

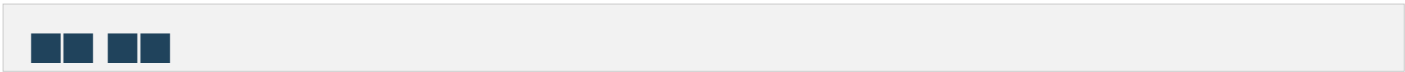
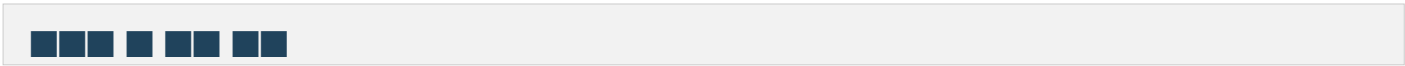
<http://google.com/+UjavalGandhi>

Translations by

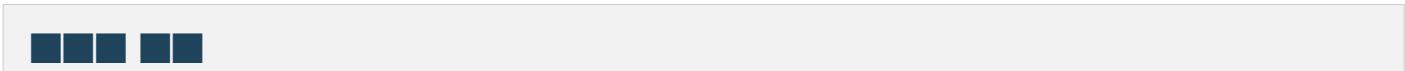
SongHyun Choi



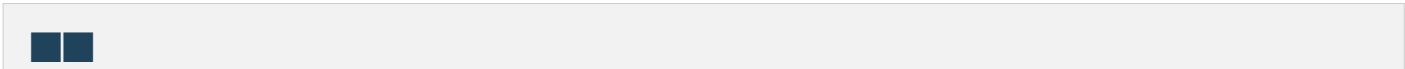
QGIS 3.0, 3.2, 3.6 e 3.8 oferecem ferramentas para trabalhar com dados espaciais. A ferramenta de cálculo de campo (\*\*Field Calculator\*\*) é uma das mais utilizadas.

[illegible]

- **■■■■ ■■■■ ■■■■ ■■**
- **■■■■■■■ ■■■■ ■■■■(Projected Coordinate Reference System, CRS)■ ■■■■ ■ ■■.**
- **■■■■■■■ ■■■■ ■■ ■■**



```
`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` ■■■■.



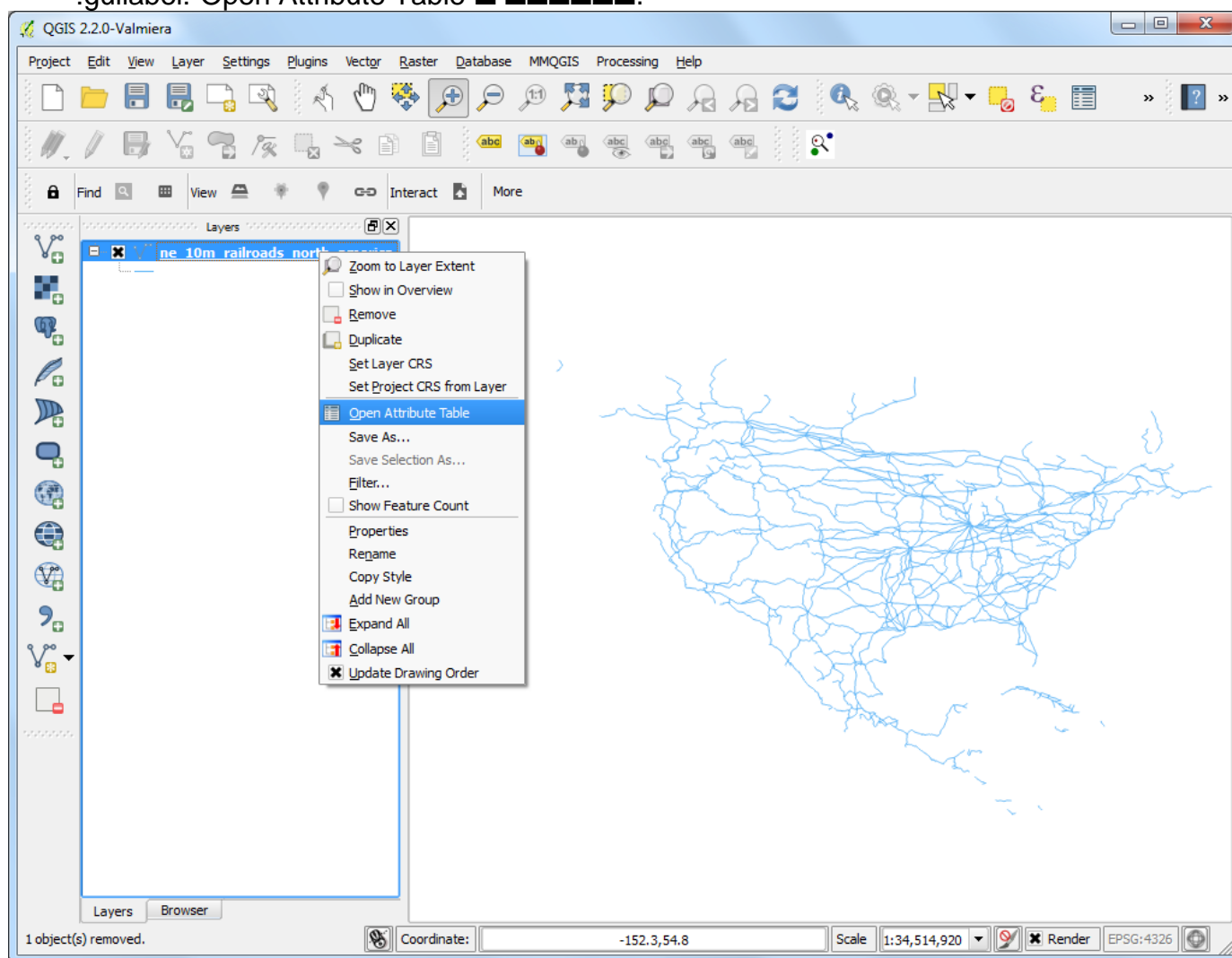
2. ``ne\_10m\_railroads\_north\_america.zip`` :guilabel: `OK` .



3. In the *Select layers to add...* dialog, choose ne\_10m\_railroads\_north\_america.shp layer.



4. **Click on the 'Open Attribute Table' button in the layer context menu.**



5. **Click on the 'sov\_a3' button in the layer context menu.**


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■■■■ ■■■■ ■■■■ ■■■■ :guilabel:'Select features using an expression■■■■ ■■■■.

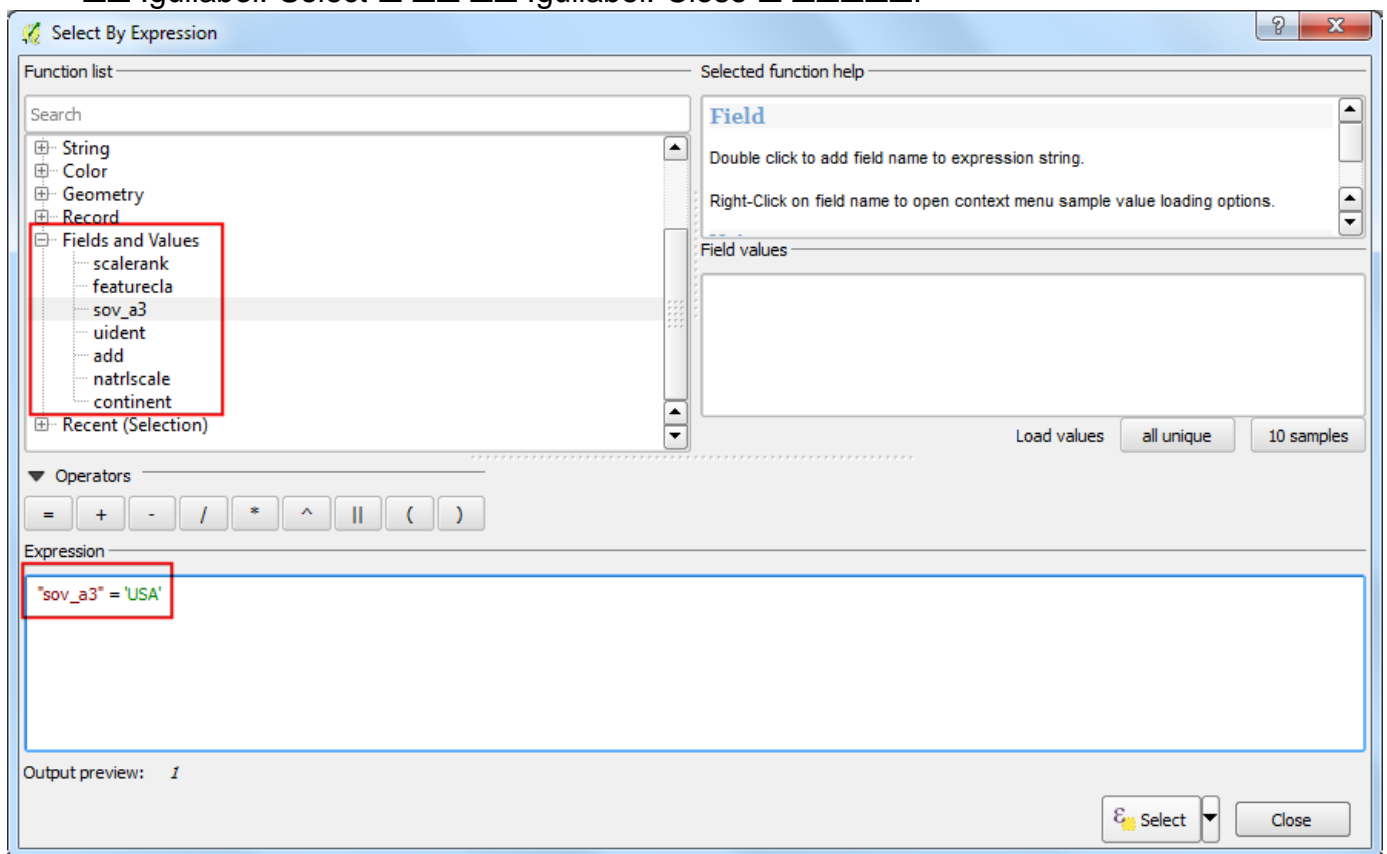
Attribute table - ne\_10m\_railroads\_north\_america :: Features total: 1127, filtered: 1127, selected: 0



	scalerank	Select features using an expression	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

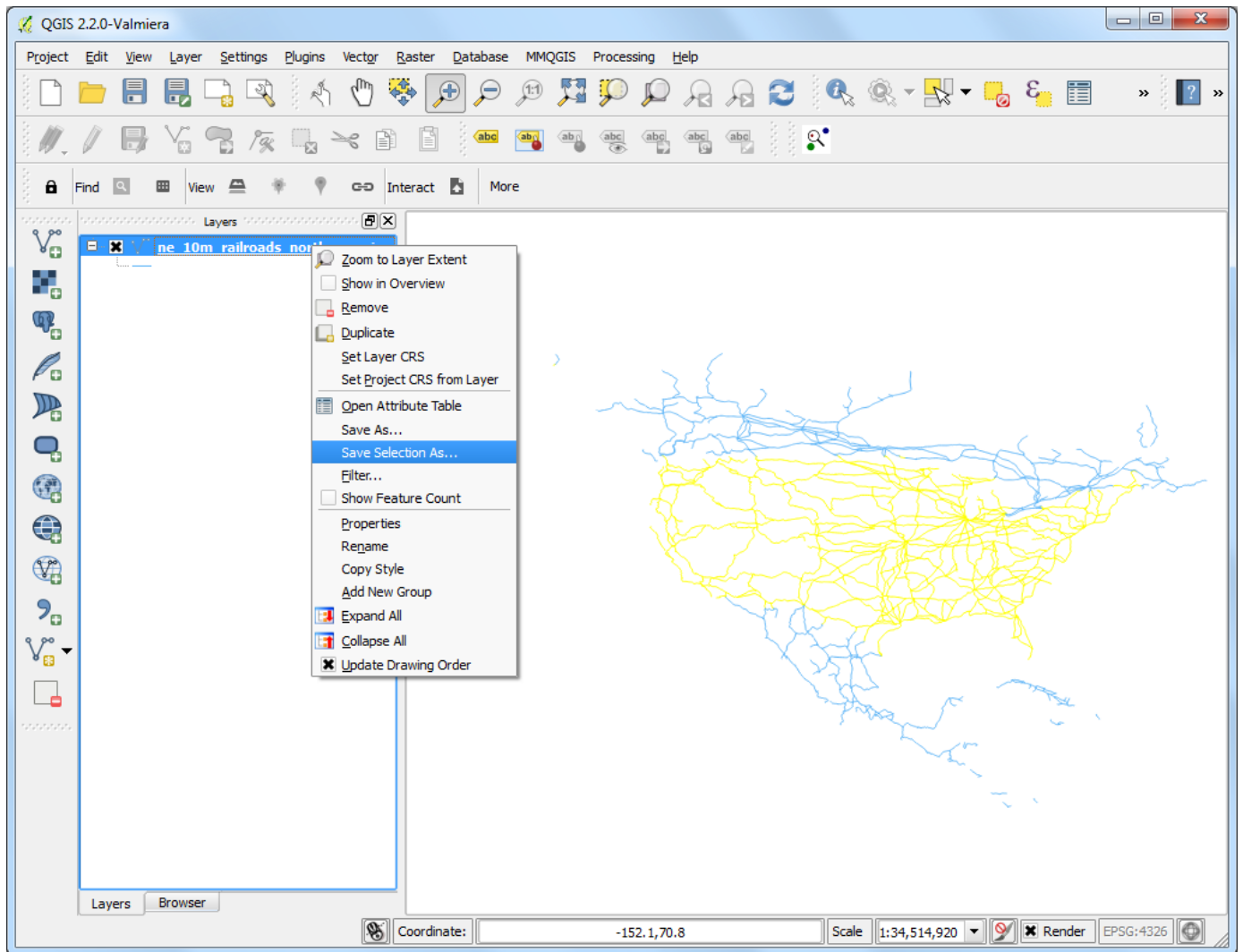
7. ■■■ Select By Expression ■■■■■■■■■■ ■■■■■■■■■■. ■■■■■ Functions list ■■■■■ ■■■■■ ■■■■■ Fields and Values ■■■■■ sov\_a3 ■■■■■ ■■■■■. ■■■■■ ■■■■■ ■■■■■ ■■■■■ :guilabel:`Expression` ■■■■■ ■■■■■ ■■■■■. "sov\_a3" = 'USA' ■■■■■ ■■■■■. ■■■■■ :guilabel:`Select` ■■■■■ ■■■■■ :guilabel:`Close` ■■■■■■■■■■.



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`. ``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. ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■. ■■■ :guilabel:`Filter` ■■■ ■■■■ :guilabel:`north`  
america equ` ■■■■ ■■■■. ■■■■ ■■■■ CRS■  
:guilabel:`North_America_Equidistant_Conic` EPSG:102010` ■■■■ :guilabel:`OK` ■■■  
■■■■.
```





13. ■■■ ■■■■ ■■■■ ■■■■ ■■■■  
 usa\_railroads` `■■■■ QGIS ■■■■. ■■■■ ``ne\_10m\_railroads\_north\_america  
 ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■ ■■■■



14. ``usa\_railroads`` ■■■■ ■■■■ ■■■■ ■■■■ ■■ ■■■■ ■■ :guilabel: Open Attribute Table`■  
■■■■■.



15. `Toggle editing` `Open field calculator`

Attribute table - usa\_railroads :: Features total: 752, filtered: 752, selected: 0



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

Show All Features

16. **Field Calculator** **Create a new field**. **Output field name** **length\_km**. **Output field type** **Decimal number (real)**. **Precision** **2**. **Function list**, **Geometry** **length**. **Expression** **length / 1000**. **CRS** **meters** **km** **length / 1000**. **OK**.



17. ■■■■■ Attribute Table ■■■■■ ■■■■ ■■■ :guilabel:`length\_km` ■■■■ ■■■■.  
 ■■■■■ ■■■■■ :guilabel:`Toggle editing` ■■■■ ■■■■ ■■■■ ■■■■ ■■■■■.







19. `guiabel:'Input Vector layer'` `usa_railroads`. `guiabel:'Target field'` `length_km` `guiabel:'OK'`. `guiabel:'Sum'`

## Note

19. `guiabel:'Input Vector layer'` `usa_railroads`. `guiabel:'Target field'` `length_km` `guiabel:'OK'`. `guiabel:'Sum'`

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