

# Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



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Translations by

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QGIS□ □, □□, □□ □ □□□□□ □□ □□ □□ □□ □ □□ □□ □□ □□□. □ □□□□ □ □□ □□ □□□ □□ □□ □□ □□□ **\*\*Field Calculator\*\***□ □□ □□□□ □□ □□□.

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- □□□□□ □□□ □□□(Projected Coordinate Reference System, CRS)□ □□□ □ □□.
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`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](http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_railroads_north_america.zip)>`\_□□□□□ □□□□ □□□□.

For convenience, you may directly download a copy of the dataset from the link below:

[ne\\_10m\\_railroads\\_north\\_america..zip](#)

□□□ □□ [NATURALEARTH]

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



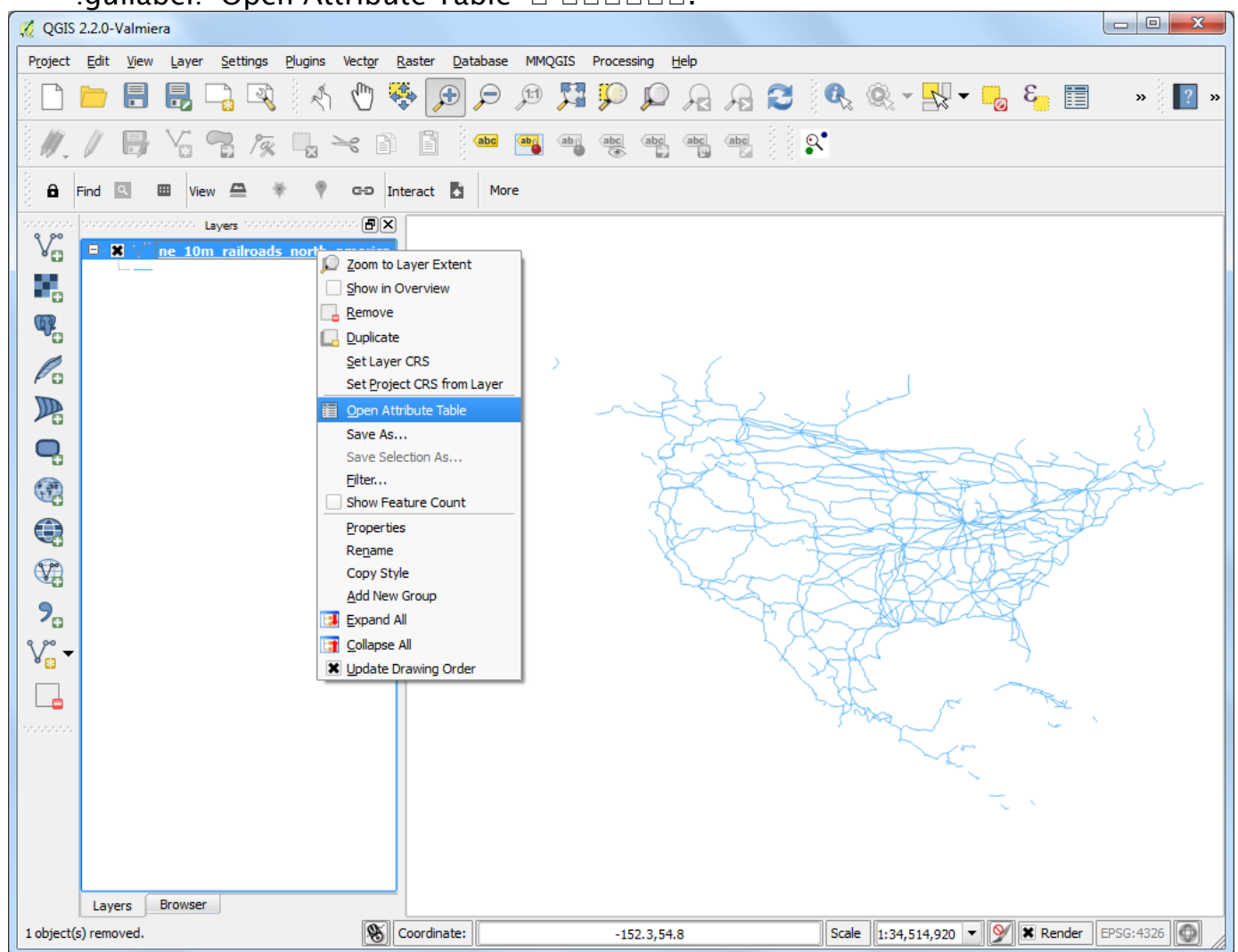
2. ``ne\_10m\_railroads\_north\_america.zip`` □□□ □□□ :guilabel: `OK` □ □□□□□.



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



4. 00 0000 0000 000000 00 00 0000 0000 00 00 0000 0000. 0 000000 0000 00 0000 0000 0000, 000000 00 0000 0000 0000. 000000 0000 0000 0000 0000 :guilabel: `Open Attribute Table` 0 0000000.



- [illegible]

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

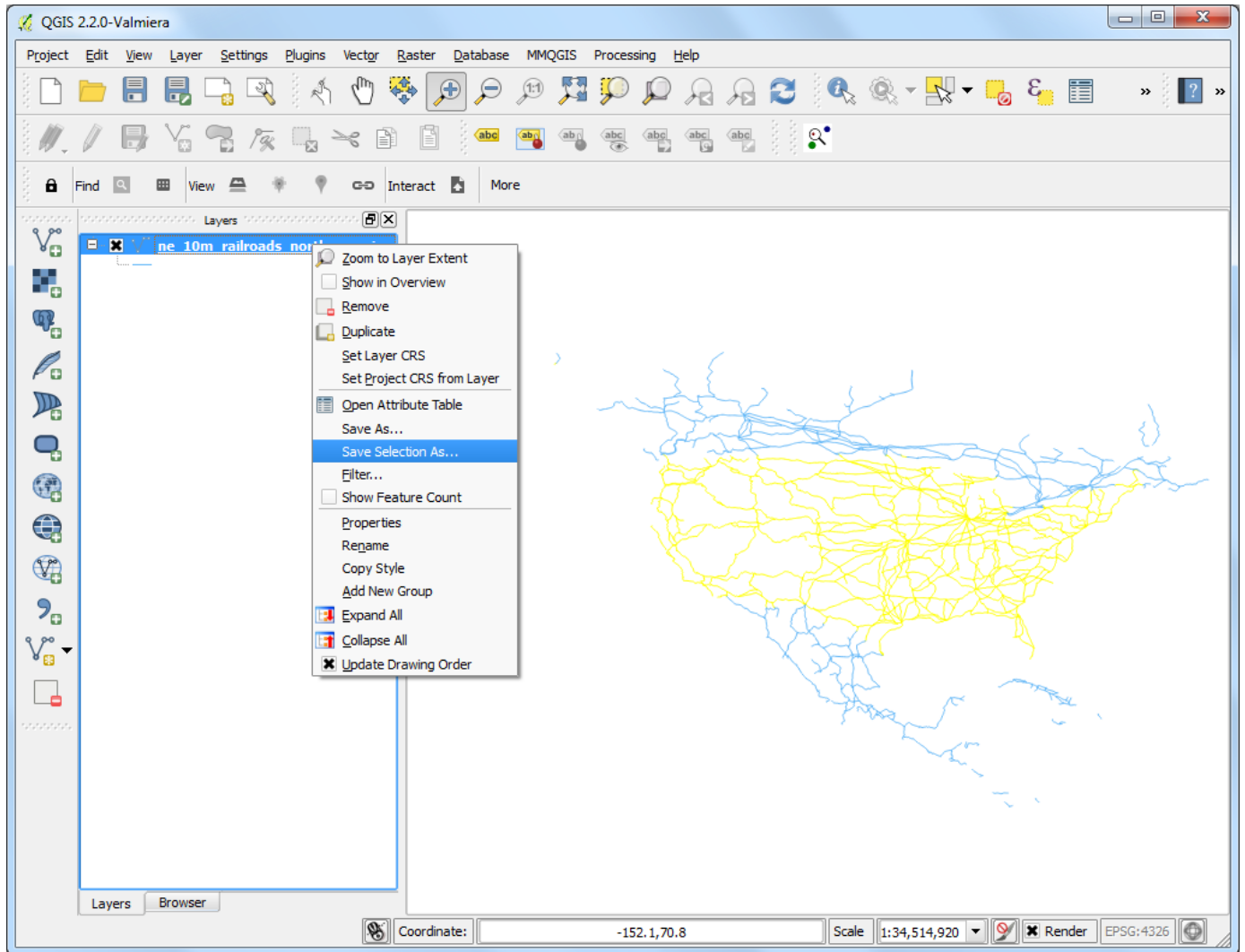
7. Select By Expression dialog box. Functions list Fields and Values sov\_a3, Expression: "sov\_a3" = 'USA', Select, Close.



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: `Browse``

## Note

CRS `EPSG:4326` `**degrees**`, `square degrees**` `**meters` `**feet**`





11. :guilabel: Filter`  
 :guilabel: north america equ`  
 :guilabel: North\_America\_Equidistant\_Conic EPSG:102010`  
 :guilabel: OK`



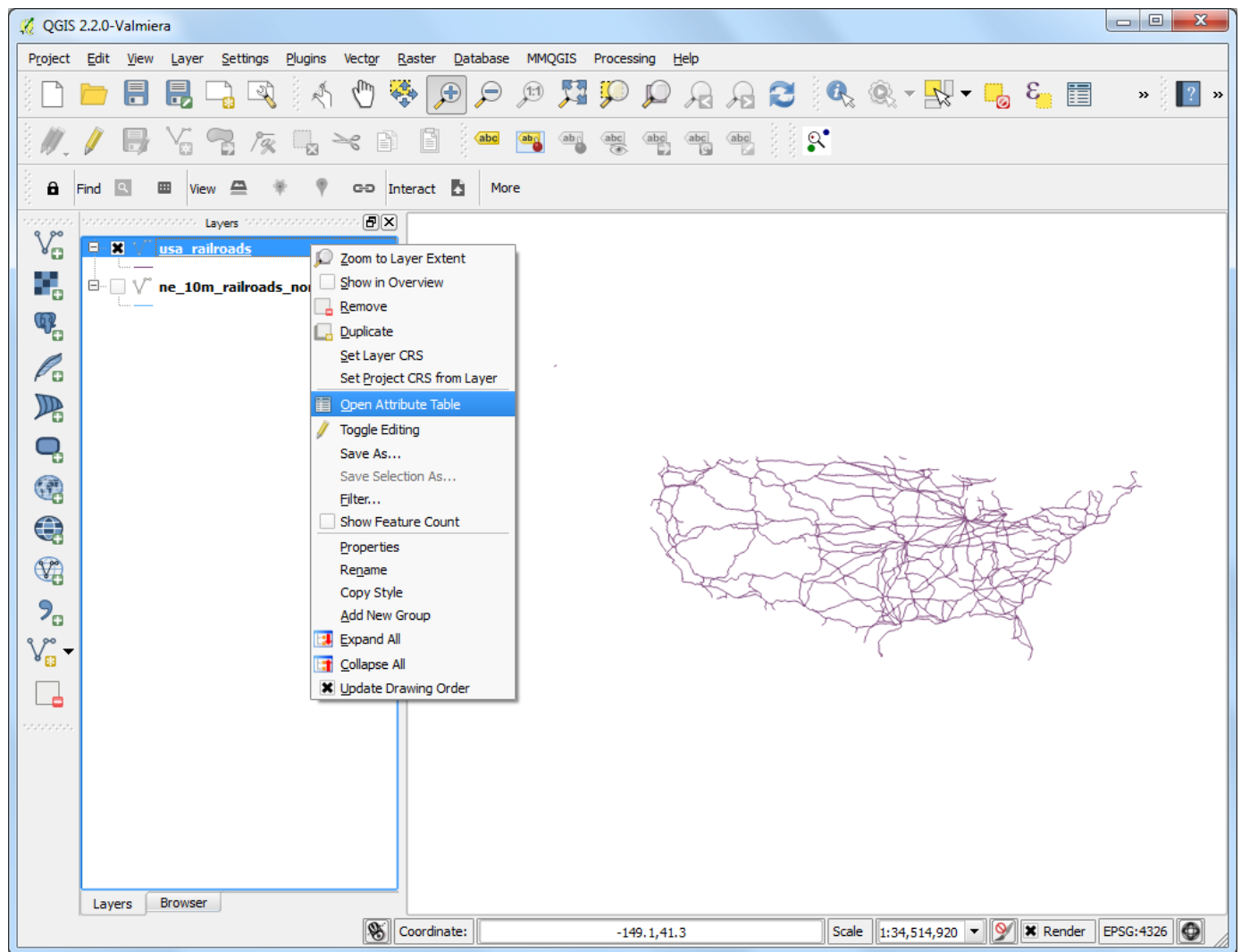
12. □ □□□ □□ □□ □□□ Save vector layer as... □□□□□□ □□ □□ □□ □□  
:guilabel: `Add saved file to map` □ □□□ :guilabel: `OK` □ □□□□.



13. □□ □□□□ □□□ □□□ □□□□ □□□  
 usa\_railroads`~□□□□ QGIS□ □□□□. □□□ `~ne\_10m\_railroads\_north\_america  
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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**` `OK`



17. 属性表 Attribute Table 中 新建 字段 :guilabel:`length\_km` 的 名称。  
 单击 :guilabel:`Toggle editing` 按钮 开始 编辑 数据。

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

	scalerank	featuredca	sov_a3	uident	add	natrscale	continent	length_km
0	8	Railroad	USA	1506	0	0	North America	637.07
1	9	Railroad	USA	1606	1	5	North America	16.27
2	8	Railroad	USA	1706	0	0	North America	96.22
3	8	Railroad	USA	1806	0	0	North America	20.15
4	8	Railroad	USA	1906	0	0	North America	0.01
5	8	Railroad	USA	2006	0	0	North America	79.95
6	8	Railroad	USA	2106	0	0	North America	67.00
7	9	Railroad	USA	2206	1	5	North America	196.45
8	8	Railroad	USA	2306	0	0	North America	60.61
9	8	Railroad	USA	2406	0	0	North America	20.03
10	8	Railroad	USA	2506	0	0	North America	147.21
11	8	Railroad	USA	2606	0	0	North America	68.33
12	8	Railroad	USA	2706	0	0	North America	1.62
13	8	Railroad	USA	2806	0	0	North America	4.34
14	9	Railroad	USA	2906	1	5	North America	60.92
15	9	Railroad	USA	3006	1	5	North America	157.26
16	8	Railroad	USA	3106	0	0	North America	131.39
17	8	Railroad	USA	3206	0	0	North America	58.84
18	8	Railroad	USA	3306	0	0	North America	432.74
19	8	Railroad	USA	3506	0	0	North America	29.55
20	8	Railroad	USA	3606	0	0	North America	94.90
21	8	Railroad	USA	3706	0	0	North America	577.78
22	8	Railroad	USA	3806	0	0	North America	223.04
23	9	Railroad	USA	3906	1	5	North America	143.94

Show All Features

18. `## Summary of the data frame. # # # # # Total # # # # #.`  
`## # --> # --> # :menuselection: `Vector --> Analysis Tools -->`  
`Basic Statistics` # # #.`





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