

Nearest Neighbor Analysis

QGIS Tutorials and Tips



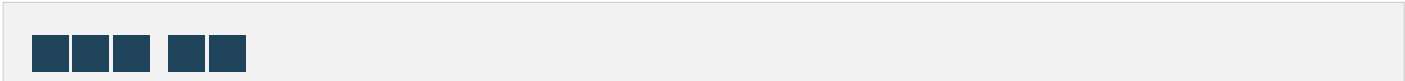
Author





Ujaval Gandhi

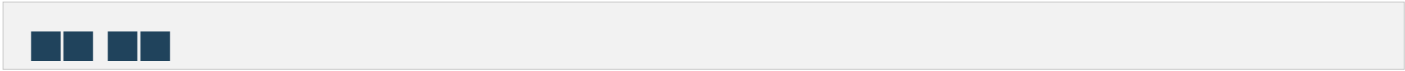
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



Translations by

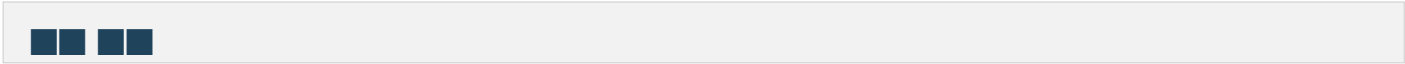
SongHyun Choi






















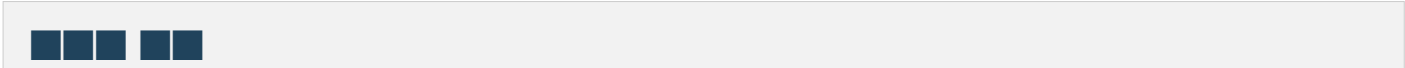








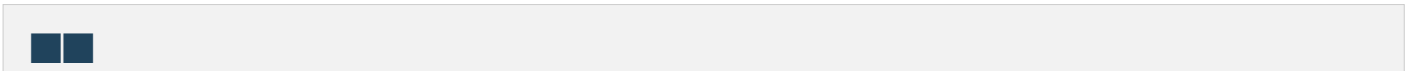







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 University of Twente
 Enschede, The Netherlands
 +31 (0)900 015 2700
www.utwente.nl



Create a Layer from a Delimited Text File

File Name:

Layer name: Encoding:

File format: ☐ CSV (comma separated values) ☒ Custom delimiters ☐ Regular expression delimiter

☐ Comma ☒ Tab ☐ Space ☐ Colon ☐ Semicolon

Other delimiters: Quote: Escape:

Record options: Number of header lines to discard: ☒ First record has field names

Field options: ☐ Trim fields ☐ Discard empty fields ☐ Decimal separator is comma

Geometry definition: ☒ Point coordinates ☐ Well known text (WKT) ☐ No geometry (attribute only table)

X field: Y field: ☐ DMS coordinates

Layer settings: ☒ Use spatial index ☐ Use subset index ☐ Watch file

	I_D	FLAG_TSUNAMI	YEAR	MONTH	DAY	HOUR	MINUTE	SECOND	FOCAL_DEPTH	EQ_MAG_MW	EQ_MAG
1	1		-2150								
2	2	Tsu	-2000								
3	3		-2000						18		7.1
4	8		-1566								
5	11		-1450								

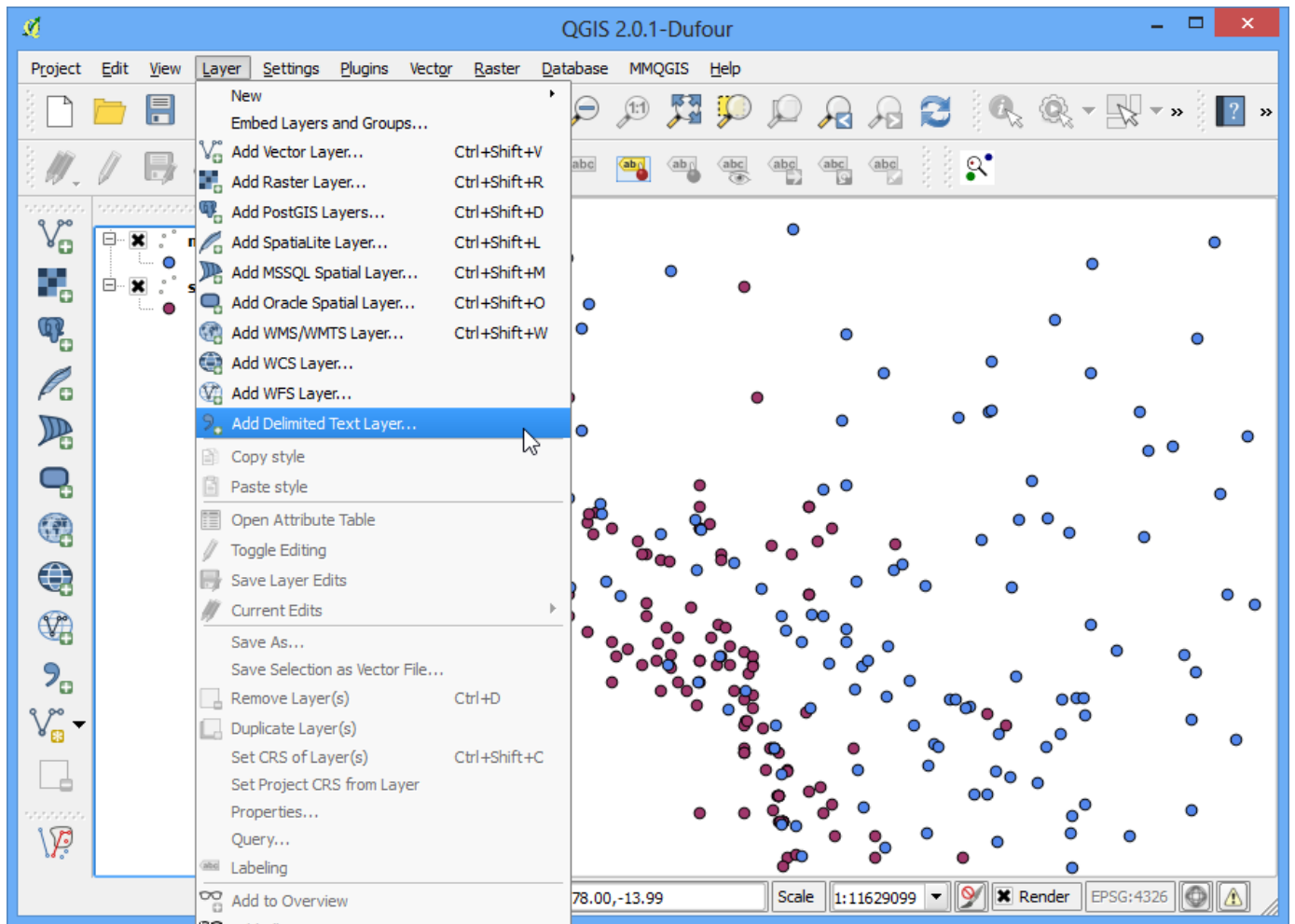
3. **Coordinate Reference System Selector**
 WGS 84 EPSG:436



4. **QGIS** **Layer** **Add Vector Layer** **WGS 84** --> **WGS 84** --> **WGS 84** :menuselection: Layer --> Add Vector Layer` **WGS 84**.



7. ■■■ ■■■ --> ■■■ ■■■ --> ■■■■■■■■■■ :menuselection: `Vector --> Analysis Tools --> Distance Matrix` ■■■■■.



10. `matrix.csv`. `:guiabel: Geometry definition` `:guiabel: No geometry (attribute only table)` `:guiabel: OK`.

Create a Layer from a Delimited Text File

File Name:

Layer name: Encoding:

File format: ☒ CSV (comma separated values) ☐ Custom delimiters ☐ Regular expression delimiter

Record options: Number of header lines to discard: ☒ First record has field names

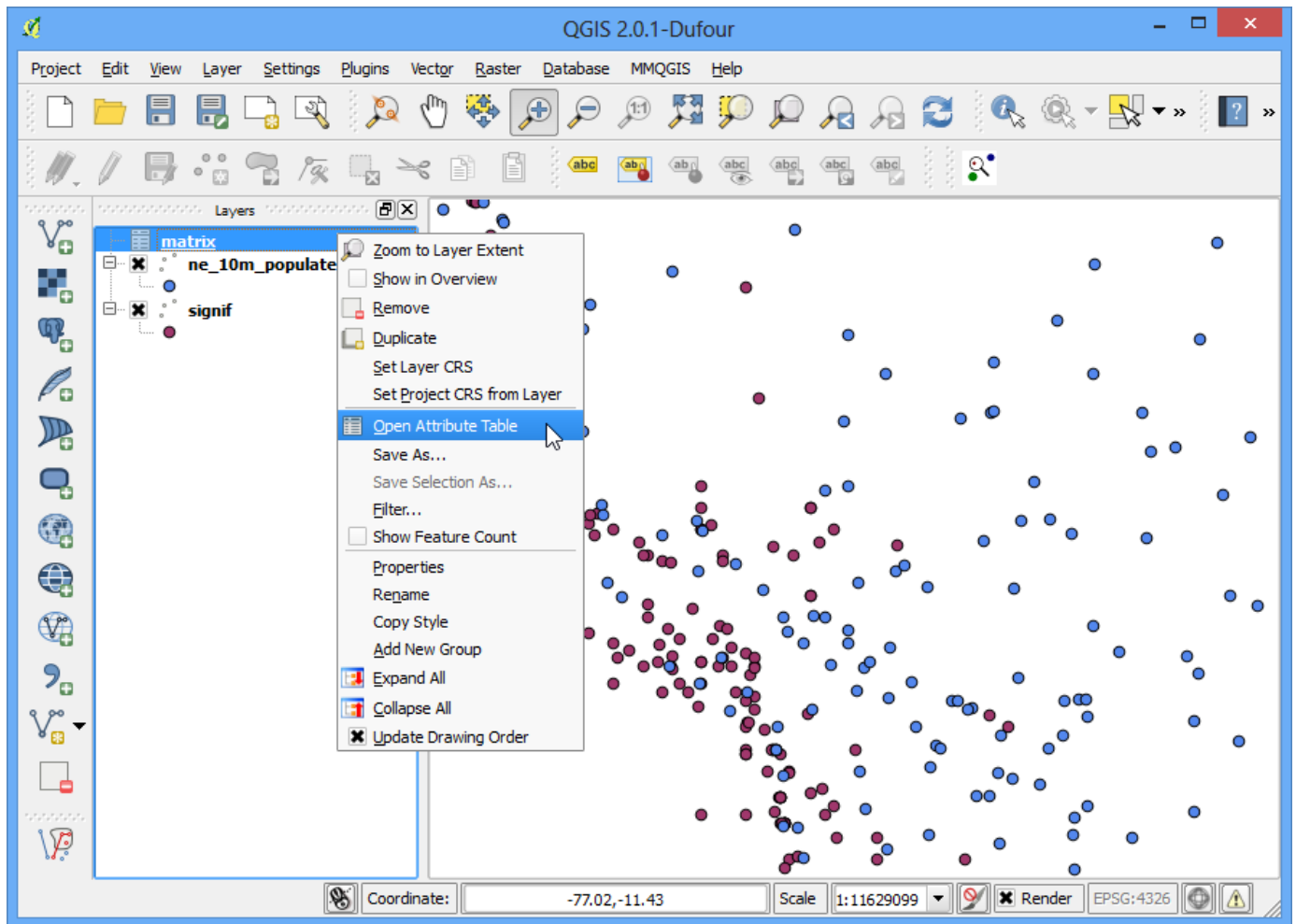
Field options: ☐ Trim fields ☐ Discard empty fields ☐ Decimal separator is comma

Geometry definition: ☐ Point coordinates ☐ Well known text (WKT) ☒ No geometry (attribute only table)

Layer settings: ☐ Use spatial index ☐ Use subset index ☐ Watch file

	InputID	TargetID	Distance
1	1	Al Karak	0.221721171014
2	2	Al Ladhiqiyah	0.144408036939
3	3	Buzmeyin	0.0526324624814
4	8	Al Khalil	0.208418004566
5	11	Iraklio	0.408843567409
6	5877	Iraklio	1.1082549107

11. `guiabel: Open Attribute Table``



12. `distance = sqrt((InputID - TargetID) ** 2)`. `Distance` is a `guilabel`.

Note

`distance` is a `float` value. `InputID` and `TargetID` are `int` values. `Distance` is a `guilabel`.

Attribute table - matrix :: Features total: 5727, filtered: 5727, selected: 0

	InputID	TargetID	Distance
0	1	Al Karak	0.221721171014
1	2	Al Ladhiqiyah	0.144408036939
2	3	Buzmeyin	0.0526324624814
3	8	Al Khalil	0.208418004566
4	11	Iraklio	0.408843567409
5	5877	Iraklio	1.1082549107
6	9712	Al Ladhiqiyah	0.144408036939
7	12	As Salt	0.230569794451
8	13	Al Aqabah	0.10661139997
9	14	Al Qunaytirah	0.34713470868
10	7793	Nabatiye et Tahta	0.256395311798
11	16	Sparti	0.101878534504
12	7794	Saida	0.00326167893321
13	9713	Piraiévs	0.206150410754
14	17	Volos	0.4810609473
15	18	Sparti	0.101878534504
16	5878	Lamia	0.265998307404
17	19	Varamin	0.239101501046
18	20	Patra	0.520403483984
19	21	Iraklio	0.350232618378
20	22	Kavala	1.1152439462
21	9652	Rajkot	0.717056768568

Show All Features

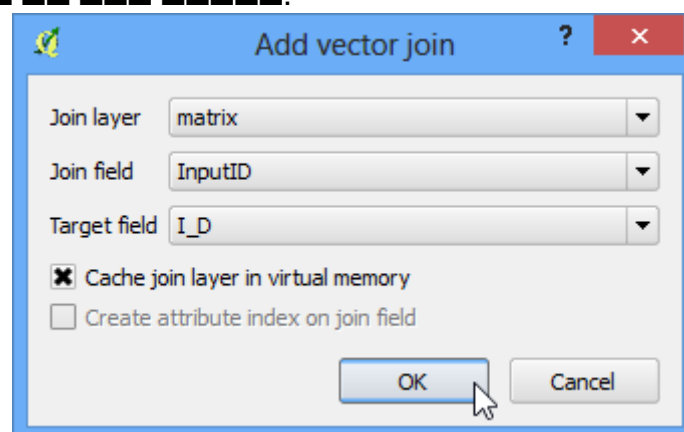
13. **Table Join** **Properties**



14. ■■■ Joins ■■■ ■■ + ■■■ ■■■■■■■■.



15. `matrix.csv` is a CSV file containing a matrix of data. The first column contains the names of the variables, and the subsequent columns contain the values for each variable. The data is organized as follows:



16. The 'Joins' tab in the 'Layer Properties' dialog box is used to add and manage joins between layers. The 'OK' button is used to apply the changes.



17. ■■■ ■■■■■■ ■■ ■■ ■■■■ ■■■■■■ ■■ ■■■■■■ ■■ ■■■■■■.

Attribute table - signif :: Features total: 5727, filtered: 5727, selected: 0								
	DAMAGE_DESCR	L_HOUSES_DESTR	SES_DESTROYED_I	L_HOUSES_DAM	SES_DAMAGED_D	matrix_TargetID	matrix_Distance	
0	NULL	NULL	NULL	NULL	NULL	Al Karak	0.221721171014	
1	NULL	NULL	NULL	NULL	NULL	Al Ladhiqiyah	0.144408036939	
2	1	NULL	1	NULL	NULL	Buzmeyin	0.0526324624814	
3	NULL	NULL	NULL	NULL	NULL	Al Khalil	0.208418004566	
4	NULL	NULL	NULL	NULL	NULL	Iraklio	0.408843567409	
5	3	NULL	NULL	NULL	NULL	Iraklio	1.1082549107	
6	3	NULL	NULL	NULL	NULL	Al Ladhiqiyah	0.144408036939	
7	NULL	NULL	NULL	NULL	NULL	As Salt	0.230569794451	
8	NULL	NULL	NULL	NULL	NULL	Al Aqabah	0.10661139997	
9	NULL	NULL	NULL	NULL	NULL	Al Qunaytirah	0.34713470868	
10	NULL	NULL	NULL	NULL	NULL	Nabatiye et Tahta	0.256395311798	
11	NULL	NULL	NULL	NULL	NULL	Sparti	0.101878534504	
12	NULL	NULL	NULL	NULL	NULL	Saida	0.00326167893321	
13	NULL	NULL	NULL	NULL	NULL	Piraiévs	0.206150410754	
14	NULL	NULL	NULL	NULL	NULL	Volos	0.4810609473	
15	1	NULL	1	NULL	NULL	Sparti	0.101878534504	
16	3	NULL	3	NULL	NULL	Lamia	0.265998307404	
17	3	NULL	NULL	NULL	NULL	Varamin	0.239101501046	
18	3	NULL	3	NULL	NULL	Patra	0.520403483984	
19	1	NULL	NULL	NULL	NULL	Iraklio	0.350232618378	
20	NULL	NULL	NULL	NULL	NULL	Kavala	1.1152439462	
21	NULL	NULL	NULL	NULL	NULL	Raikot	0.717056768568	