

Points in Polygon Analysis

QGIS Tutorials and Tips



Author

Ujaval Gandhi

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

Translations by

SongHyun Choi

[illegible]

GIS 中 的 点 在 多 边 形 内 部 的 判 断 是 一 个 常 见 的 问 题 。 本 文 将 介 绍 一 种 简 便 的 判 断 方 法 ， 即 使 用 **Points-in-Polygon** 算 法 。 该 算 法 可 以 通 过 计 算 点 的 绕 行 数 来 判 断 点 是 否 在 多 边 形 内 部 。 这 种 方 法 在 GIS 中 有 着 广 泛 的 应 用 ， 例 如 在 地 图 上 标 记 点 的 位 置 时 ， 可 以 通 过 该 算 法 判 断 点 是 否 在 某 个 地 区 内 部 。

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□□ □□□ □□□ □□□□ □□□□ NOAA's National Geophysical Data Center □ `Significant
Earthquake Database
<<http://www.ngdc.noaa.gov/nndc/struts/form?t=101650&s=1&d=1>> `□ □□□□□.
`tab-delimited earthquake data <[http://www.ngdc.noaa.gov/nndc/struts/results?type=0=Exact&query_0=\\$ID&t=101650&s=13&d=189&dfn=signif.txt](http://www.ngdc.noaa.gov/nndc/struts/results?type=0=Exact&query_0=$ID&t=101650&s=13&d=189&dfn=signif.txt)> `□ □□□□ □□□.

Natural Earth Admin 0 – Countries 10m. countries <http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip> _ 10m.

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

signif.txt

ne_10m_admin_0_countries.zip

□□ □□: [NGDC] [NATURALEARTH]

1. `## Text Layer --> ## Add Delimited Text Layer`
signif.txt``



2. Open the 'Add Delimited Text Layer' dialog box. In the 'File format' dropdown, select 'Tab'. In the 'X field' dropdown, select the field containing the X coordinates. In the 'Y field' dropdown, select the field containing the Y coordinates. Click the 'OK' button to add the layer.

Note

QGIS can also open CSV files. However, CSV files are not always in the same format. Some CSV files use semicolons as delimiters, while others use commas. QGIS will automatically detect the delimiter used in the file.



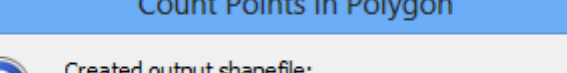
4. The earthquake point layer would now be loaded and displayed in QGIS. Let's also open the Countries layer. Go to Layer > Add Vector Layer. Browse to the downloaded *ne_10m_admin_0_countries.zip* file and click Open. Select the *ne_10m_admin_0_countries.shp* as the layer in the Select layers to add... dialog.



The screenshot shows the QGIS 2.0.1-Dufour interface. The 'Vector' menu is open, and the 'Analysis Tools' submenu is visible. The 'Points in polygon' option is highlighted. The map canvas displays a world map with yellow landmasses and numerous green points. The Layers panel on the left shows two layers: 'ne_10m_admin_0_count...' and 'signif'. The status bar at the bottom indicates the coordinate system as EPSG:4326.

Note

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9. 〇〇 〇〇〇〇〇 〃 〃 PNTCNT 〃 〃 〇〇 〇〇〇 〇〇〇〇 〇〇〇〇 〇〇〇. 〇〇〇 〇 〇〇〇〇〇 〇〇〇
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Attribute table - earthquakes_per_country :: Features total: 255, filtered: 255, selected: 0

	REGION_WB	NAME_LEN	LONG_LEN	ABBREV_LEN	TINY	HOMEPART	PNTCNT
0	Latin America ...	5.00	5.00	5.00	4.00	-99.00	0.000000000000...
1	South Asia	11.00	11.00	4.00	-99.00	1.00	57.000000000000...
2	Sub-Saharan Af...	6.00	6.00	4.00	-99.00	1.00	0.000000000000...
3	Latin America ...	8.00	8.00	4.00	-99.00	-99.00	0.000000000000...
4	Europe & Centr...	7.00	7.00	4.00	-99.00	1.00	44.000000000000...
5	Europe & Centr...	5.00	13.00	5.00	5.00	-99.00	0.000000000000...
6	Europe & Centr...	7.00	7.00	4.00	5.00	1.00	0.000000000000...
7	Middle East & ...	20.00	20.00	6.00	-99.00	1.00	0.000000000000...
8	Latin America ...	9.00	9.00	4.00	-99.00	1.00	20.000000000000...
9	Europe & Centr...	7.00	7.00	4.00	-99.00	1.00	14.000000000000...
10	East Asia & Pac...	14.00	14.00	9.00	3.00	-99.00	0.000000000000...
11	Antarctica	10.00	10.00	4.00	-99.00	1.00	0.000000000000...
12	East Asia & Pac...	23.00	27.00	7.00	-99.00	-99.00	0.000000000000...
13	Sub-Saharan Af...	22.00	35.00	10.00	2.00	-99.00	0.000000000000...
14	Latin America ...	17.00	19.00	6.00	4.00	1.00	0.000000000000...
15	East Asia & Pac...	9.00	9.00	4.00	-99.00	1.00	9.000000000000...
16	Europe & Centr...	7.00	7.00	5.00	-99.00	1.00	4.000000000000...
17	Europe & Centr...	10.00	10.00	4.00	-99.00	1.00	15.000000000000...
18	Sub-Saharan Af...	7.00	7.00	4.00	-99.00	1.00	1.000000000000...
19	Europe & Centr...	7.00	7.00	5.00	-99.00	1.00	2.000000000000...
20	Sub-Saharan Af...	5.00	5.00	5.00	-99.00	1.00	1.000000000000...
21	Sub-Saharan Af...	12.00	12.00	4.00	-99.00	1.00	0.000000000000...

Show All Features

10. 00 00 00 ``PNTCNT`` 000 0000 00 00 00 000 00 0000. 0000000 0000 00
 ``PNTCNT`` 00 20 000000. 000 0000 000 000 00 00000 00 0000 00000.



Figure 1. Map of China showing the location of the earthquake epicenters. The map is a vector map showing the administrative boundaries of China. The earthquake epicenters are represented by green dots. The map is titled 'Map of China showing the location of the earthquake epicenters'.