

# 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 中 判 断 某 个 地 点 是 否 在 某 个 区 域 内 。

□ □ □ □

□□□□ □□□□ □□ □□ □□□□□□ □□□□□ □□□□□, □□ □□□ □□ □□ □□□ □□□ □□□□□ □□□□□ □□□□□.

□□ □□□ □□□ □□□□□ 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](http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip)> \_ 10m.

□□ □□: [NGDC] [NATURALEARTH]

1. □□ □□ --> □□□□ □□ □□ □□ □□ :menuselection: `Layer --> Add Delimited Text Layer` □ □□ □□□□ `signif.txt` □□□ □□□□.



2. Open the 'Add Delimited Text Layer' dialog. 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 'OK'.

### Note

QGIS can also load delimited text files from a database. To do this, click on the 'Add Database Layer' button in the 'Layer' menu. This will open the 'Add Database Layer' dialog, where you can select the database and the table you want to load.





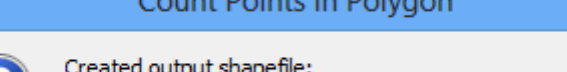
4. □□ □□ □□□ QGIS □ □□□□. □□ □□ □□□ □□□□. □□ □□ □□ --> □□ □□ □□  
 Layer ▸ Add Vector Layer □ □□□□. □□□□□  
 ne\_10m\_admin\_0\_countries.zip □□□ □□ □□ :guilabel: `Open` □ □□□□. □□□  
 □□□ □□ :guilabel: `Select layers to add...` □□□□□ □□□□□  
 ne\_10m\_admin\_0\_countries.shp □ □□□□.



The screenshot shows the QGIS 2.0.1-Dufour interface. The 'Vector' menu is open, and the 'Analysis Tools' submenu is selected, with 'Points in polygon' highlighted. The map canvas displays a world map with yellow landmasses and cyan 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 is EPSG:4326.

**Note**

OK□ □□ □ □□□□□. QGIS□ □□□ □□□□□□ □□ 10□□ □□□ □ □□□□.



Count Points in Polygon

Created output shapefile:  
C:/Users/ujaval/Downloads/earthquakes\_per\_country.shp

Would you like to add the new layer to the TOC?

Yes No



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  
 〇〇〇〇〇〇〇 〇〇 〇〇〇 〇〇〇 〇〇〇〇.

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.







2000 年 1 月 1 日 至 2000 年 12 月 31 日 的 地震 数据。 数据 来源 为 美国 地质 调查 局 (USGS) 的 全球 地震 目录 (GEM)。