

Points in Polygon Analysis

QGIS Tutorials and Tips



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Translations by

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[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 单 易 学 的 判 断 方 法 。 该 方 法 基 于 射 线 法 (Ray Casting Algorithm) 的 原 理 ， 通 过 计 算 射 线 穿 越 多 边 形 的 次 数 来 判 断 点 的 位 置 。 该 方 法 的 代 码 如 下 ：

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



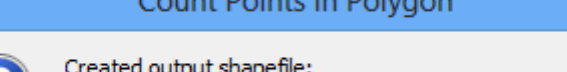
4. The earthquake point layer would now be loaded and displayed in QGIS. Let's also open the Countries layer. Go to Layer > Add Vector Layer. Browse to the downloaded *ne_10m_admin_0_countries.zip* file and click Open. Select the *ne_10m_admin_0_countries.shp* as the layer in the Select layers to add...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



The screenshot shows the QGIS 2.0.1-Dufour interface. The 'Vector' menu is open, and the 'Analysis Tools' submenu is 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

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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



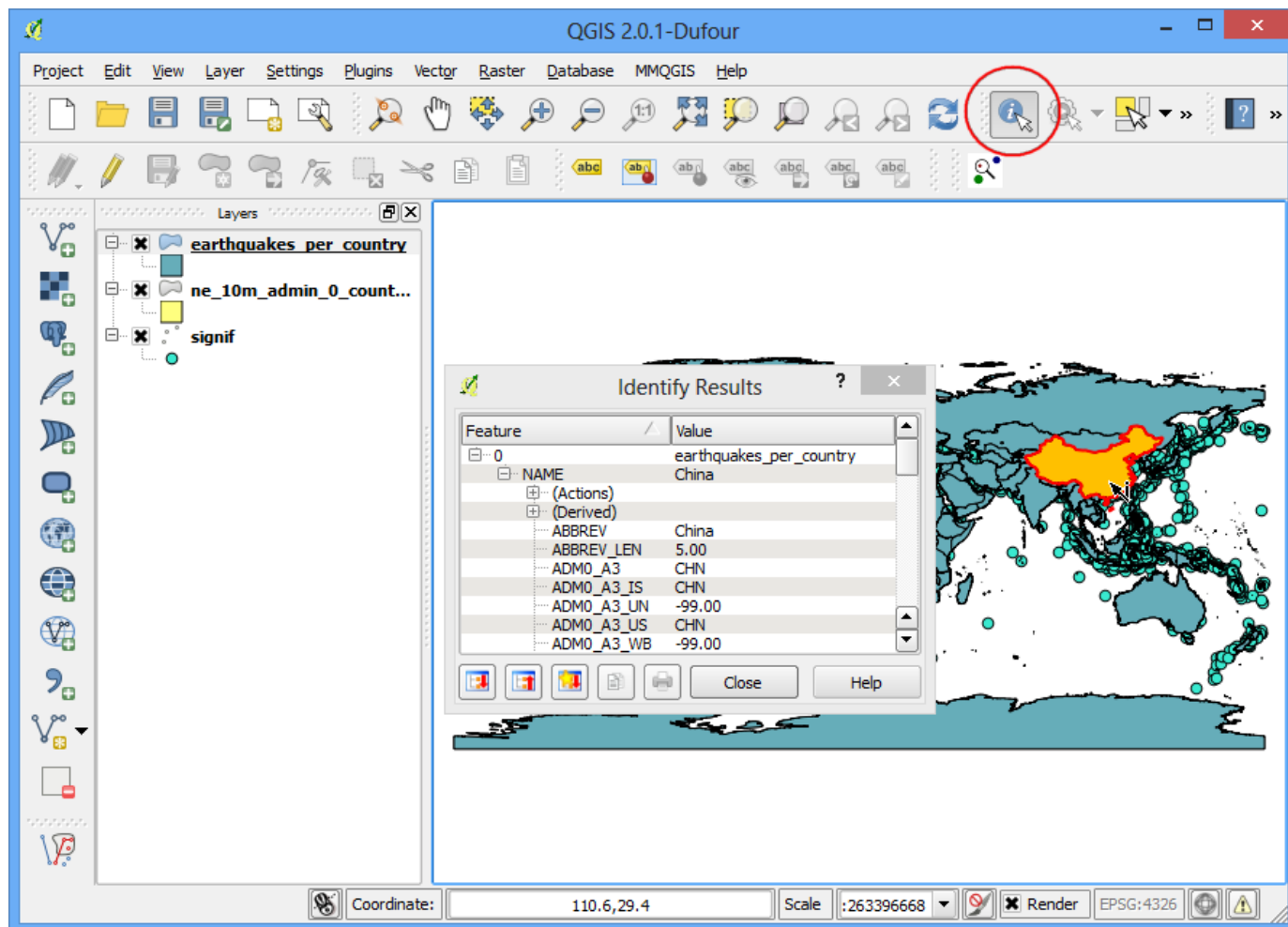
9. 〇〇 〇〇〇〇〇 〇〇 〇〇〇〇 〇〇〇 〇〇〇〇 〇〇〇〇 〇〇〇. 〇〇〇 〇 〇〇〇〇〇 〇〇〇
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Attribute table - earthquakes_per_country :: Features total: 255, filtered: 255, selected: 0

	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 0000 00 0000 0000.



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 (Global Earthquake Catalogue)。