# Points in Polygon Analysis

## QGIS Tutorials and Tips



## Author Ujaval Gandhi

http://google.com/+UjavalGandhi

Translations by Kari Salovaara

# Pisteitä monikulmiossa analyysi

GIS:n voima on usean tietolähteen samanaikainen analysointi. Usein vastaus etsimääsi kysymykseen llöytyy useanlta tasolta ja Sinun tulee tehdä joitakin analyyseja saadaksesi ja laskeaksesi tämän informaation. Eräs tämän tyyppinen analyysi on Pisteitä monikulmiossa. Kun Sinulla on monikulmiotaso ja pistetaso – ja haluat tietää montako tai mitkä pisteet ovat kunkin monikulmion sisällä, voit käyttää tätä analyysimenetelmää.

### Katsaus tehtävään

Kun otetaan kaikkien tunnettujen merkittävien maanjäristysten sijainnit, yritämme selvittää missä maassa on ollut eniten maanjäristyksiä.

### Hanki tiedot

Käytämme NOAA's National Geophysical Data Center's Significant Earthquake Database tasona joka esittää kaikkia suurimpia maanjäristyksiä. Lataa tab-eroteltu maanjäristysdata.

Natural Earth tarjoaa Admin 0 - Countries tietojoukon. Lataa maat

Tietojen lähde: [NGDC] [NATURALEARTH]

## Menettely

1. Avaa Layer • Add Delimited Text Layer ja selaile ladattuun <code>signif.txt</code> tiedostoon.



2. Since this is a tab-delimited file, choose Tab as the File format. The X field and Y field would be auto-populated. Click OK.

#### Note

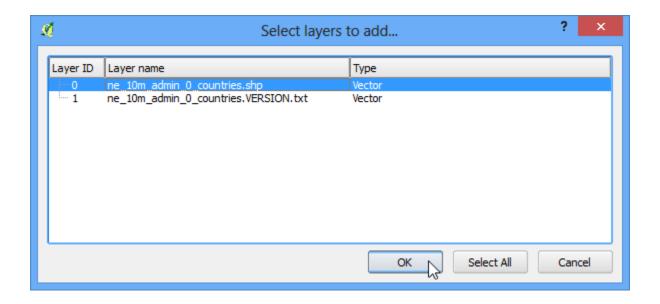
You may see some error messages as QGIS tries to import the file. These are valid errors and some rows from the file will not be imported. You can ignore the errors for the purpose of this tutorial.



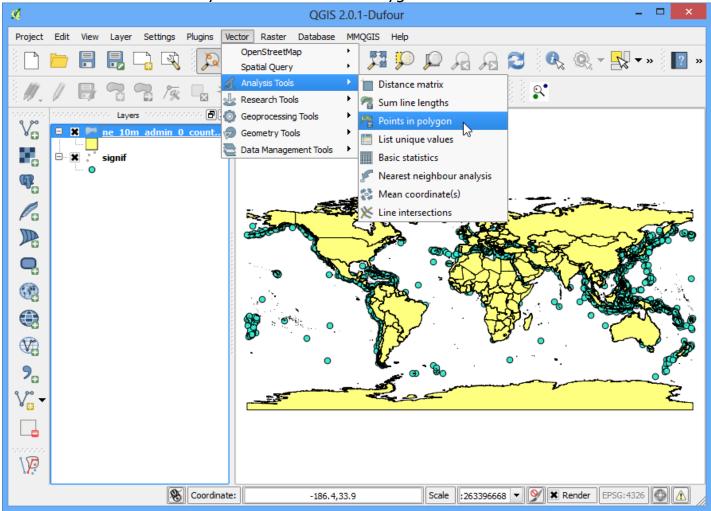
3. As the earthquake dataset has Latitude/Longitude coordinates, choose WGS 84 EPSG:436 as the CRS in the Coordinate Reference System Selector dialog.



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.



5. Click on Vector > Analysis Tools > Point in Polygon



6. In th pop-up window, select the polygon layer and point layer respectively. Name the output layer as <code>earthquake\_per\_coutry.shp</code> and Click OK.

#### Note

Be patient after clicking OK, QGIS may take upto 10 minutes to calculate the results.

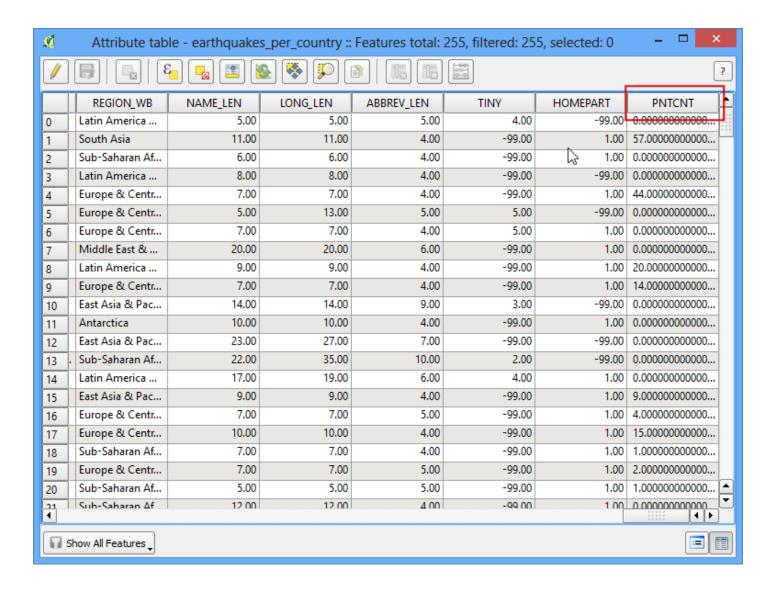
7. When asked whether you want to add the layer to TOC, click Yes.



8. You will see a new layer is added to the table of content. Open the attribute table by right-clicking on the layer and selecting Open Attribute Table.



9. In the attribute table, you will notice a new field named **PNTCNT**. This is the count of number of points from the earthquakes layer that fall within each polygon.



10. To get our answer, we can simply sort the table by **PNTCNT** field and the country with highest count will be our answer. Click 2-times on the **PNTCNT** columnto get it sorted in descending order. Click on the first row to select it and close the Attribute Table.



11. Back in the main QGIS window, you will see one feature highlighted in yellow. This is the feature linked to the selected row in the attribute table which had the highest number of points. Select the Identify tool and click on that polygon. You can see that the country with the highest number of Significant earthquakes is China.



We determined from the simple analysis of 2 datasets that China has had the highest number of major earthquakes. You may refine this analysis further by taking into consideration the population as well as the size of the country and determine which is the most adversely affected country by major earthquakes.