

# Importing Spreadsheets or CSV files

QGIS Tutorials and Tips



Author

Ujaval Gandhi

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

# Importing Spreadsheets or CSV files

Many times the GIS data comes in a table or an Excel spreadsheet. Also, if you have a list lat/long coordinates, you can easily import this data in your GIS project.

## Overview of the task

We will be importing a text file of earthquake data to QGIS.

## Get the data

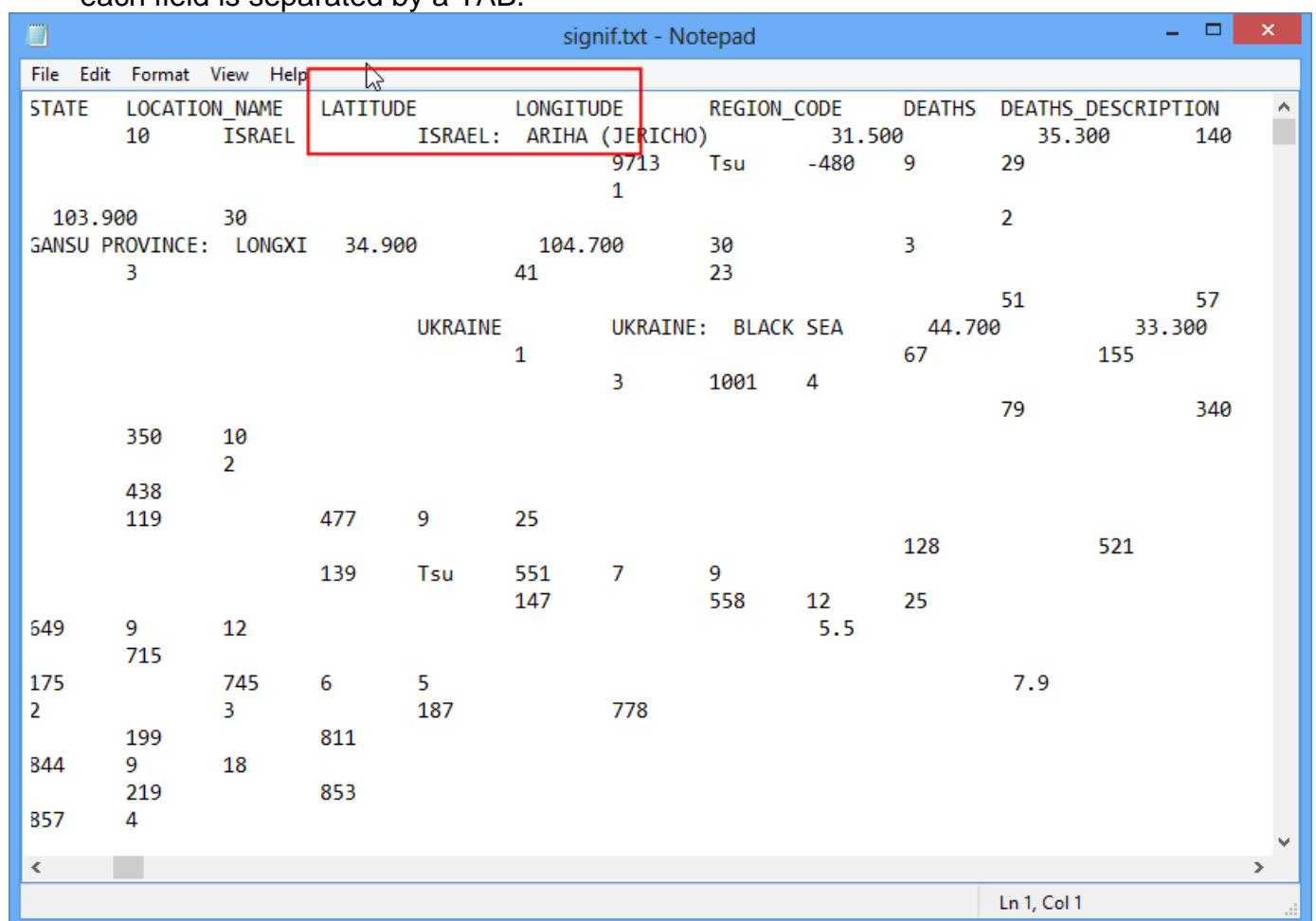
NOAA's National Geophysical Data Center produces a great dataset of all significant earthquakes since 2150 BC. [Learn more](#).

Download [Significant Earthquake Database](#) text file.

Data Source [NGDC]

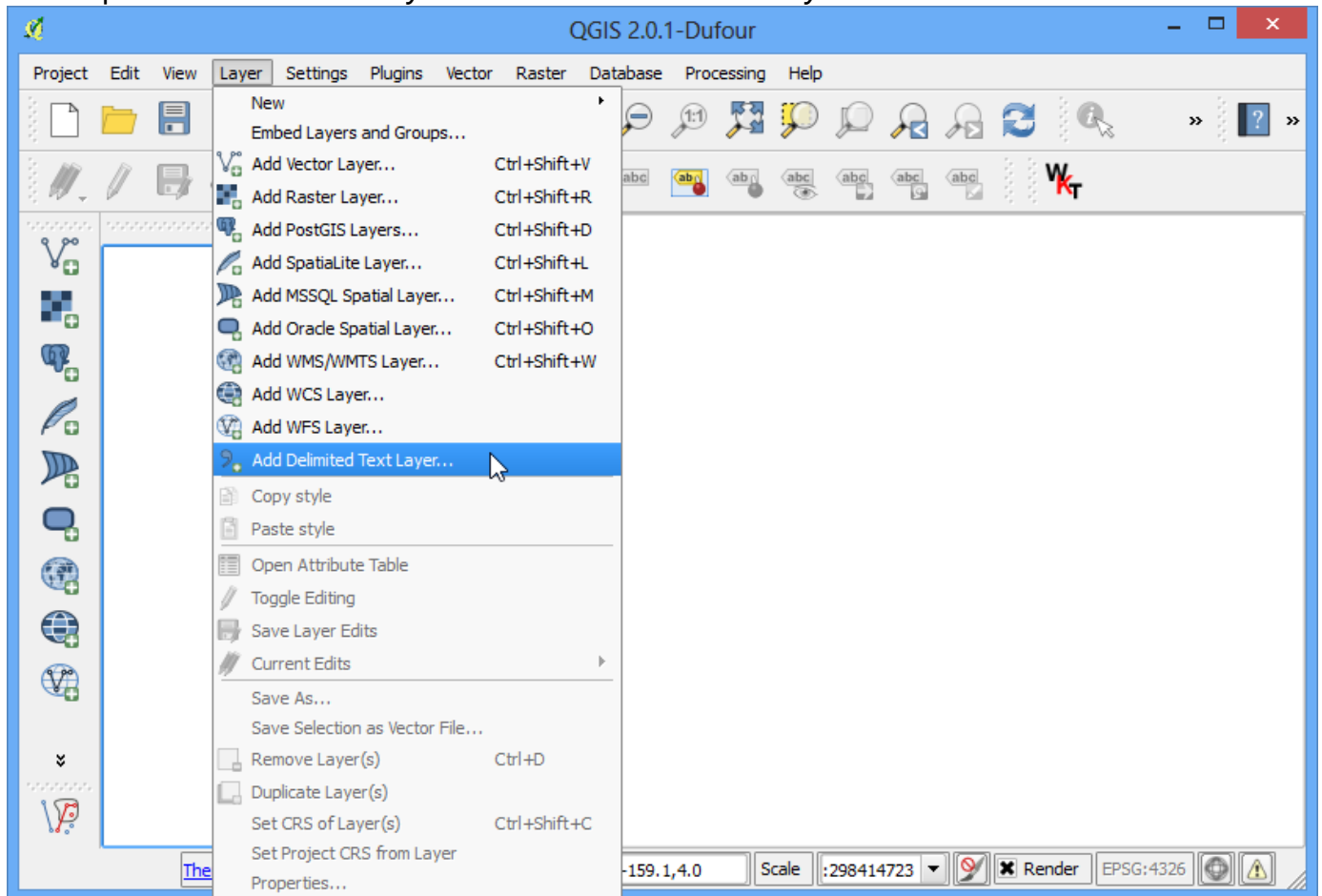
## Procedure

1. Examine your tabular data source. To import this data to QGIS, you will have to save it as a text file and need at least 2 columns which contain the X and Y coordinates. If you have a spreadsheet, use *Save As* function in your program to save it as a *Tab Delimited File* or a *Comma Separated Values (CSV)* file. Once you have the data exported this way, you can open it in a text editor such as Notepad to view the contents. In case of the Significant Earthquake Database, the data already comes as a text file which contains latitude and longitude of the earthquake centers along with other related attributes. You will see that each field is separated by a TAB.



| STATE           | LOCATION_NAME | LATITUDE                | LONGITUDE          | REGION_CODE | DEATHS | DEATHS_DESCRIPTION |
|-----------------|---------------|-------------------------|--------------------|-------------|--------|--------------------|
| 10              | ISRAEL        | ISRAEL: ARIHA (JERICHO) | 31.500             | 35.300      | 140    |                    |
|                 |               | 9713                    | Tsu                | -480        | 9      | 29                 |
|                 |               | 1                       |                    |             |        | 2                  |
| 103.900         | 30            |                         |                    |             |        |                    |
| GANSU PROVINCE: | LONGXI        | 34.900                  | 104.700            | 30          | 3      |                    |
| 3               |               |                         | 41                 | 23          |        |                    |
|                 |               | UKRAINE                 | UKRAINE: BLACK SEA |             | 51     | 57                 |
|                 |               | 1                       |                    |             | 44.700 | 33.300             |
|                 |               | 3                       | 1001               | 4           | 67     | 155                |
|                 |               |                         |                    |             | 79     | 340                |
| 350             | 10            |                         |                    |             |        |                    |
|                 | 2             |                         |                    |             |        |                    |
| 438             |               |                         |                    |             |        |                    |
| 119             |               | 477                     | 9                  | 25          |        |                    |
|                 |               | 139                     | Tsu                | 551         | 7      | 9                  |
|                 |               |                         |                    | 147         | 558    | 12                 |
| 549             | 9             | 12                      |                    |             | 5.5    | 25                 |
|                 | 715           |                         |                    |             |        |                    |
| 175             |               | 745                     | 6                  | 5           |        | 7.9                |
| 2               |               | 3                       | 187                | 778         |        |                    |
|                 | 199           |                         | 811                |             |        |                    |
| 344             | 9             | 18                      |                    |             |        |                    |
|                 | 219           |                         | 853                |             |        |                    |
| 357             | 4             |                         |                    |             |        |                    |

2. Open QGIS. Click on *Layers* ■ *Add Delimited Text Layer*.



3. In the *Create a Layer from a Delimited Text File* dialog, click on *Browse* and specify the path to the text file you downloaded. In the *File format* section, select *Custom delimiters* and check *Tab*. The *Geometry definition* section will be auto-populated if it finds a suitable X and Y coordinate fields. In our case they are *LONGITUDE* and *LATITUDE*. You may change it if the import selects the wrong fields. Click *OK*.

### Note

It is easy to confuse X and Y coordinates. Latitude specifies the north-south position of a point and hence it is a **Y** coordinate. Similarly Longitude specifies the east-west position of a point and it is a **X** coordinate.

**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 | 3   |              | -2000 |       |     |      |        |        | 18          |           | 7.1    |
| 3 | 2   | Tsu          | -2000 |       |     |      |        |        |             |           |        |
| 4 | 8   |              | -1566 |       |     |      |        |        |             |           |        |
| 5 | 11  |              | -1450 |       |     |      |        |        |             |           |        |

4. You may see some errors displayed in the next dialog. The errors in this file are mainly due to missing X or Y fields. You may examine these errors and fix the problems in your source file. For this tutorial, you may ignore these errors.

**Delimited text file errors**

Errors in file C:/Users/ujaval/Downloads/signif.txt  
 49 records discarded due to missing geometry definitions  
 6 records discarded due to invalid geometry definitions  
 The following lines were not loaded into QGIS due to errors:  
 Invalid X or Y fields at line 306  
 Invalid X or Y fields at line 2253  
 Invalid X or Y fields at line 3239  
 Invalid X or Y fields at line 3324  
 Invalid X or Y fields at line 3365  
 Invalid X or Y fields at line 3420

5. Next, a *Coordinate Reference System Selector* will ask you to select a coordinate reference system. Since the earthquake coordinates are in latitudes and longitudes, you should select *WGS 84*. Click *OK*.



6. You will now see that the data will be imported and displayed in the QGIS canvas.

