

# Creating Heatmaps

## QGIS Tutorials and Tips



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클러스터 분석은 데이터의 유사성을 기반으로 그룹을 형성하는 방법이다. 클러스터 분석은 데이터의 유사성을 기반으로 그룹을 형성하는 방법이다. 클러스터 분석은 데이터의 유사성을 기반으로 그룹을 형성하는 방법이다. **cluster analysis**은 'hotspot analysis'와 유사한 개념이다.



**Surrey**

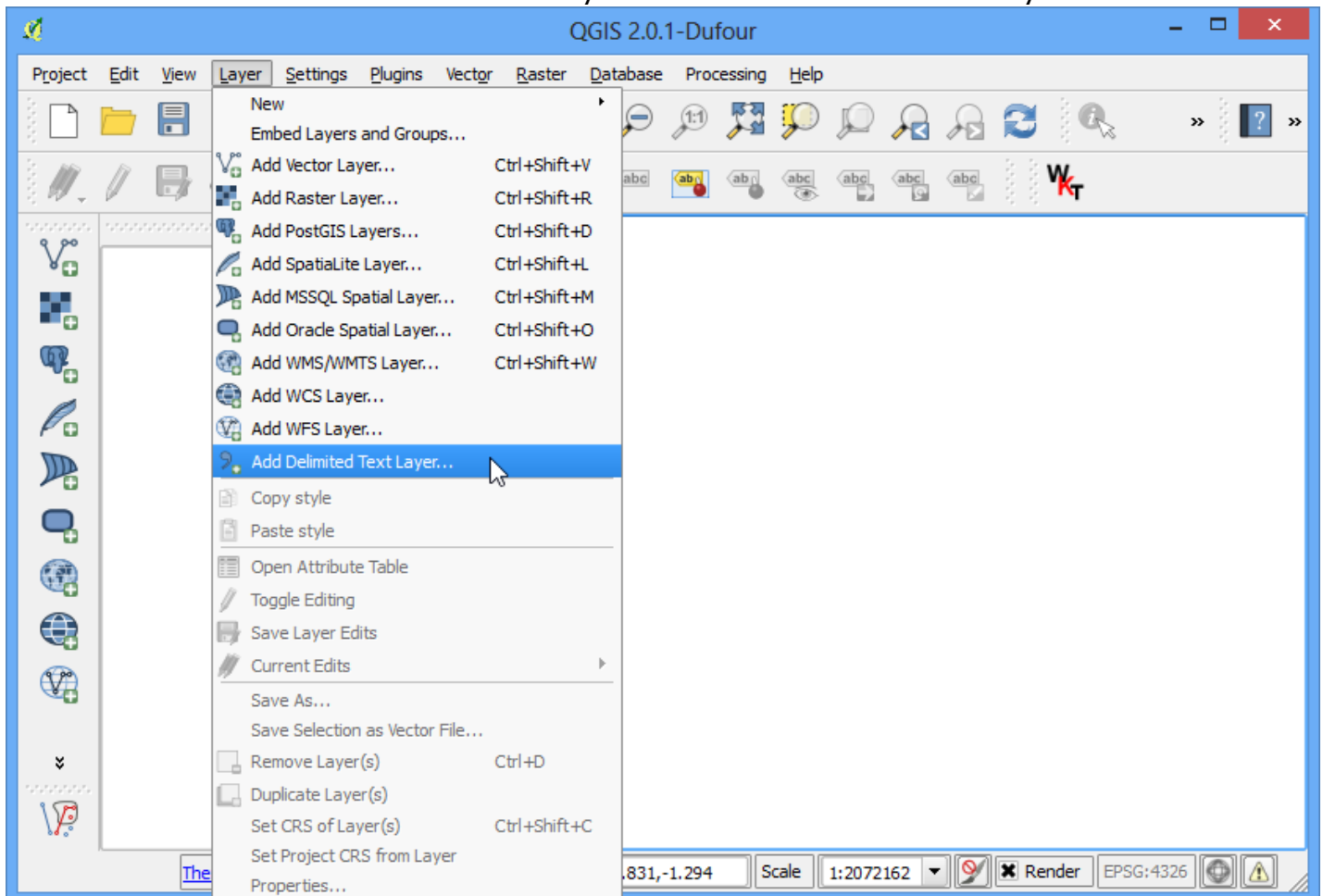


```
raw data from the Police.uk crime mapping website
<http://data.london.gov.uk/datastore/package/policeuk-crime-data>_.
```

Download the [Surrey data](#).

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1. 〇〇〇〇 〇〇〇 〇〇〇 〇〇〇〇 〇〇〇〇〇. 〇〇〇〇 CSV〇〇〇〇 〇〇 〇〇〇〇. QGIS 〇 〇 〇〇〇〇 〇〇〇〇〇(〇〇〇 〇〇〇 :doc: `importing\_spreadsheets\_csv` 〇 〇〇〇〇). 〇〇 〇〇〇 --> 〇〇〇〇 〇〇〇 〇〇〇 〇〇〇 :menuselection: `Layer --> Add Delimited Text Layer` 〇 〇〇〇〇〇.



2. `police-uk-crime-data-surrey.txt` `:``guilabel:``CSV`  
`(comma separated values)` `*Easting*` `*Northing*` `X` `Y`  
`:``guilabel:``Use spatial index` `OK`.

Create a Layer from a Delimited Text File

File Name: `C:/Users/ujaval/Downloads/police-uk-crime-data-surrey/police-uk-crime-data-surrey.txt` `Browse...`

Layer name: `police-uk-crime-data-surrey` Encoding: `UTF-8`

File format: ☒ `CSV (comma separated values)` ☐ `Custom delimiters` ☐ `Regular expression delimiter`

Record options: Number of header lines to discard: `0` ☒ `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)`

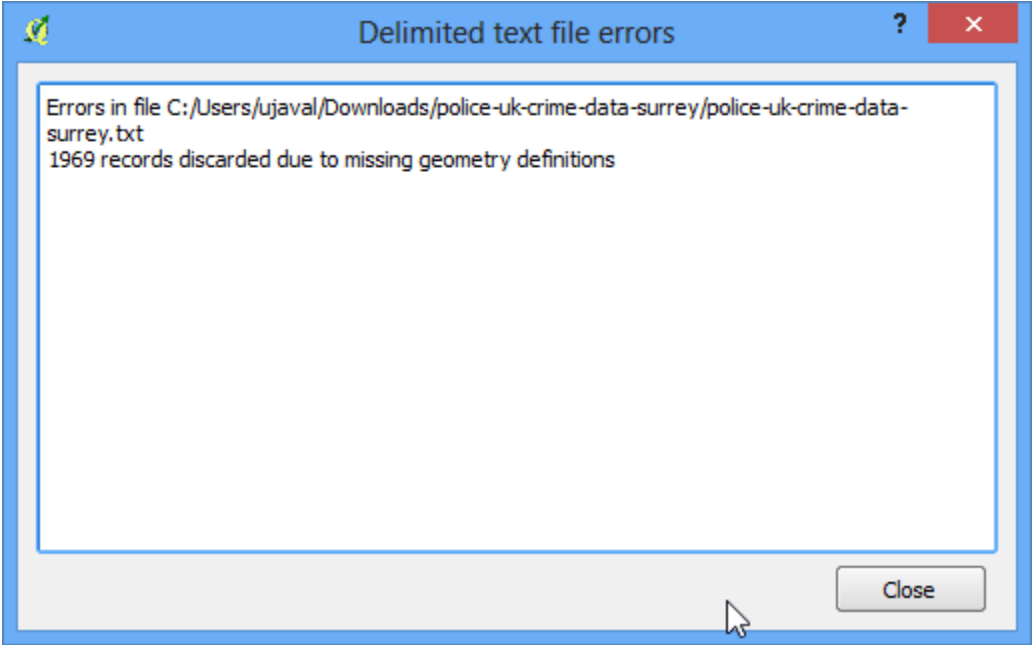
X field: `Easting` Y field: `Northing` ☐ `DMS coordinates`

Layer settings: ☒ `Use spatial index` ☐ `Use subset index` ☐ `Watch file`

|   | ID     | Month   | Reported by   | Falls within  | Easting   | Northing  | Location                  | Crime type | Conte... |
|---|--------|---------|---------------|---------------|-----------|-----------|---------------------------|------------|----------|
| 1 | 480097 | 2010-12 | Surrey Police | Surrey Police | 532773.00 | 156680.00 | On or near Addison Road   | Burglary   |          |
| 2 | 480098 | 2010-12 | Surrey Police | Surrey Police | 498361.00 | 149806.00 | On or near The Oval       | Burglary   |          |
| 3 | 480099 | 2010-12 | Surrey Police | Surrey Police | 498205.00 | 165251.00 | On or near Albury Close   | Burglary   |          |
| 4 | 480100 | 2010-12 | Surrey Police | Surrey Police | 507437.00 | 174069.00 | On or near Sanctuary Road | Burglary   |          |
| 5 | 480101 | 2010-12 | Surrey Police | Surrey Police | 498205.00 | 165251.00 | On or near Albury Close   | Burglary   |          |

`OK` `Cancel` `Help`

3. `:``guilabel:``Close`.



4. ☐ ☐ `Coordinate Reference System (CRS)` ☐ ☐☐☐☐☐. ☐☐☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ British National Grid ☐ ☐ ☐ ☐☐. CRS :guilabel:`OSGB 1936 / British National Grid` ☐ ☐☐☐☐. :guilabel:`OK` ☐ ☐☐☐☐.



5. □□ QGIS □ □□□ □□□□□□ □□ □ □□□□.





7. To create the heatmap, you need to enable a core plugin named *Heatmap*. See [□□□□](#) [□□□□](#) to know how to enable built-in plugins. Once you have enabled the plugin, go to Raster › Heatmap › Heatmap.

### **Warning**

The Heatmap plugin has a bug in QGIS 2.8.1. See [this post](#) for workarounds.



8. `Heatmap Plugin` `Output raster` `crime_heatmap` `Radius` `1000` `heat` `Advanced` `X` `Cell Size` `Y` `100` `OK`





9. □□ □□□ □□□□ □□□□ □□ □□□□ □□ □ □□□□.



10. `guiabel: Properties`

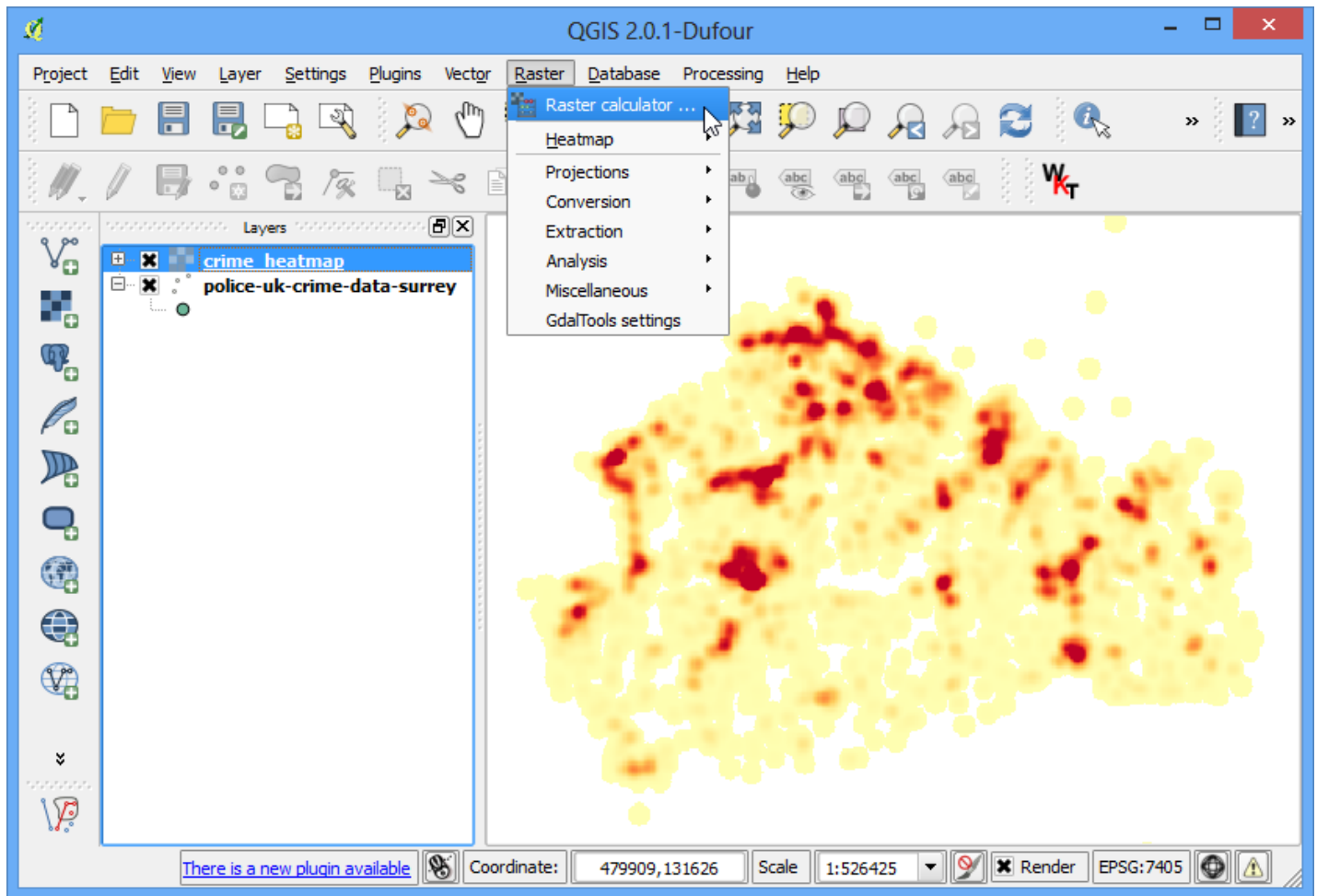


11. `Style` `Render type` `Singleband pseudocolor` `Load min/max values` `Accuracy` `Actual (slower)` `Load` `Generate new color map` `YlOrRd (Yellow-Orange-Red)` `Classify` `OK`





13. □□ □□□□ □□□□□□. □□□ □□□ □□□ □□□□□. □□□ □□□ □ □□□ □□□□□□ □□□□ □□□□. □□□ □□ □□ □□□ □ □ **hotspots** □ □□□□□ □□□□. □ □□□□ □□□ **hotspots** □ □□□□□ □□□□□. □□ □□□ --> □□□ □□□ :menuselection: Raster --> Raster Calculator` □ □□□□.



14. `crime_hotspots` Raster calculator `crime_hotspots` `crime_heatmap@1` `"crime_heatmap@1" > 5` `Add result to project` `OK`





16. `crime_hotspots_vector`` `crime_hotspots_vector.shp`. `Field name`` `DN` `Load into canvas when finished`` `OK``





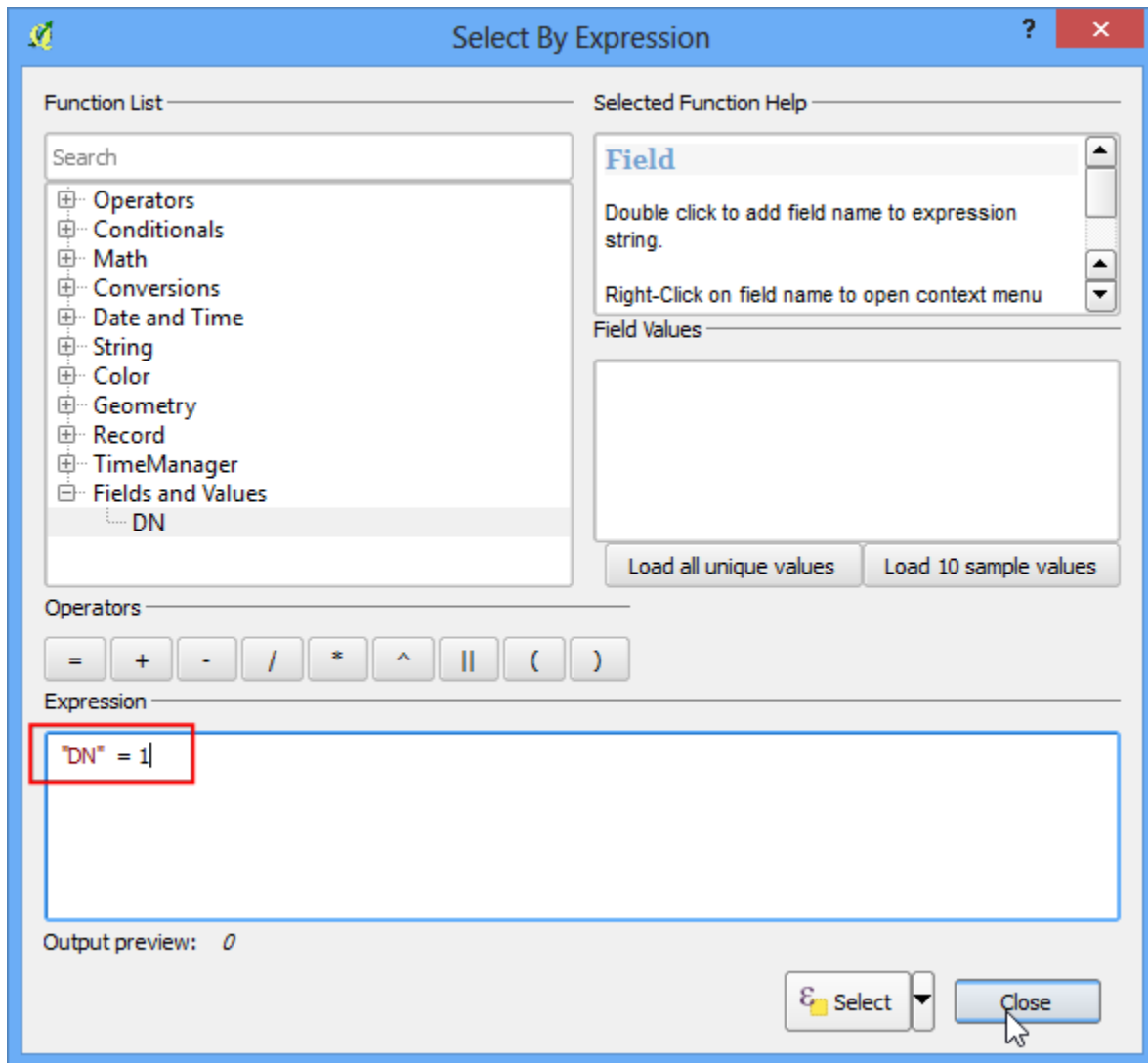
17. □□ □□□ □□□ □ □□ □□□ QGIS □□□ □□□□. □□□ □□□□□ □□□□ □□□□ □□□ □□□□. □ □□□□ 0 □ 1 □ □□□ □□ □□□□ □□□□ □□□□. 0 □□ □□□ □□□□□□. □□□ □□□ □□□□□ □□□□□. □□□□ □□□□□□ □□□□□ □□ :guilabel: `Open Attribute Table` □ □□□□□.



18. □□ □□□ :guilabel: `Attribute table` □□ □□□□ □□□ □□ □□ :guilabel: `Select feature using an expression` □ □□□□□.



19. Click the "DN" = 1 button in the toolbar. Click the "Select" button in the toolbar. Click the "Close" button in the toolbar.



20. QGIS の「Select By Expression」ダイアログボックスで、フィールド名「DN」を選択し、式「"DN" = 1|」を入力する。この操作により、フィールド「DN」の値が 1 のレコードが選択される。ダイアログボックスの下部には「Select」ボタンと「Close」ボタンがある。また、「Output preview」には 0 と表示されている。



21. `crime_clusters` `:guilabel:` Add saved file to map `:guilabel:` OK `:`



