110-2 地圖與地理資訊系統
LAB 05

向量資料處理 vector data handling

助教： 倪煒傑、楊宇翔、張旻蒨

今日實習
向量資料處理

1 向量資料處理

2 點位資料分析

3 多邊形圖徵簡化

向量資料操作實習使用圖資

- **臺灣村里界：taiwan_village_3826.shp**
- **舊台中市、台中縣：taichung_city.shp; taichung_county.shp**
- **台北市區界：taipei_town_3826.shp**
- **臺北市前100大里：largest_100_village.shp**
- **台北市北投區里：beitou.shp**
- **台北市診所：taipei_pharmacy.shp**

資料來源：
台灣中央政府的open data;
台北市政府的open data

TWD 97 TM2

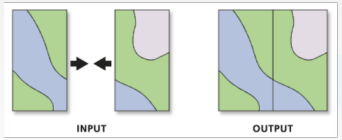
EPSG: 3826

檔案連結：https://drive.google.com/drive/folders/1g-pMVKomzzFMLja8FeDk-7oi7urd4NUr?usp=sharing
（NTU COOL 上面也有了）

向量資料操作
第一部分

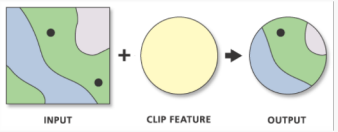
Merge, clip, intersect, union, dissolve

Merge



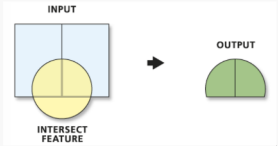
將兩個以上的圖層合併成單一圖層

Clip



依據選取圖層的形狀，對目標圖層進行切割，擷取出想要的部分

Intersection

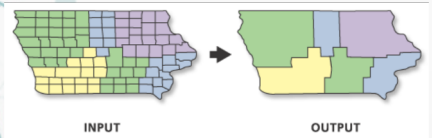


將兩個以上的圖層取交集，並同時包含這些圖層的屬性

Union

將兩個以上的圖層取聯集，並同時包含這些圖層的屬性

Dissolve

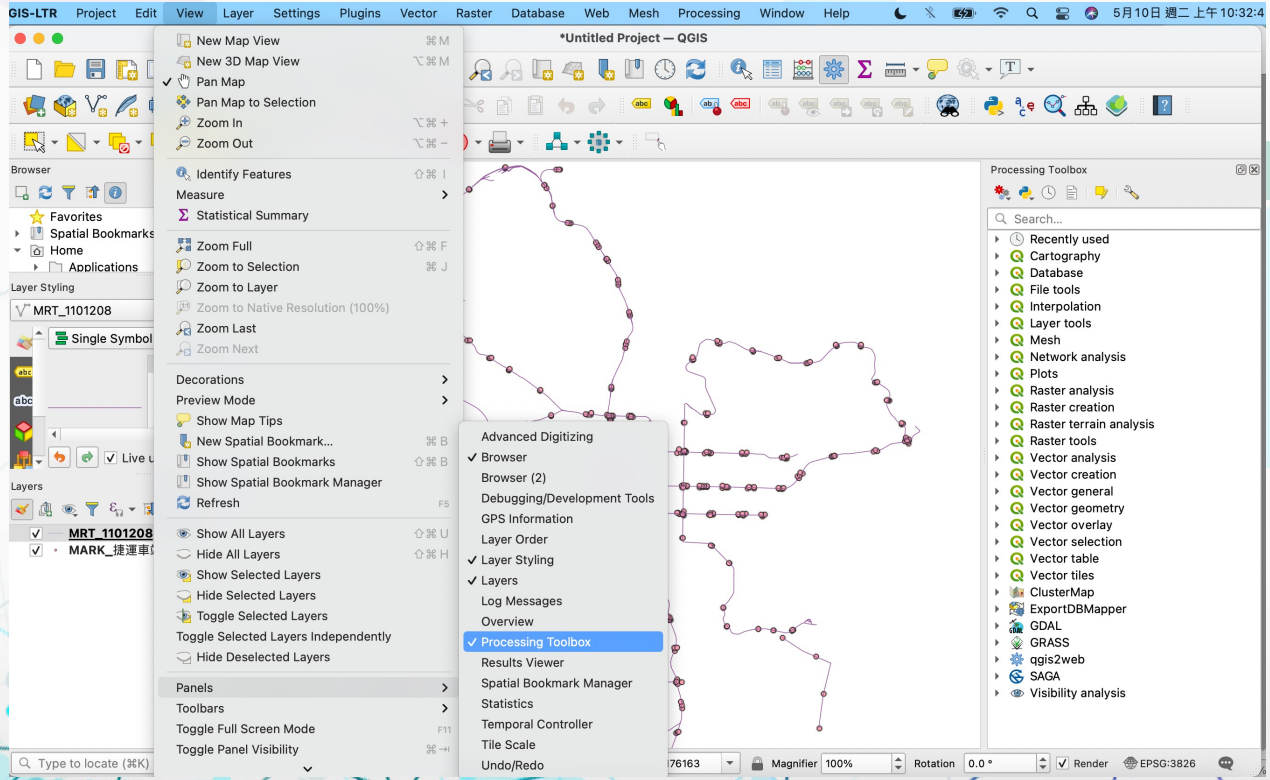


依據目標屬性欄位，將共通的圖徵進行融合

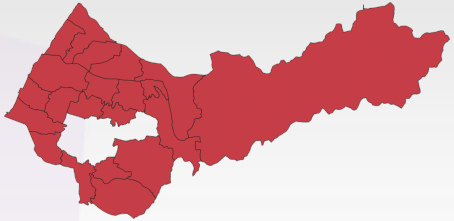
Processing Toolbox
工具箱

如果工具箱不見掉。。。

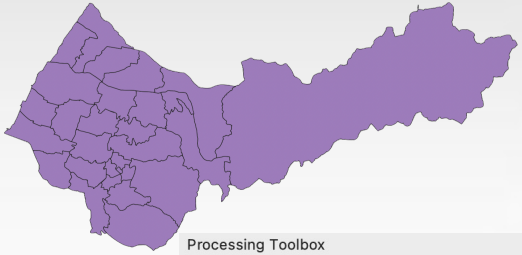
View > Panels > Processing Toolbox 勾起來



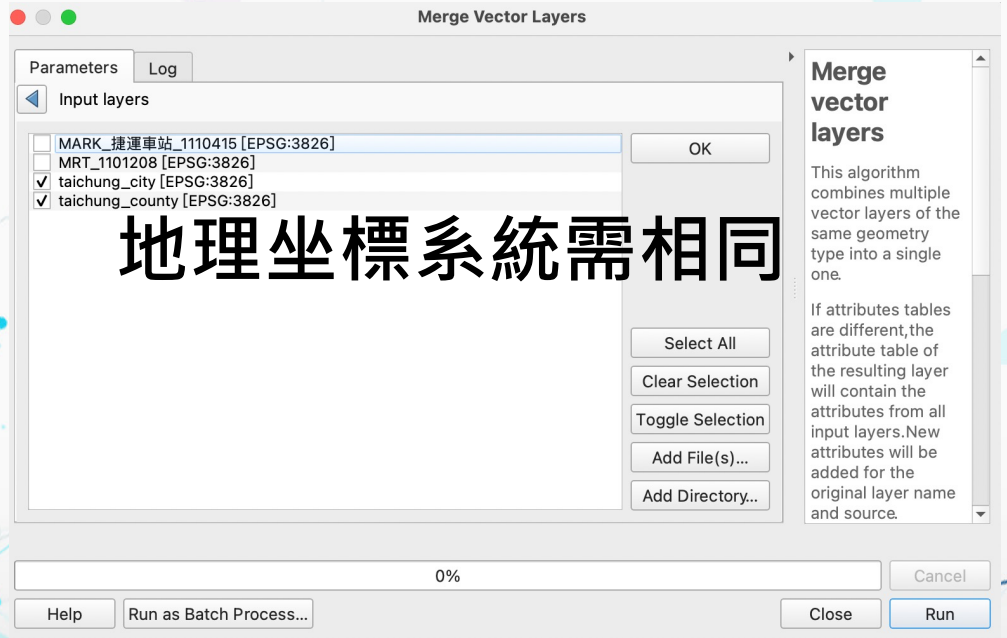
可以使用關鍵字搜尋



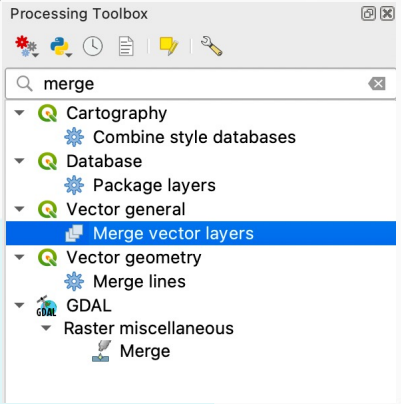
Merge



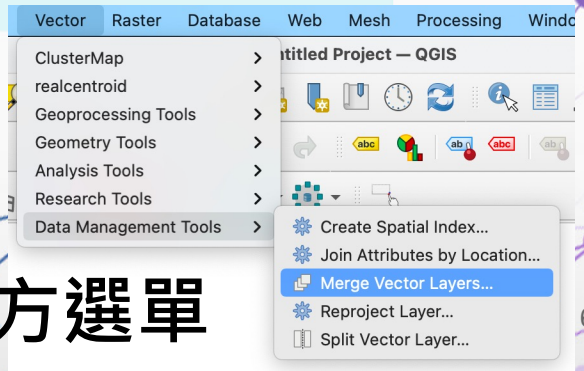
- 合併 舊臺中縣 與 舊臺中市



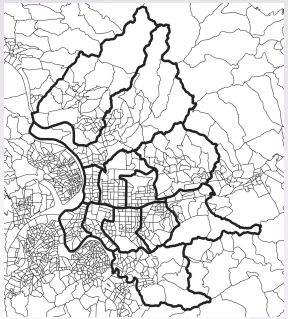
地理坐標系統需相同



工具箱

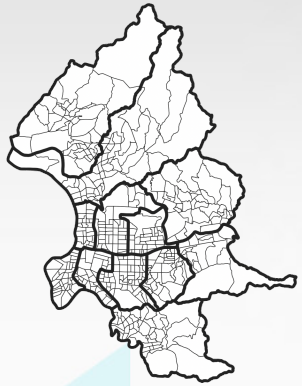


上方選單



Clip

- 挑選出在臺北市界內的村里。

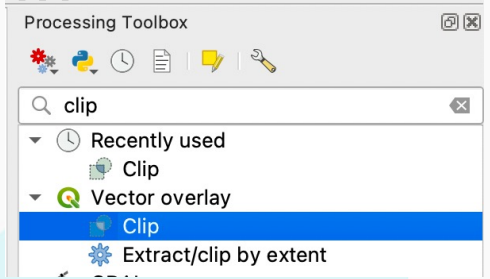


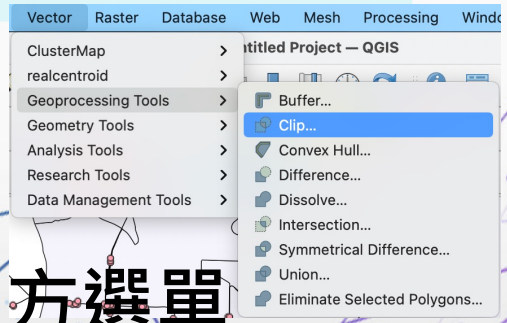
工具箱

被切的（麵團）

刀子（造型模具）

地理坐標系統需相同

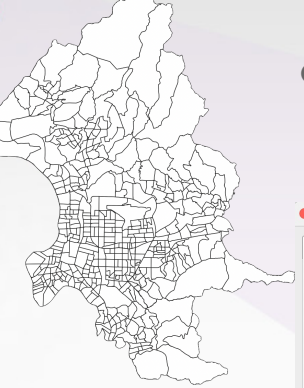


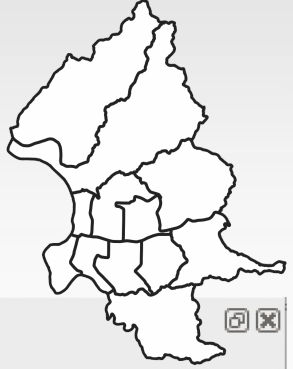


上方選單

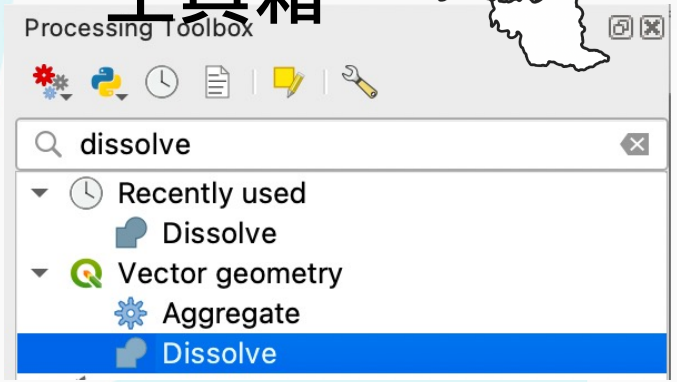
- 把臺北市村里融合到12 分區。

Dissolve

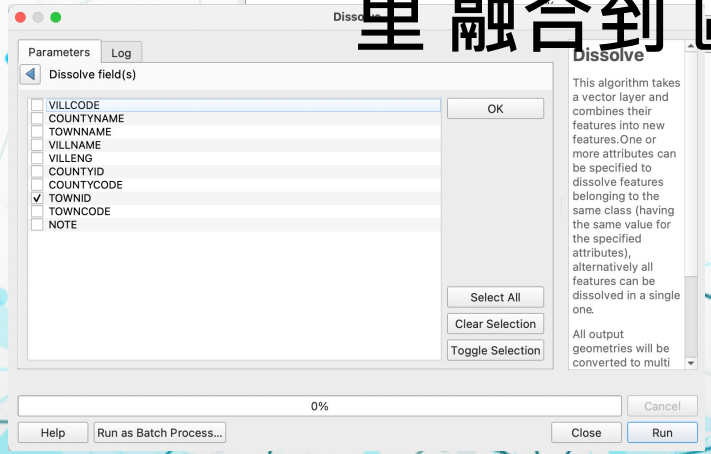




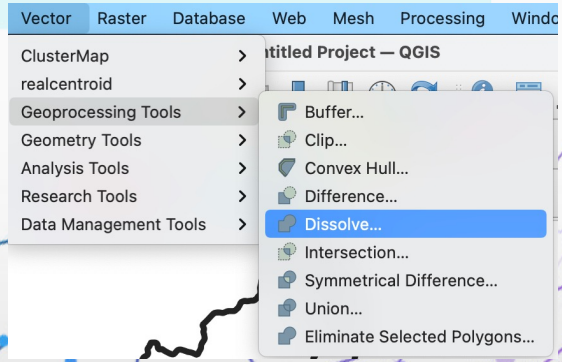
工具箱

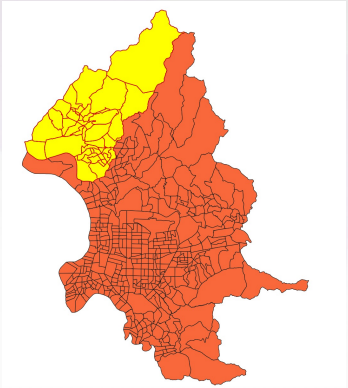


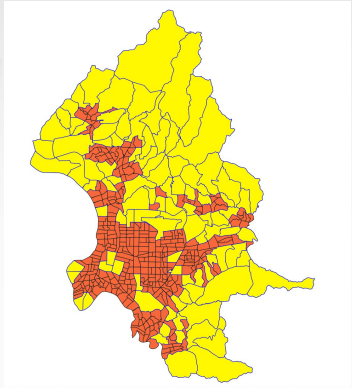
里 融合到 區



上方選單

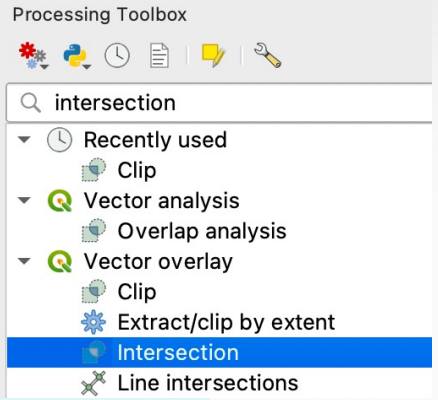






Intersection

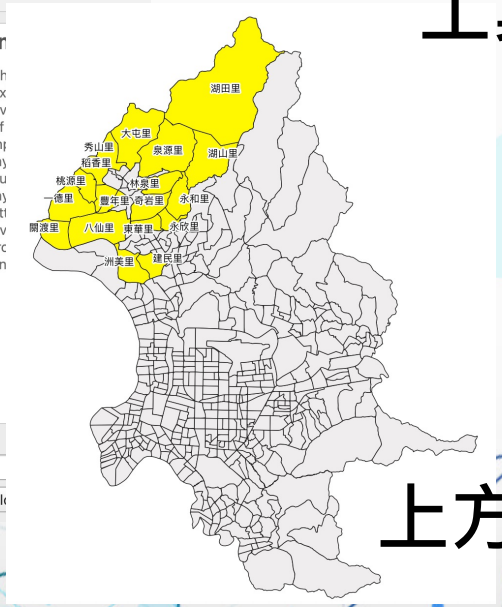
- 找出村里面積在台北市排名前 100 的村里「並且」位於北投的圖層

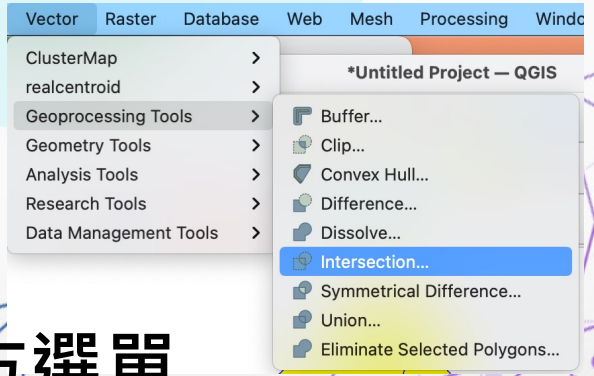


工具箱

被切的（麵團）

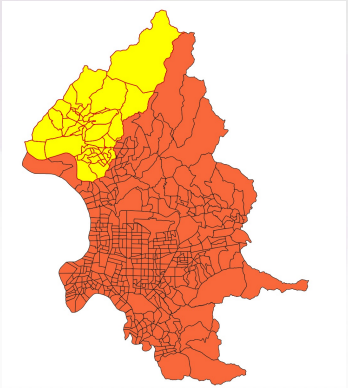
刀子（造型模具）

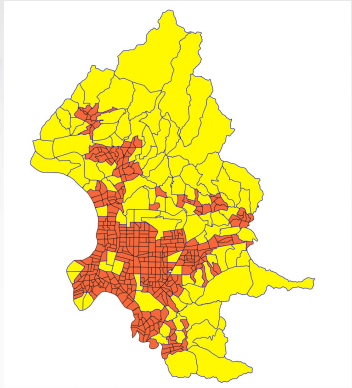




上方選單

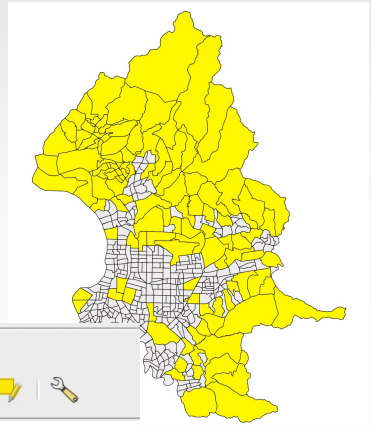
地理坐標系統需相同

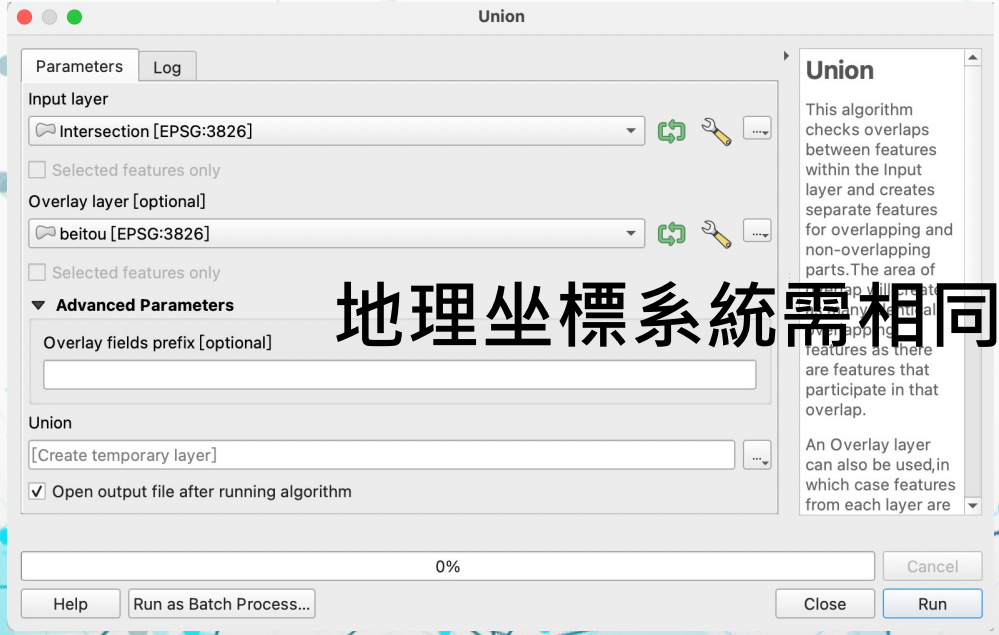




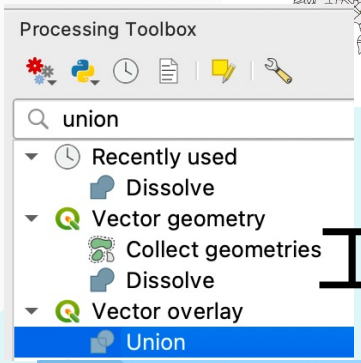
Union

- 找出村里面積在台北市排名前 100 的村里「或是」位於北投的圖層

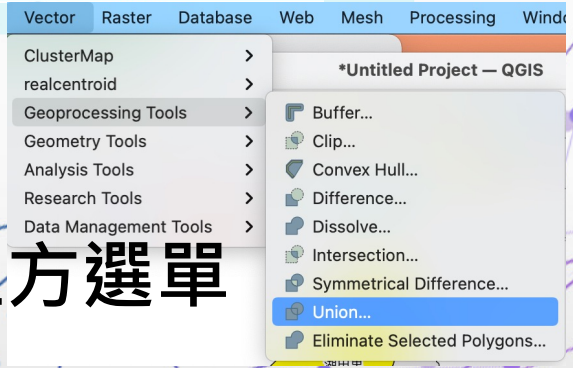




地理坐標系統需相同



工具箱



上方選單

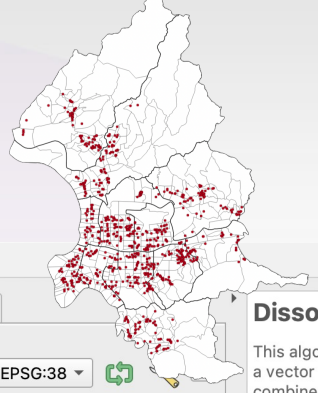
向量資料操作
第二部分

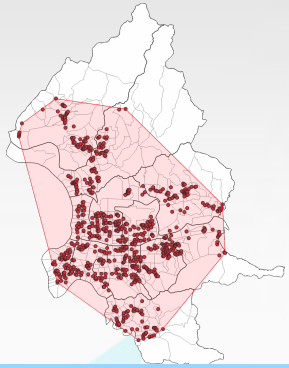
凸殼 Convexhull

最小範圍幾何 Minimun Bounding Geometry

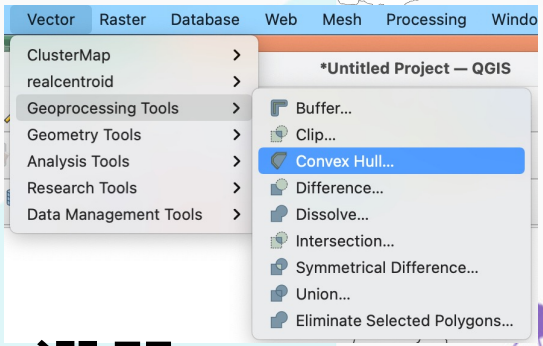
凸殼 Convex hull

- 臺北市藥局的服務範圍

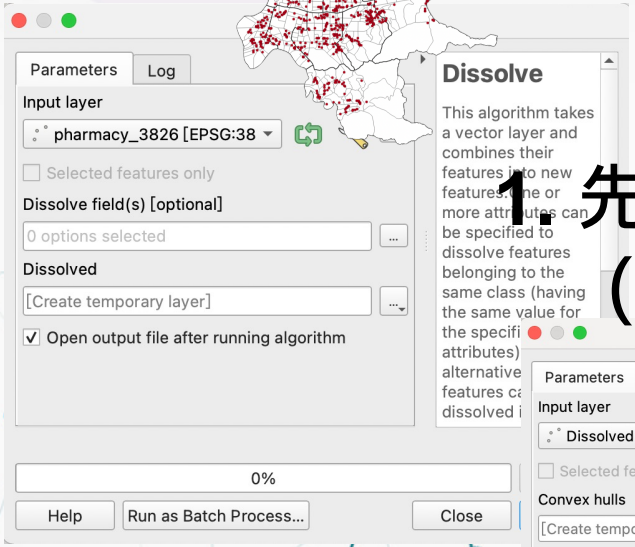




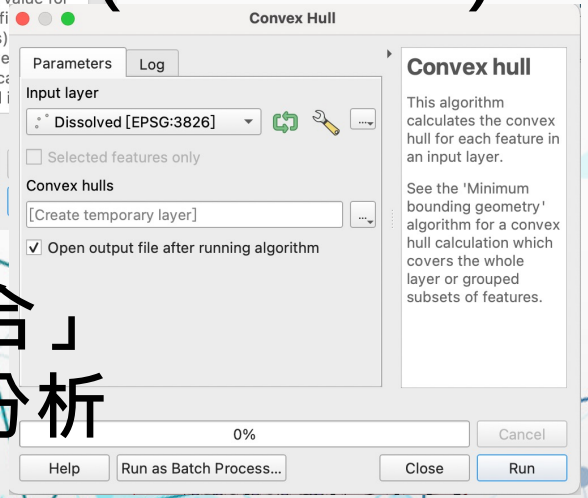
工具箱

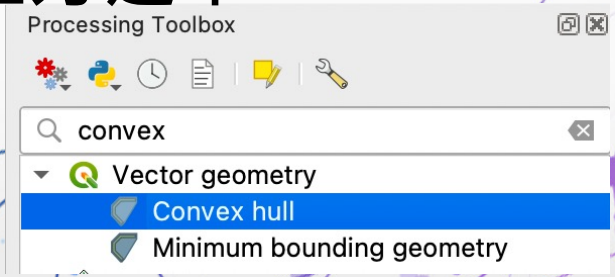


1. 先把點圖層 融合（dissolve）



上方選單





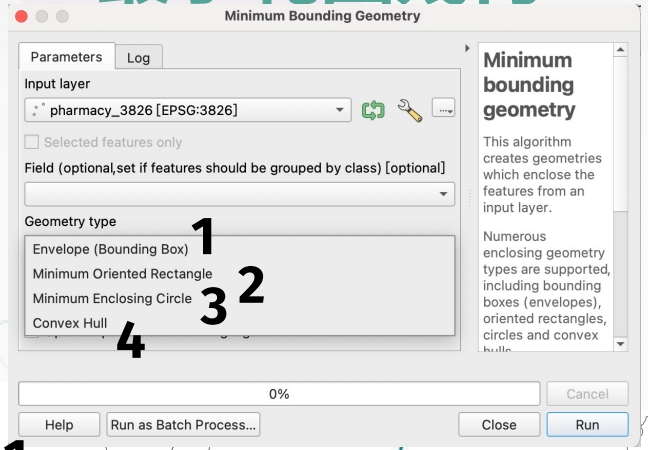
2. 再針對「融合」點圖層做凸殼分析

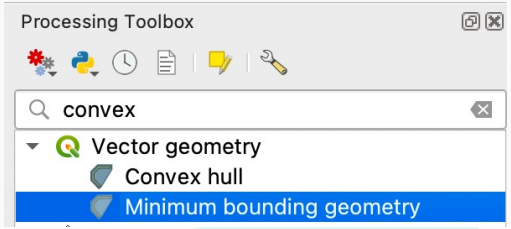
最小範圍幾何 Minimum Bounding Geometry

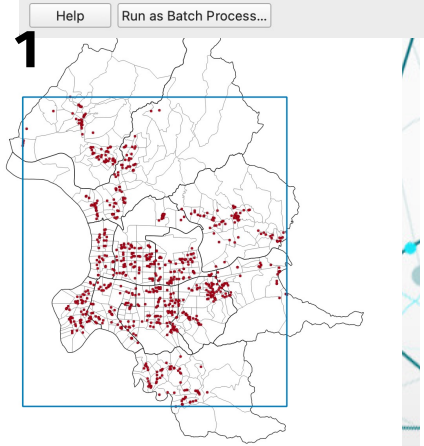
不用 dissolve

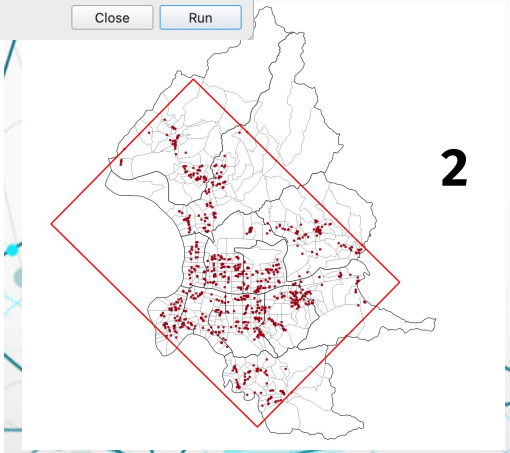
工具箱

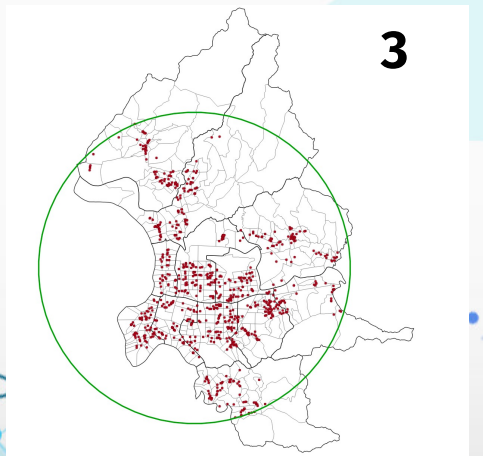
- 臺北市藥局的服務範圍

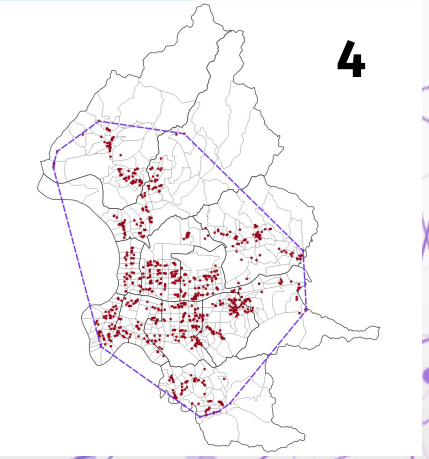






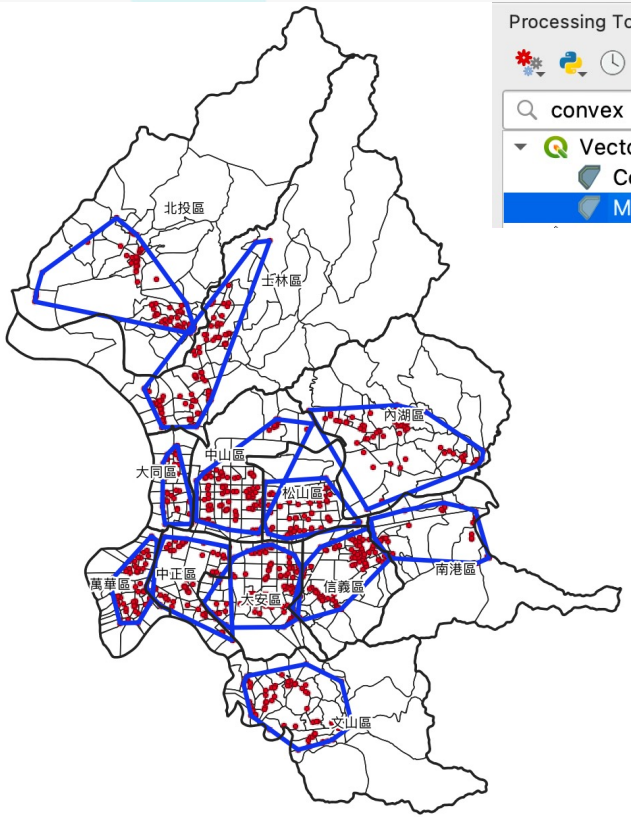


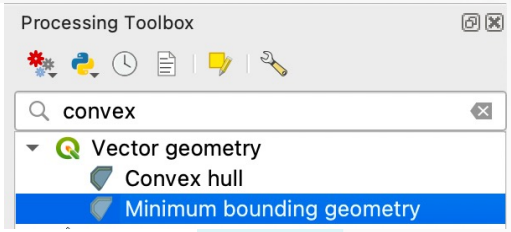




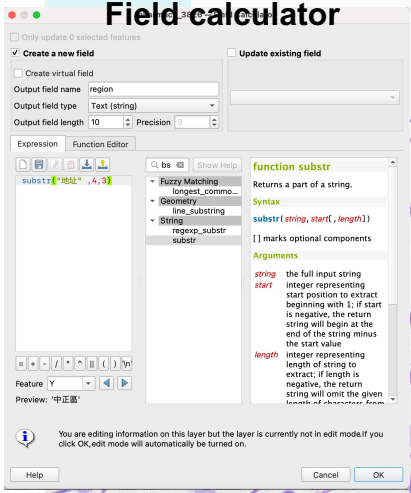
進階凸殼 Advanced Convex hull

工具箱





（參考用，已經幫你做好了）
從地址萃取區域
Field calculator



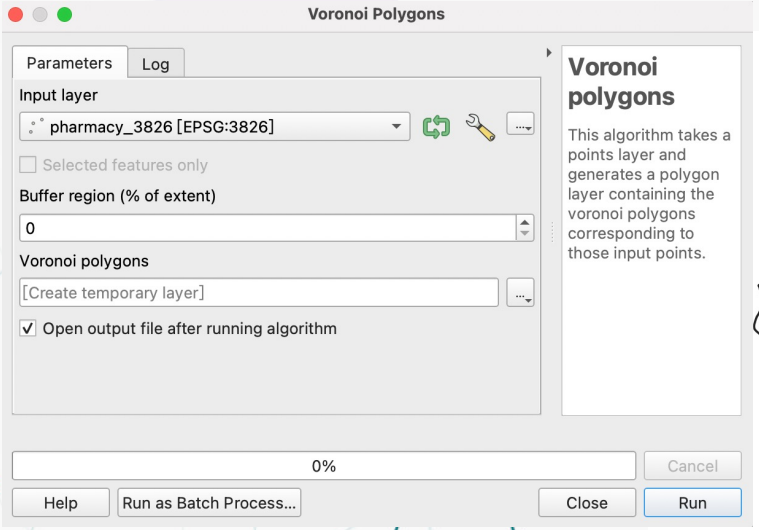
向量資料操作
第三部分

泰森多邊形、德洛涅三角形

Thiessen (Voronoi) Polygon、Delaunay triangulation

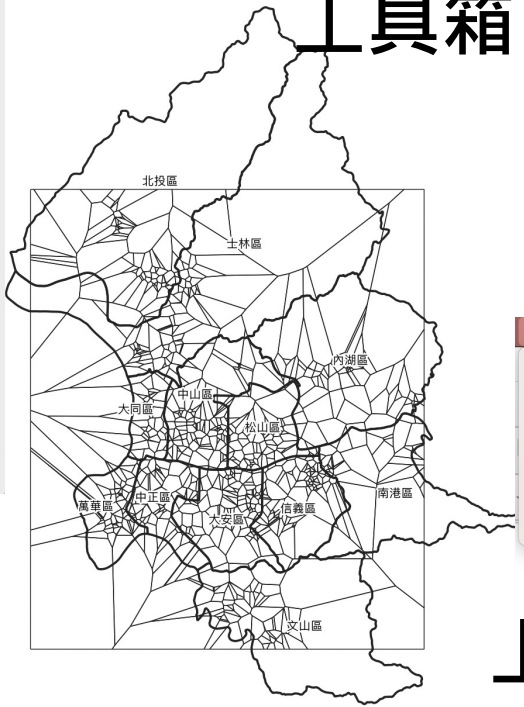
- 臺北市每一間藥局的服務範圍

泰森多邊形 Thiessen (Voronoi) Polygon

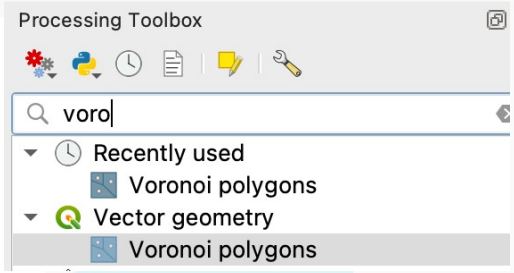


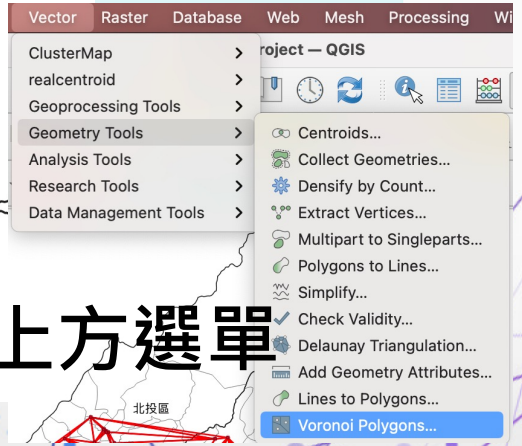
坐標不可有空幾何

No null geometry allowed



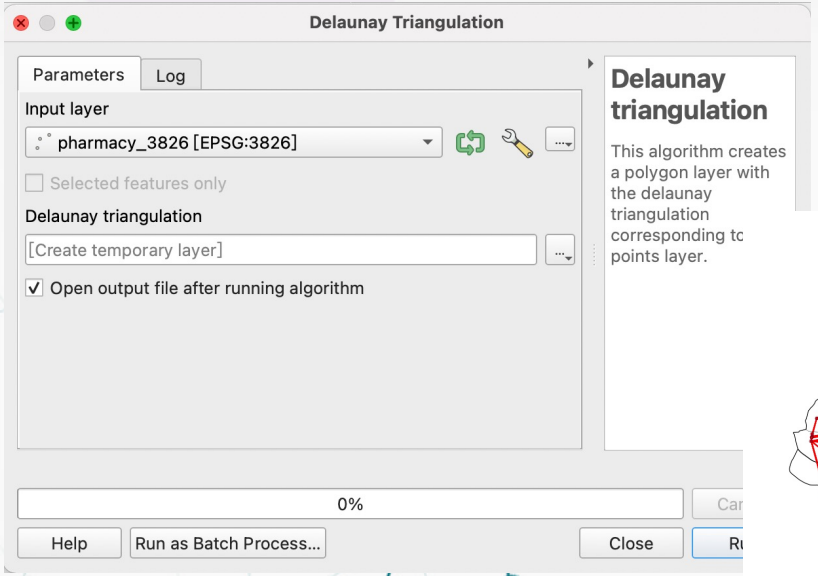
工具箱





上方選單

德洛涅三角形 Delaunay triangulation



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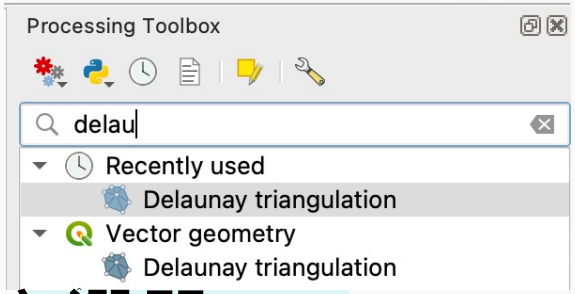
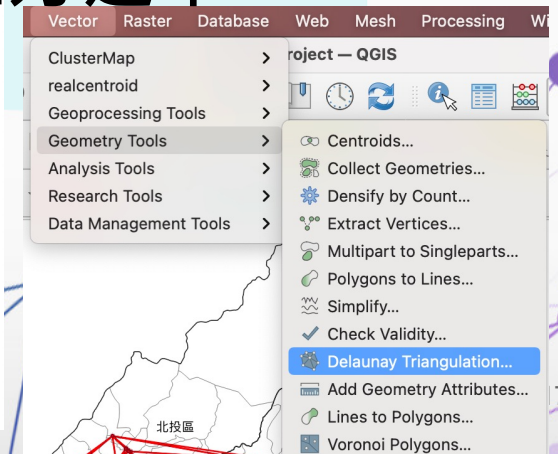
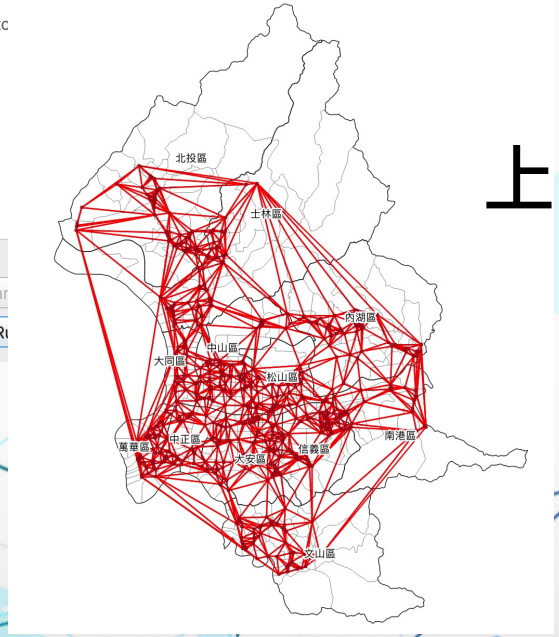


上方選單



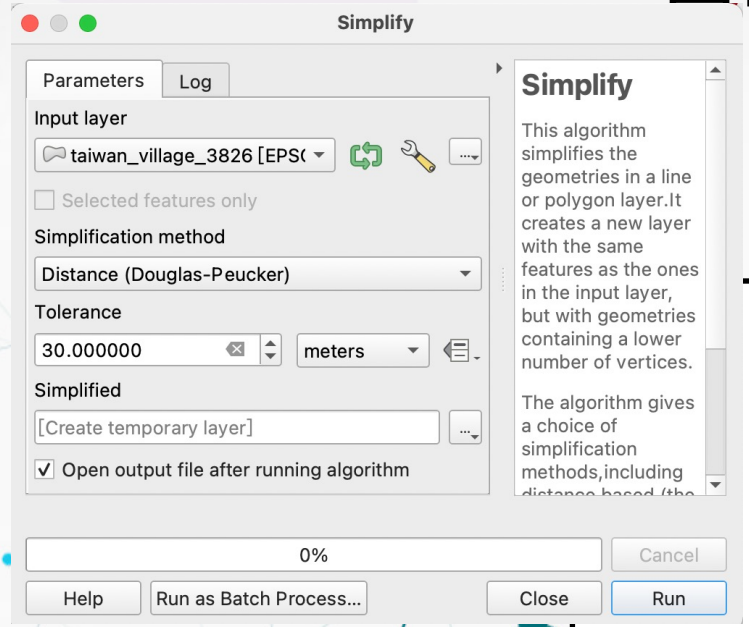


向量資料庫操作

第四部分

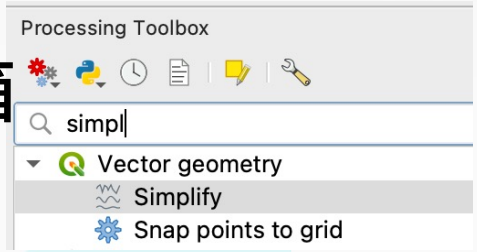
多邊形圖徵簡化

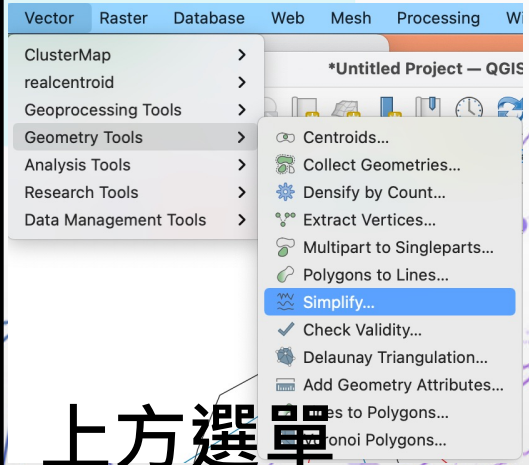
圖徵簡化 Simplify



30 meters

工具箱





上方選單

檔案大小縮減（資料載入速度變快）