



## Section : 10. Vector

### Module : 10.4. Intersection and Dissolve Basics

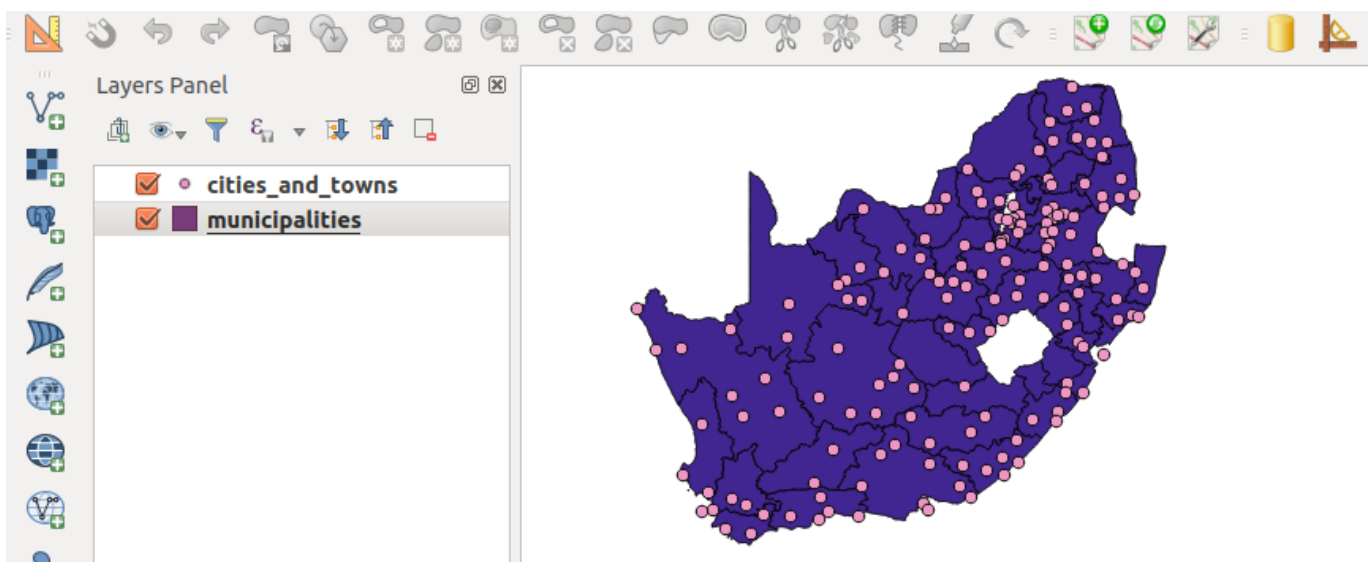
#### Geoprocessing operations basics in Context

*“Geoprocessing are a group of tools that are geared up for doing analysis. When dealing with vector data the tools include buffer, clip and dissolve.”*

Geoprocessing algorithms are the building blocks for most vector analysis. When doing spatial selection there is a greater need to understand and differentiate concepts like within, intersect, disjoints, etc. The most common geoprocessing algorithms available in QGIS are:

- Buffer
- Intersect
- Union
- Clip
- Dissolve

This module is very broad and we will look at some of the more common operations that are done using these tools.



#### **You try:**

##### **Goal: To learn how to use geoprocessing functions**

- Create a filter on the Municipalities layer.
- Do a spatial selection using the tools available in QGIS to select cities within the filtered municipality.

**NB: Use the spatial predicates mentioned.**

- Create a new column called province in the cities layer.
- Use field calculator to update the selected records to match the province name in the municipalities layer.
- Update the cities and towns to show a province name in which they are located.

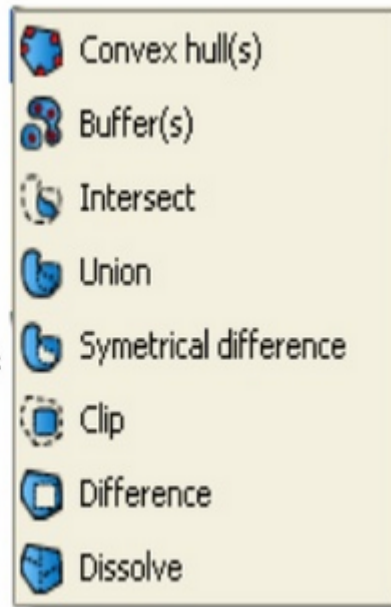
*Hint: Repeat the procedure above with a different filter each time.*

Is there a better way to update the points so that they acquire the name of the province they exist in?

- Using the filter\_example dissolve all the municipalities to create a province layer and merge all the provinces layers created to form a country provincial layer.
- Explore how you can achieve the above task in an efficient way.

### More about

- Convex Hull
- Buffer
- Intersect
- Union
- Symmetrical Difference
- Clip
- Difference
- Dissolve



### Check your knowledge:

1. What is geoprocessing:
  - a. It is a tool that is used to manipulate data.
  - b. A collection of algorithm that do vector manipulation to produce new output.
  - c. A type of GIS dataset that is available in QGIS.
2. Which of the following statements is true:
  - a. A filter is applied in situations when you want to view a subset of the records.
  - b. Filtering is a non GIS concept.
  - c. A filter applies when dealing with only a polygon layer
3. Is select by location an example of a spatial operation:
  - a. True
  - b. False

### Module video tutorial:

- <https://www.youtube.com/watch?v=anvzHVHnXDQ>

### Further reading:

- Geoprocessing: <http://nates-intro-to-qgis.readthedocs.io/en/latest/geoprocessing.html>
- Geoprocessing-tools: <http://gisgeography.com/geoprocessing-tools/>
- Geoprocessing-in-qgis: <https://www.slideshare.net/swethaashok28/geoprocessing-in-qgis>

Download the sample data for the lesson from [http://changelog.qgis.org/media/images/lesson/worksheet/external\\_data/3db9369da363ca7b2d97eb7c1731079b37b01f16.zip](http://changelog.qgis.org/media/images/lesson/worksheet/external_data/3db9369da363ca7b2d97eb7c1731079b37b01f16.zip).