



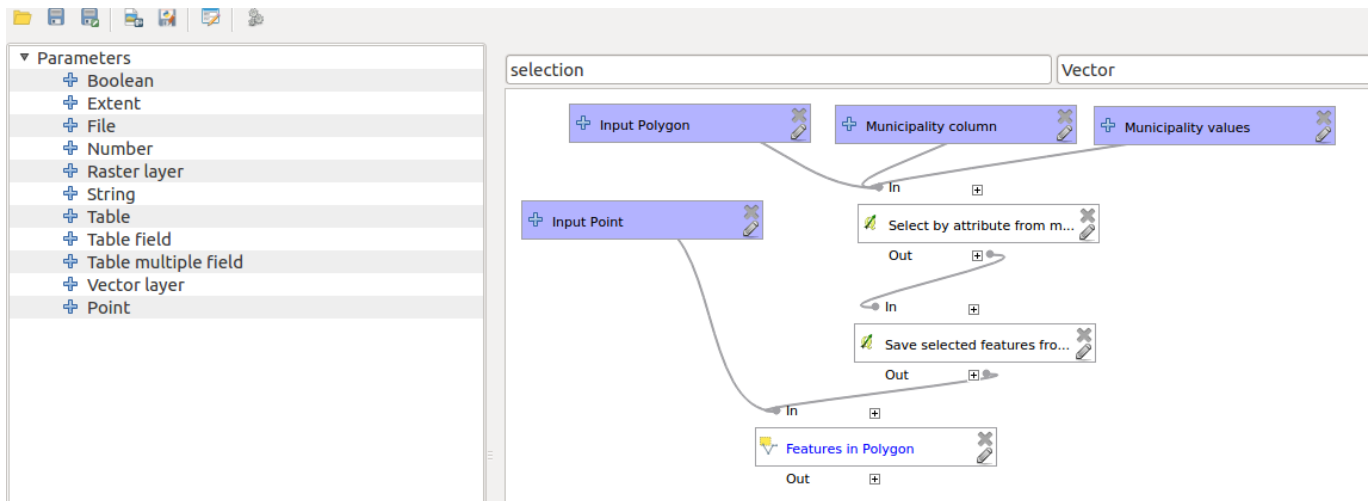
## Section : 11. Processing

### Module : 11.1. Graphical Modeller

#### Graphical Modeller in Context

*“GIS workflows typically consist of running multiple steps before reaching a solution. This is cumbersome in situations where you have to do it over again. The graphical modeller is useful for defining”*

In this module, we will build upon the concepts we covered in module **qgis\_intersect** from **section 10**.



#### **You try:**

**Goal: To update points (cities and towns) that lie within the each aggregate municipality layer with a column that depicts the location of the town relative to the municipality.**

- Open the project geoprocessing from the sample data.
- Activate processing toolbox
- Activate the graphical modeller.
- Drag the Vector Layer input and populate the dialogue.
- Select the algorithm that filter layers based on an expression.
- Populate the Select by Expression dialogue. Use the given sample expression.
- Select the dissolve algorithm and save the models in their default location.
- Run the model and view the results in QGIS.
- Proceed to filter, dissolve for all provinces and create a union that shows provincial boundaries.

Name	Expectation
Layers	cities_and_towns /municipalities
Expression	"province" = 'WC'

#### More about

Models are very powerful as they allow GIS task to be easily automated. The model builder is a visual tool that allows users to build geoprocessing workflows. The model is represented as a diagram that links together inputs and algorithms to produce a single/multi outputs.

The advantages of using the model builder are:  
It is intuitive.

- Vector features or raster cells are alterable using the model.
- The processing steps are visual and each individual step can be run separately to test a process before combining them into a bigger complex workflow.
- The model can be converted into a python script.
- The model can be used as an algorithm in another model.
- Models can be run multiple times using different parameters.
- Models can be made generic by using parameter when defining workflows i.e. a buffer model that accepts input from either point, line or polygon data.

### **Check your knowledge:**

1. Which of the following statements is true:
  - a. *You can run algorithms from external programs in the modeller*
  - b. *Rasters cannot be used in the modeller*
2. What is the effect of hard coding values in the model. I.e. defining the buffer distance within the model:
  - a. *It speeds up the speed of the model.*
  - b. *Model can only be used for that specific task.*
  - c. *Models cannot be exported as python scripts*
3. Can model be used as an algorithm within another model:
  - a. *True*
  - b. *False*

### **Further reading:**

- Index: [http://docs.qgis.org/2.14/en/docs/user\\_manual/processing/index.html](http://docs.qgis.org/2.14/en/docs/user_manual/processing/index.html)
- Modeler: [http://docs.qgis.org/2.14/en/docs/user\\_manual/processing/modeler.html](http://docs.qgis.org/2.14/en/docs/user_manual/processing/modeler.html)

Download the sample data for the lesson from [http://staging.changelog.kartoza.com/media/images/lesson/worksheet/external\\_data/581ad7f6b5d9de329d52a35cd34f2ee2d00d963c.zip](http://staging.changelog.kartoza.com/media/images/lesson/worksheet/external_data/581ad7f6b5d9de329d52a35cd34f2ee2d00d963c.zip).