Dissect and dissolve overlaps SAGA Next Gen Ver 0.1

QGis 3.34 LTR

WARNING

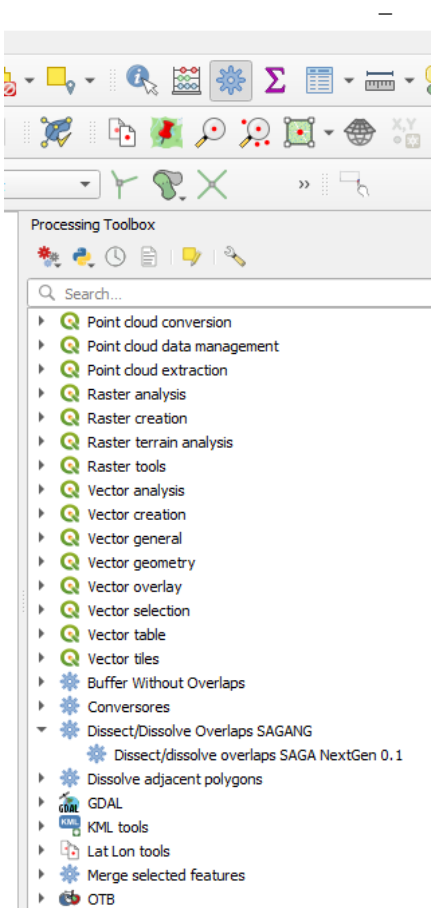
This plugin uses SAGA algorithms. Users must have QGis 3.34 or newer with SAGANG enabled. SAGA 9.1 or newer must be installed in your PC. See page 6 for more information.

1. Introduction

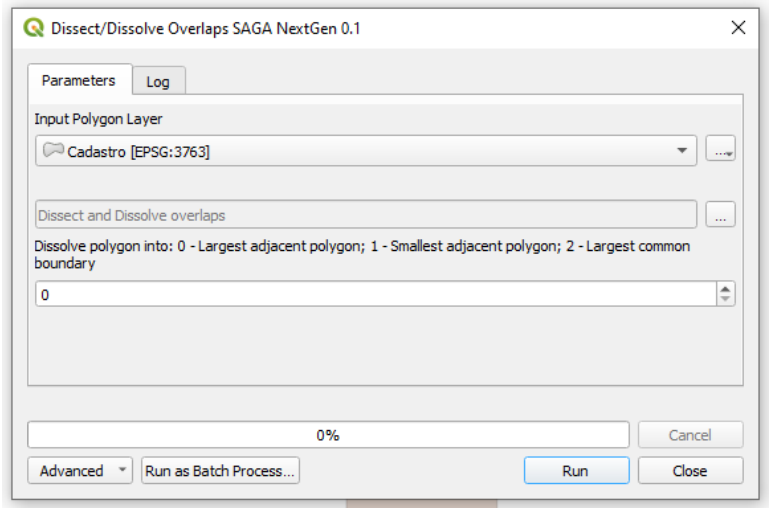
Use this plugin to detect if a polygon layer has two or more features (polygons) overlapping each other. In this case, the plugin can dissect the overlaps into distinct features and dissolve those features into a neighboring feature.

2. Using the plugin

Run the plugin by double clicking *Processing Toolbox -> Dissect/Dissolve Overlaps SAGANG -> Dissect and dissolve overlaps SAGA Next Gen 0.1*, like the following image:

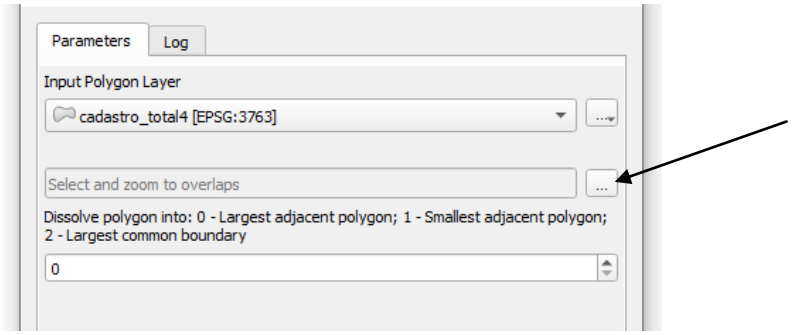


This action opens the following plugin parameters window:



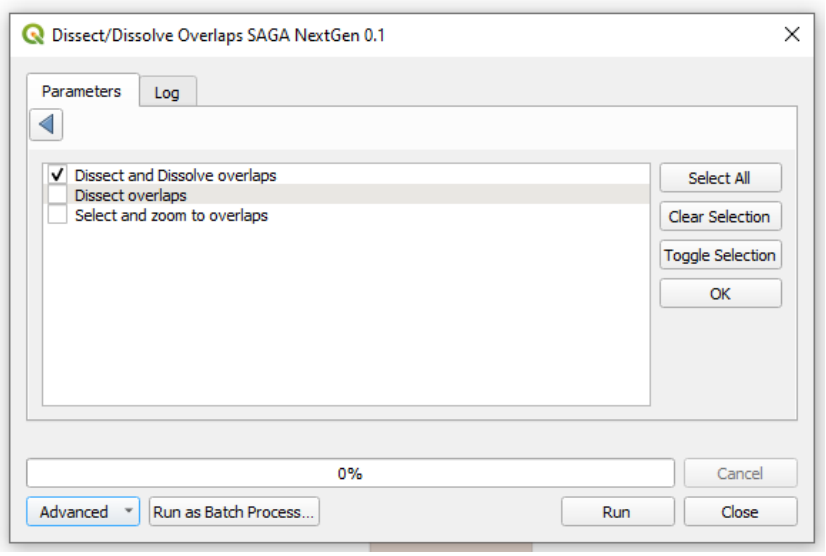
Where:

- ***Input Polygon Layer*: user must choose a polygon layer in order to detect if there are overlapping features and, if so, proceed with the following options;**
- ***Options window:* to open options window, click on the ellipsis sign:**



- ***Options:* there are 3 options available:**
  - **Dissect and dissolve overlaps;**
  - **Dissect overlaps;**
  - **Select and zoom to overlaps;**

  Note that "Dissect and dissolve overlaps" is the default selection:



For greater simplicity of explanation, let's start with the last option:

- **<u>Select and zoom to overlaps</u>: this option, that is always active, is used to detect if there are overlaps in the input polygon layer; if so, the features that overlap each other are selected, and the canvas zoom to this selection;**
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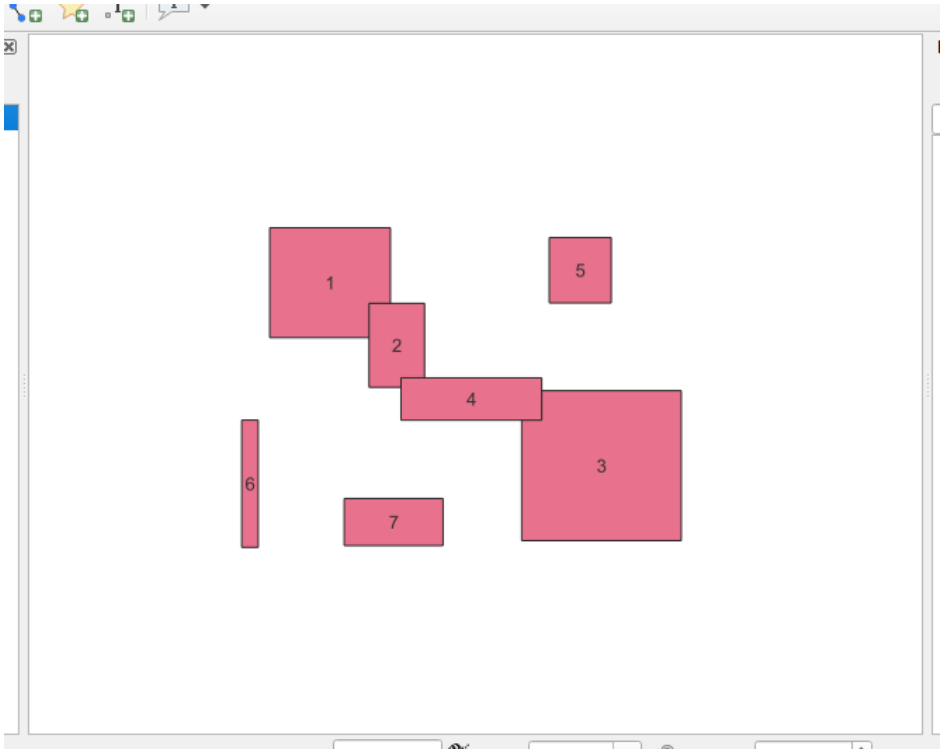
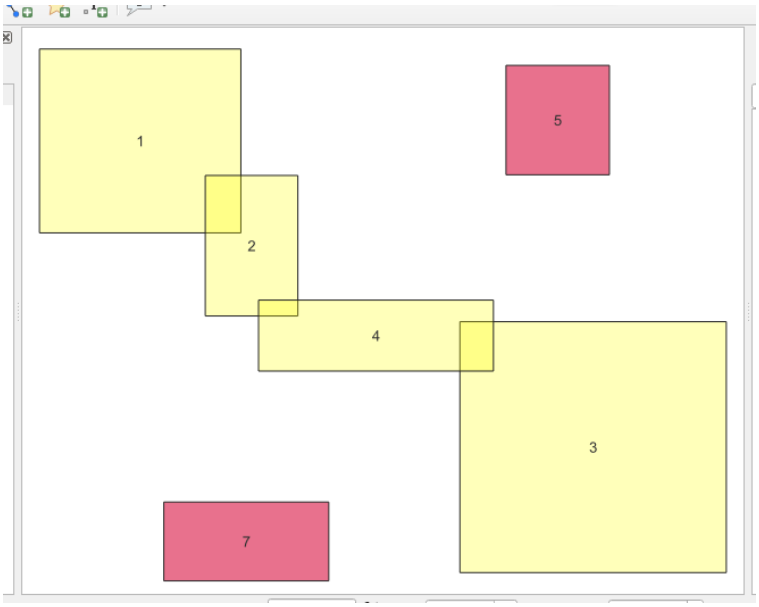


In the above image of the canvas, feature 2 intersects parts of features 1 and 4, and features 3 and 4 intersect each other in part.



In the above image of the canvas, after running the plugin, the intersections of features 1, 2, 3 and 4 are detected, selected and zoomed to them.

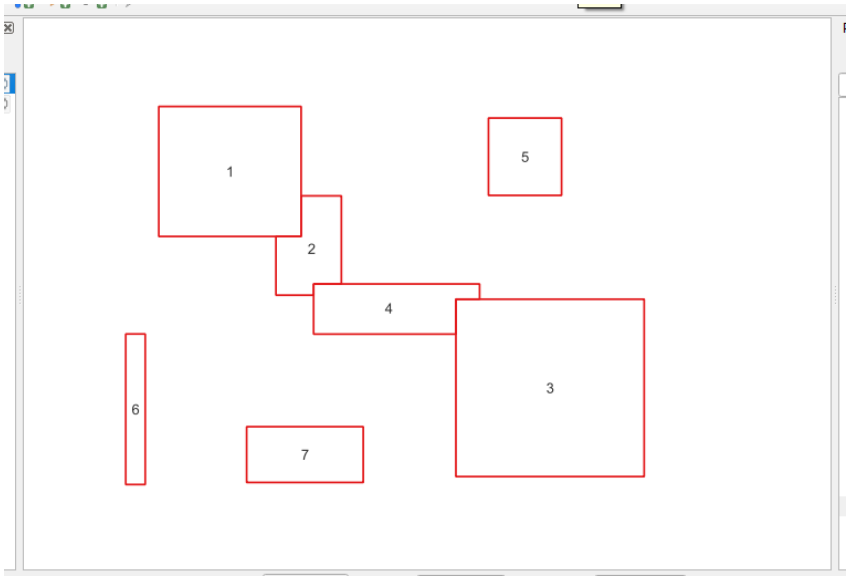
- **<u>If input polygon layer has no overlaps</u>: in this case, the plugin will issue a message, which will be visible for a period of ten seconds, closing automatically and ending the plugin execution (users should not try to close this window manually !);**

- **<u>Dissect overlaps</u>: if the previous option detects overlaps, and user have selected this one, the plugin will perform the dissection of the overlaps into distinct features, and will create a new shapefile layer, named "Intersected*XYZ*":**

In the above image of the canvas, after running the plugin with the option 2 selected, the intersections of features 1, 2, 3 and 4 are dissected, and a new shapefile layer were created with 3 new features, with Id_SI Inte = 2|1, 4|2 and 4|3.

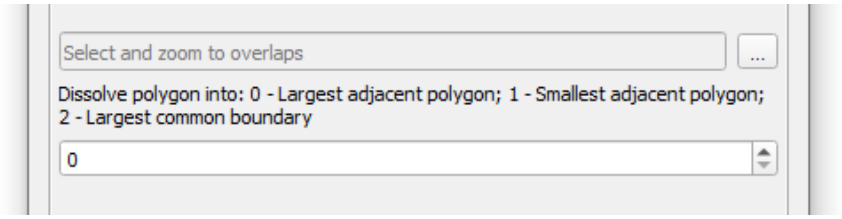
This new shapefile layer will have two new fields, named "Id_SI" and "Id_SI Inte"; the last one will have values like '2|1', for example. This value means that this feature was the overlapping area of features Id_SI=1 and Id_SI=2.

- **<u>Dissect and dissolve overlaps</u>: with this third option selected, the plugin will dissolve the new features created by the dissection of the overlapping areas, into the neighboring features, and a new shapefile layer named "Dissolved*XYZ*" is created:**



In the above image of the canvas, after running the plugin with the option 3 selected, the intersections of features 1, 2, 3 and 4 are dissolved, and a new shapefile layer were created.

- ***Dissolve polygons into*: user may choose the way overlaps are dissolved into neighboring features with the following options: 0 – Largest adjacent polygon; 1 – Smallest adjacent polygon; 2 – Largest common boundary.**



- ***What do the letters X, Y and Z mean in the shape name*: it is a set of 6 digits, corresponding to the [Hour, Minute, Second] the plugin was started by the user. Example: Dissolved141710 means that the user start running this plugin at 14 hours, 17 minutes and 10 seconds. This is a convenience for the user to try out several options.**

- ***Where the new shapes created are stored*: the IntersectedXYZ and DissolvedXYZ shapes are stored in the same folder as the respective QGis project.**

3. Preparing your QGis 3.34 (or higher) to work with SAGA Next Generation (SAGANG)

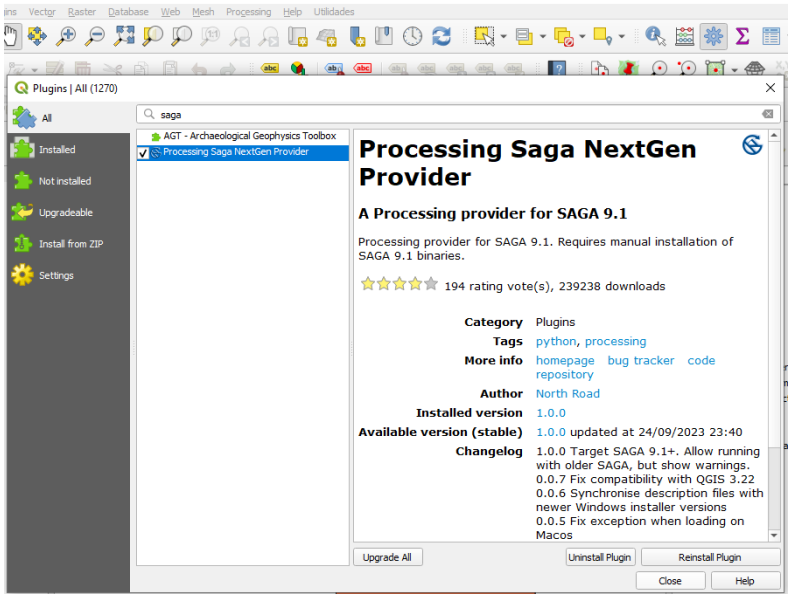
To use the "Dissect/Dissolve Overlaps SAGANG" plugin, you need to install and enable the "Processing Saga NextGen Provider" plugin, along with the latest SAGA GIS version (9.x):

1. **download the latest version 9.x of SAGA GIS [1];**
2. **unzip the file "saga-9.3.2_x64.zip" (or higher) and place the unzipped folder anywhere in your PC;**
3. **in the unzipped folder look for the file "saga4qgis.zip"; unzip this file and follow the instructions contained therein;**
4. **install the "Processing Saga NextGen Provider" plugin by going to menu Plugins->Manage and Install Plugins->All->Processing Saga NextGen Provider;**
5. **activate the "Processing Saga NextGen Provider" plugin by going to Settings->Options->Processing->Providers->SAGANG and enable SAGA, and look for the folder where**

[1] **Try this link to download SAGA binaries: https://sourceforge.net/projects/saga-gis/files/**

"saga-9.3.2_x64" was unzipped (this folder must be kept in your PC).

4



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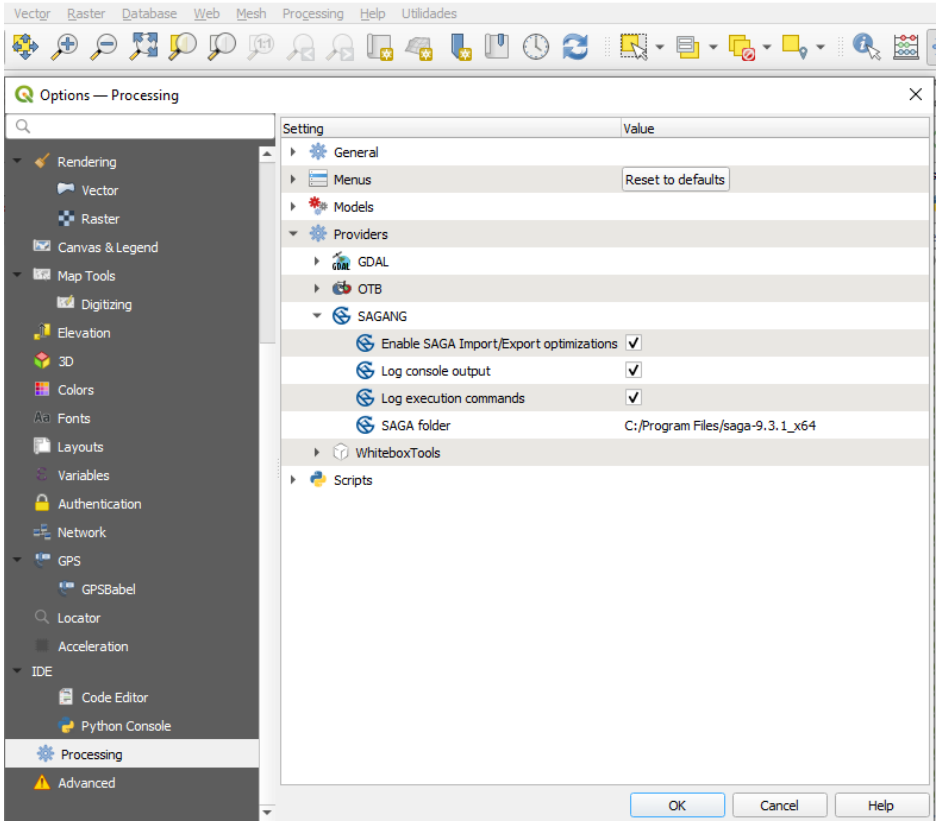
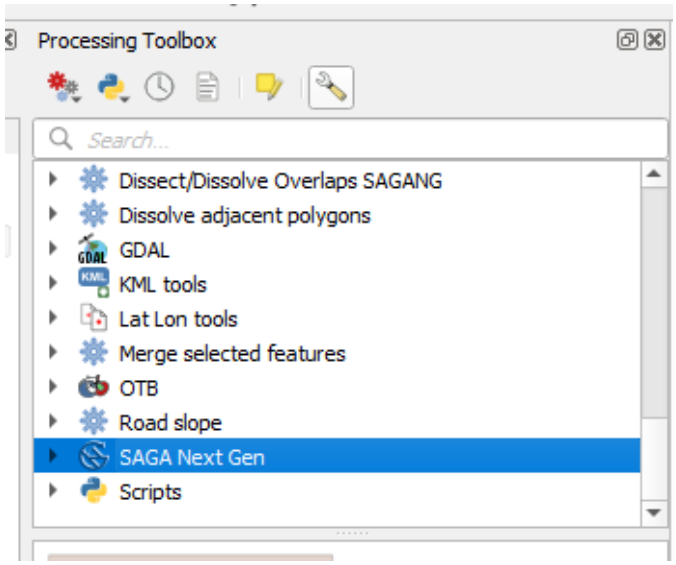
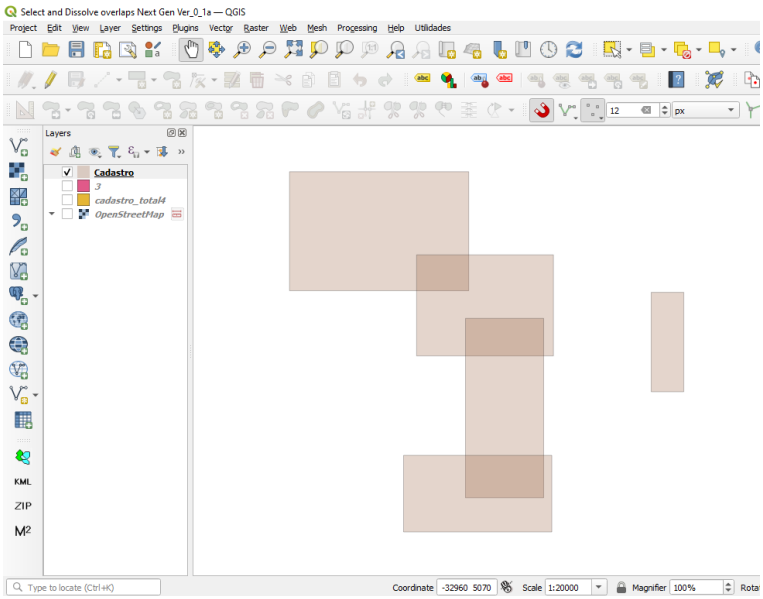


Check if your SAGA Next Generation installation is working correctly

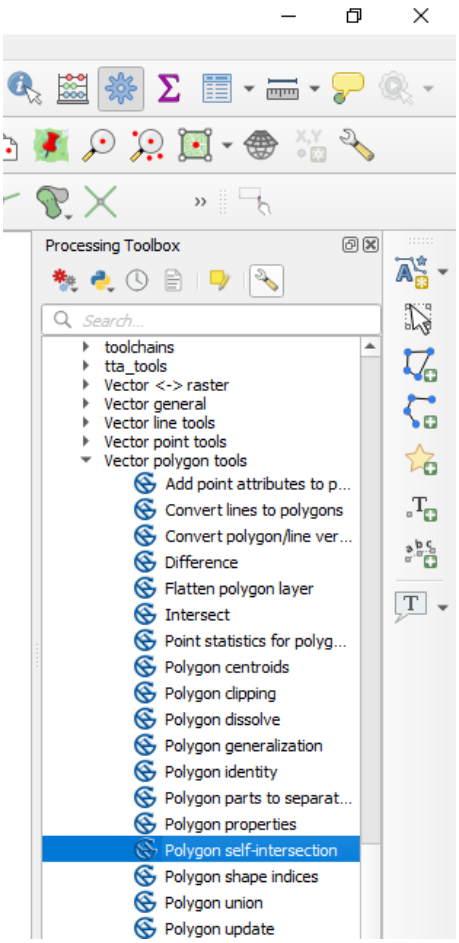
1 – check if there is an entry for SAGA Next Gen in the Processor Toolbox;

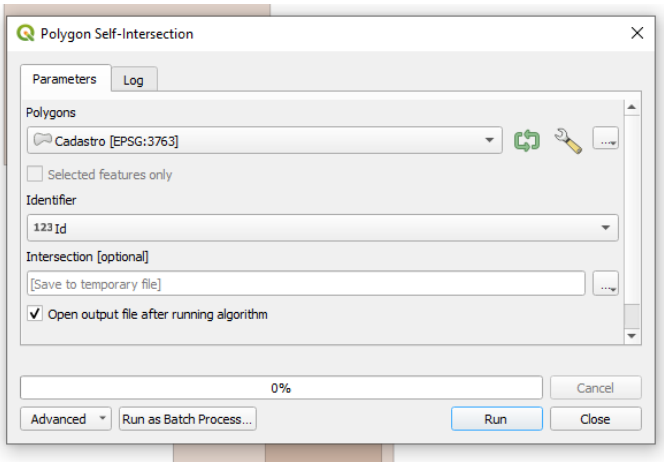


2 – Choose (or create) a polygon shapefile with a few overlaps, like the following image:



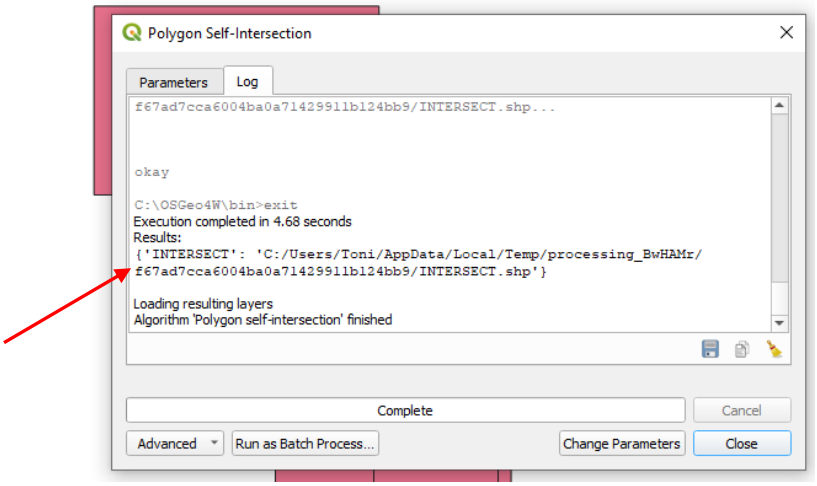
3 – find the "Polygon self-intersection" in the "SAGA Next Gen" toolbox, and run this script by clicking twice on it:

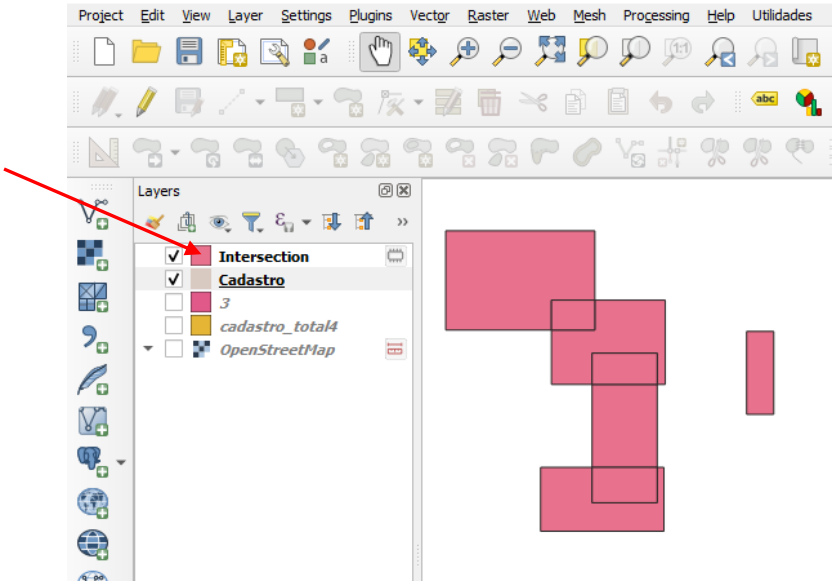




Select the polygon layer with some overlaps, select any identifier field, and RUN the script;

4 – If SAGA Next Generation plugin is correctly installed, then you should get a LOG similar to the one in the image below, and a new shapefile called "Intersection" should have been created and placed in the list of layers of your QGis project:





4. **Other plugins that may be of interest to you:**
   A) "Fill gaps" - This plugin is intended to fill gaps and holes in a polygon layer.
   B) "Buffer Without Overlaps" - This plugin creates a buffer around features of a given type, without overlaps.

C) "Change NODATA" - This plugin allows you to quickly and efficiently change the NODATA value of rasters.
D) "Dissolve Adjacent Polygons" - This plugin dissolves polygons adjacent to other polygons, according to user-chosen options.
E) "Merge Selected Features (Processing)" - Merge selected features in a polygon vector layer, much faster than the QGIS tool.
F) "Polygon Cut" - This plugin allows the user to perform polygon cutting in a polygon layer using one or more polygons from another polygon layer.
G) "Road Slope Calculator" - This algorithm is used to calculate the longitudinal slope of forest paths and roads, based on a 2D line vector layer and a DEM (Digital Elevation Model).