Corridor Ordering with Dijkstra's Algorithm on QGIS

The following guide includes examples of the QGIS Corridor Detection plugin application together with process documentation.

Plugin update: 16/12/2020

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0. System check

After the installation of the plugin. See below link,
https://github.com/meteergen/Corridor-Detection/blob/master/README.md
Open QGIS and check if the plugin is correctly installed:

No Python errors should appear while opening QGIS or installing the plugin. If this is not true, please check that the installation procedure was performed correctly.
(Sometimes, due to the system Python Path or uncorrected dependencies installation some unexpected error may occur. If these are not solved by repeating the installation procedure of both plugin and dependencies, please report the issue to the authors)

1. Create a valid input layer

The plugin accepts only Linestring or Multilinestring geometry for input layer.

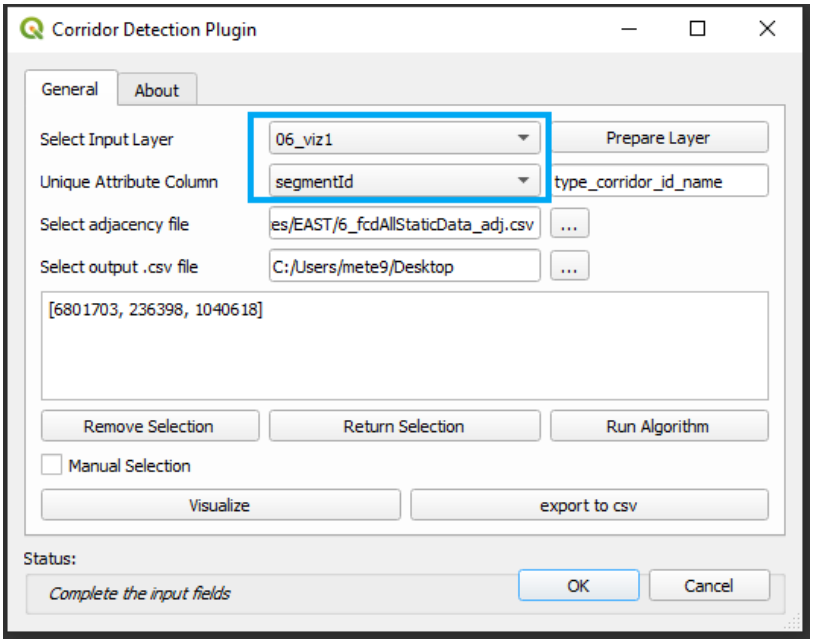
Road Network Data

A demo for input line or Multilinestring geometry shapefile (gpkg etc). Note that, there must be also an adjacency file for input. The data must have loaded to QGIS interface beforehand.

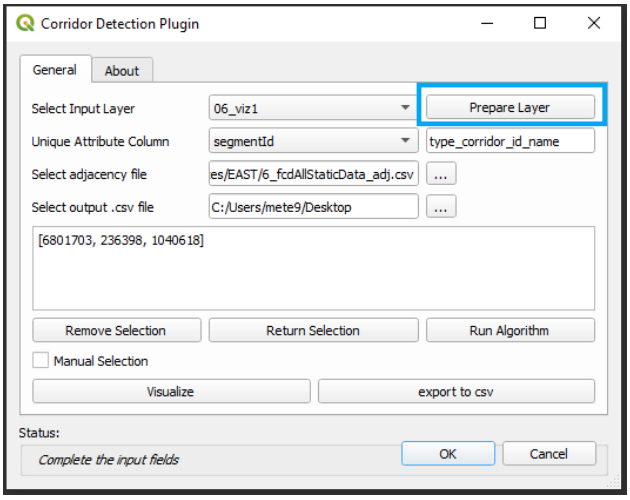
(example road network data)

2. Plugin options and run

First, select the Input layer and its attribute column which has unique values.



When the input layer selected. Clicking the “Prepare Layer” button is suggested. This way, it is possible to adjust a proper symbology for the next processes.



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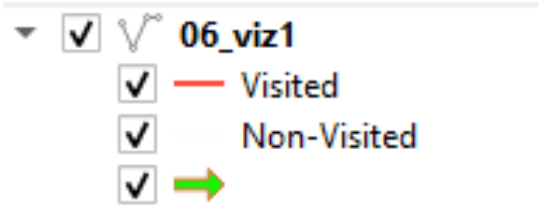
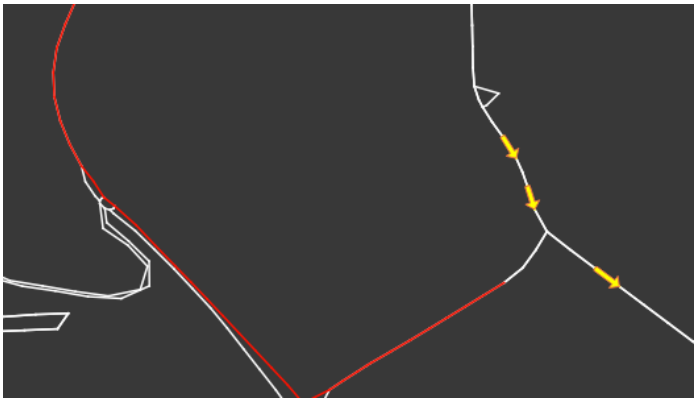
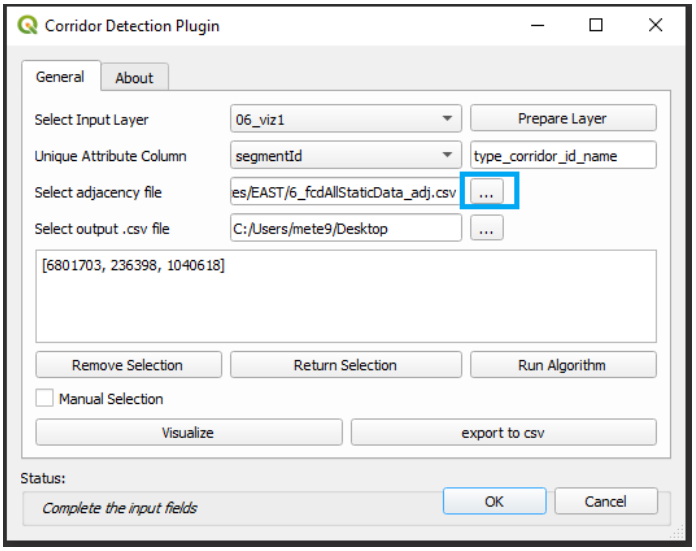
The result layer symbology will be like,

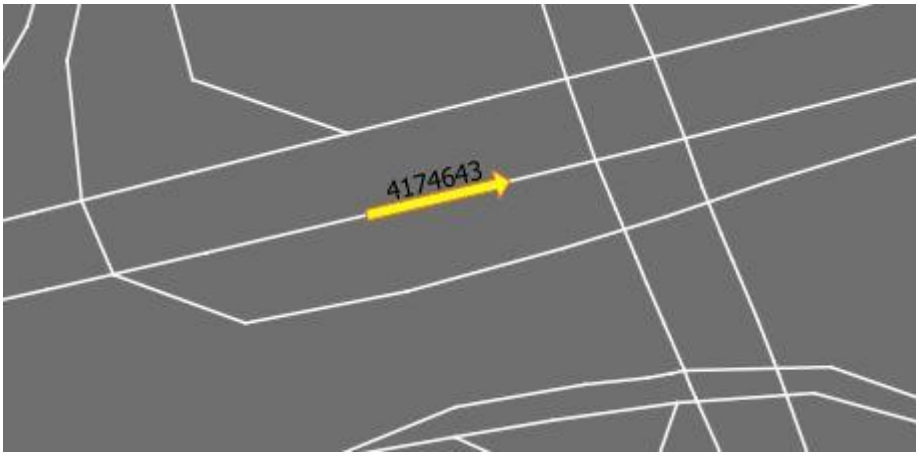




Then, load the related adjacency matrix file of the layer by clicking the ‘Select adjacency file” tool button.



After that, you can start to select segments with mouse left click.



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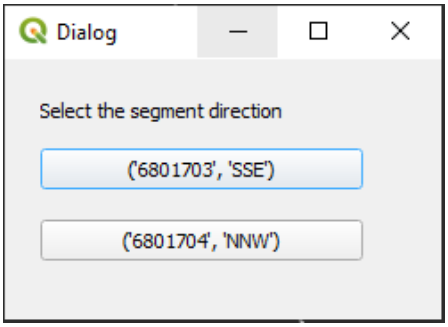
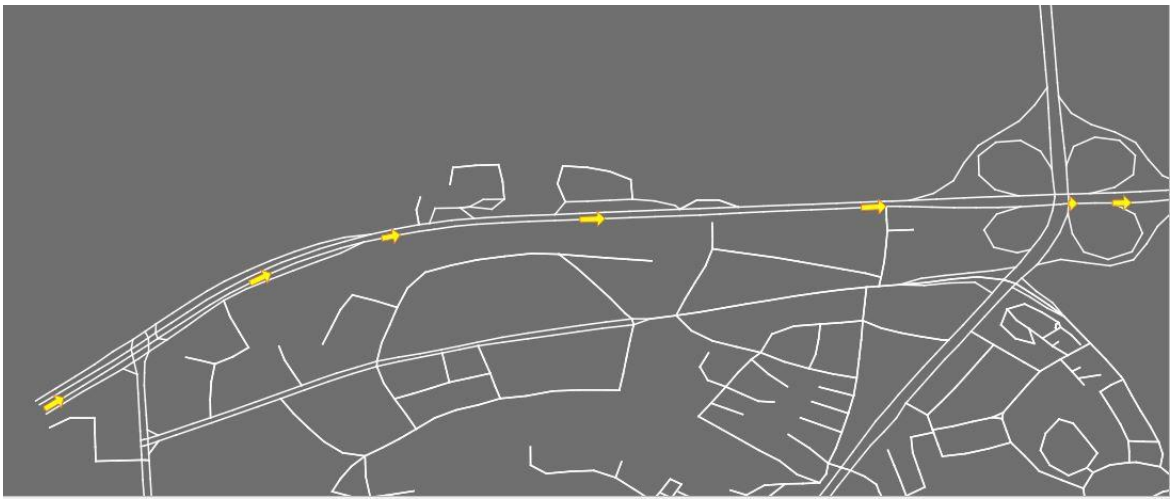
If there is a twin segment in your first selection. There will be a pop up to select a segment considering its direction.



The directions will be on cardinal coordinates and you might have gone for the wrong, do not worry. **Right click** to the segment for changing its direction.

Select the one you want and go on with selection at least one more (or as many as you want). Note that, other selection directions **will depend on the previous selection direction** automatically.



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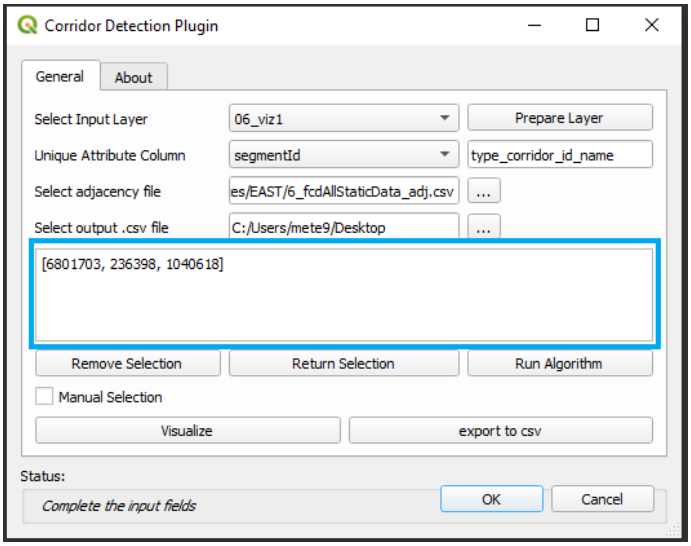
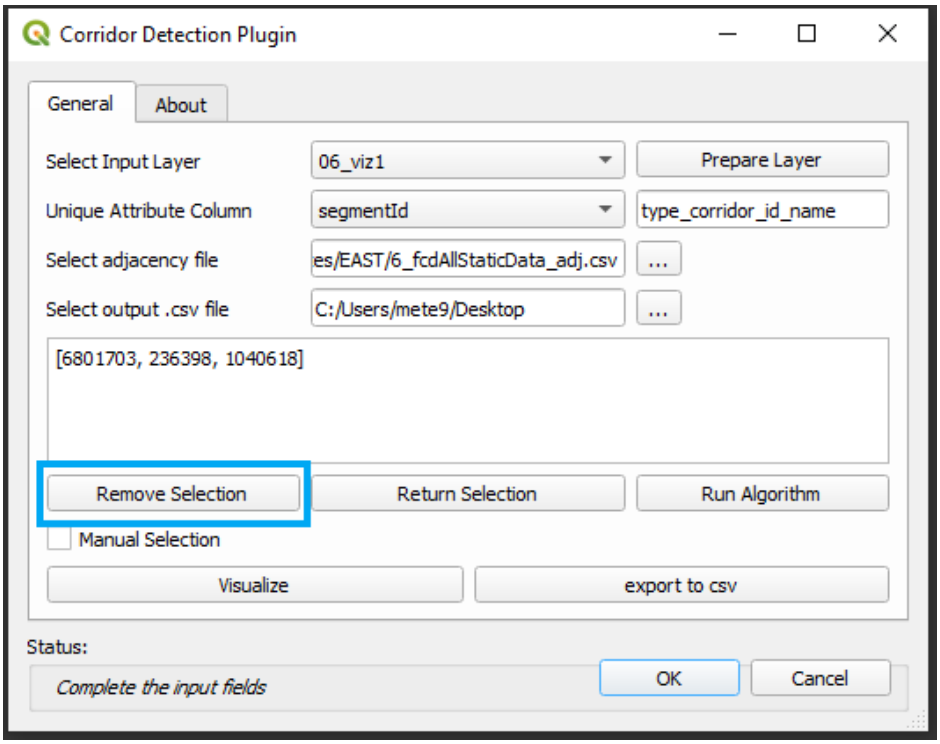
The selections will be shown on the plugin interface for the unique attribute values,



If you want to remove the selected segment. Just **left click on it again** and it will be deselected.

If you want to remove all selections, click on remove selection button,



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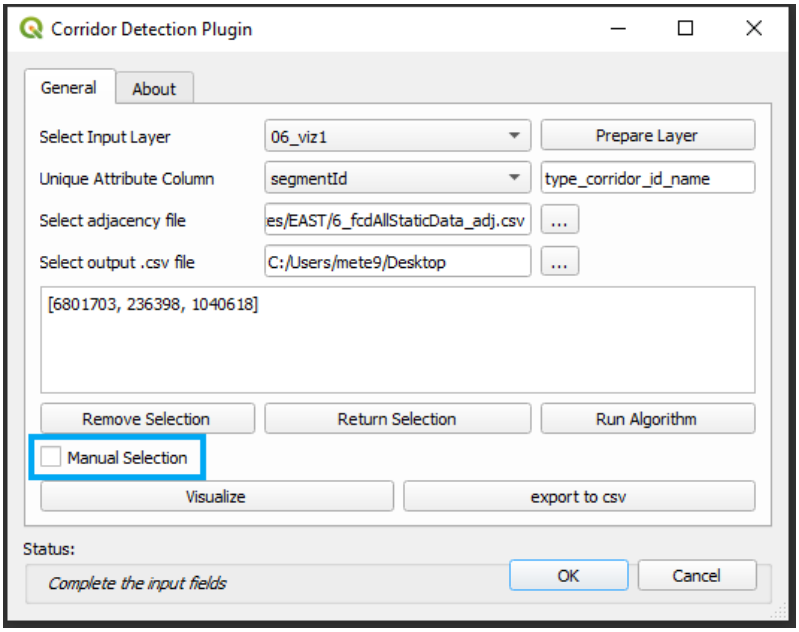
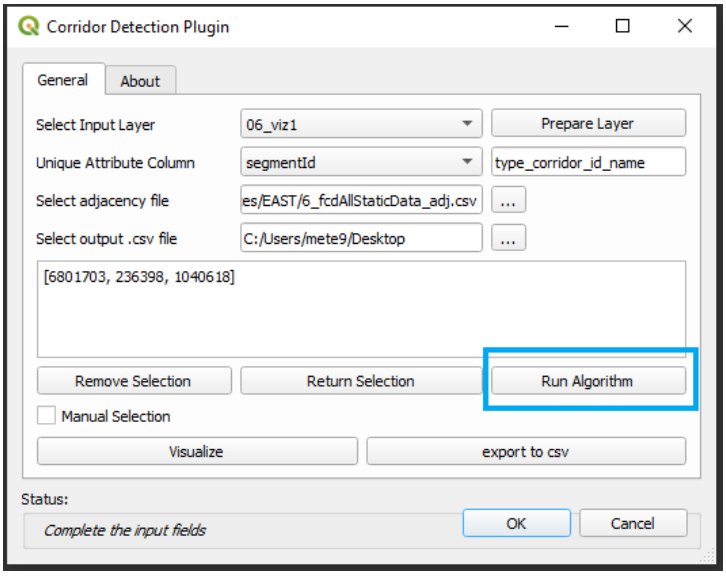
For manual direction selection, check Manual Selection checkbox. In this way, you will be able to select the direction manually for each selection. (e.g. Could be used for reselection of corridor for aisle.)



If you are done with the selections, you can press '**Run Algorithm'** to find the path (corridor) for selected segments and its directions via using Dijkstra's Algorithm.



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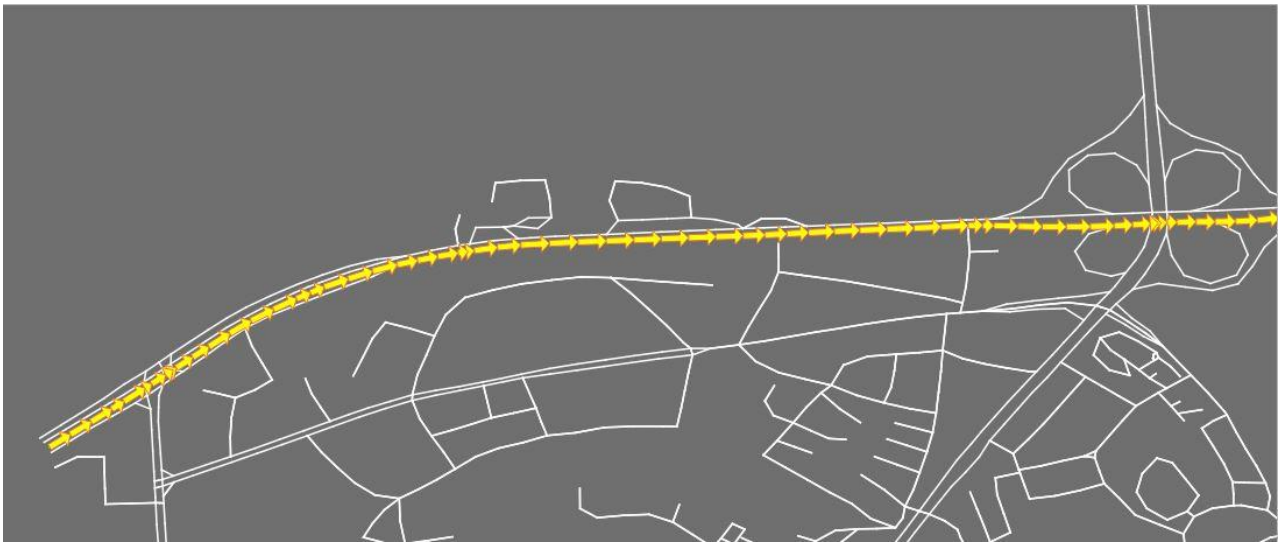
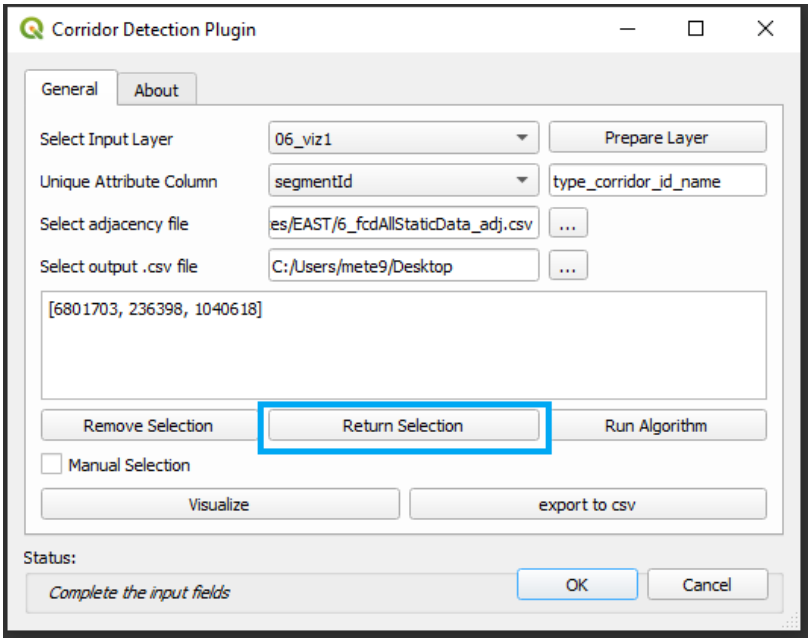


There might be chance you will not like the result. To return to the selection, just press **‘Return Selection’** button,



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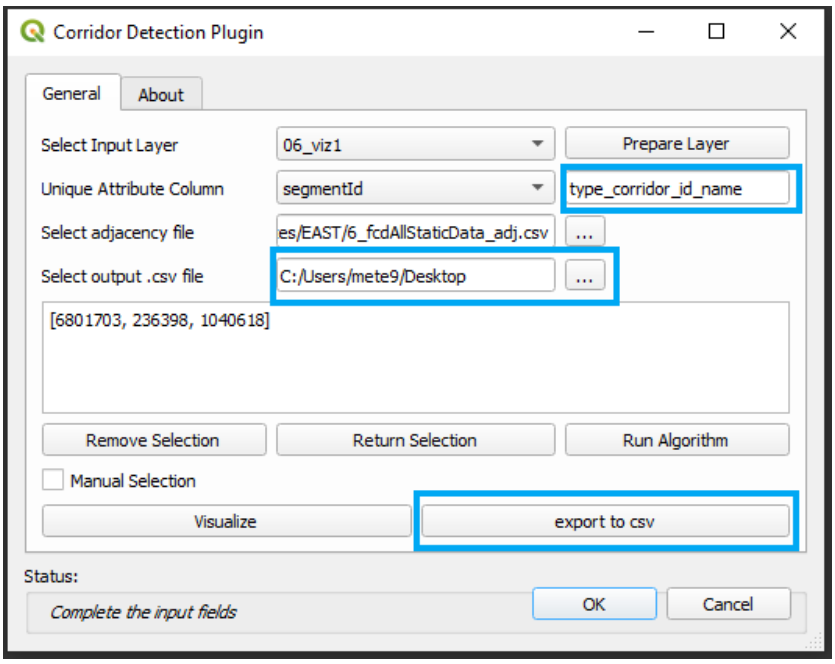
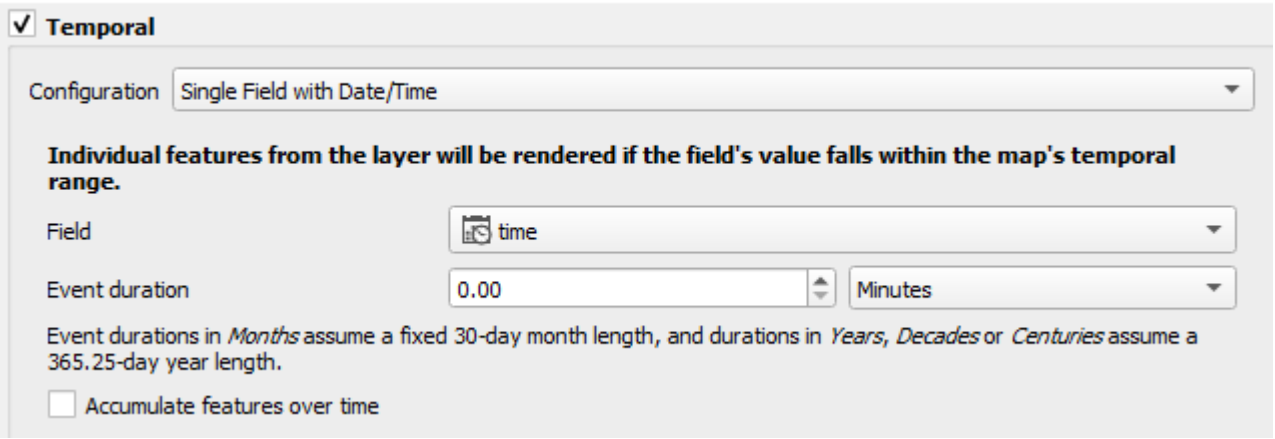
You may want to export the results. For that, select the output document, give it a name then click to the export to csv.



After exporting selected segments as ordered to the csv considering its direction (flow), they will appear red on the interface.

Lastly, you might want to experience how it will look like if the ordered corridors animated. Click visualize button after running algorithm. After all, open Temporal setting from the layer, select **Single Field with Date/Time**. Select the **time fie**ld which has generated when you click **prepare layer** button previously.



Then open the **Temporal Controller** and adjust the time interval and press play.

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