11th International Space Syntax Symposium

Workshop 2: 'Space Syntax Toolkit' for QGIS – introduction and recent developments

**Task 4: Connecting and analysing the various results – Gate Transformer and Space-movement correlation analysis**

**Description**

This exercise introduces the Gate Transformer tool and the QGIS spatial join functions to produce a simple space-movement correlation analysis. This exercise requires the pedestrian count dataset, the OS Meridian2 line analysed dataset and the catchment network dataset from the previous exercise.

1. **Prepare the project**
   1. Make the Pedestrian counts layer visible
   2. Make the OS Meridian2 analysed road centre line visible
   3. Make the Catchment network layer visible
2. **Run Gate Transformer – Resize**
   1. The aim of this step is to resize the movement gates so it has a constant length for visualisation
   2. Start the "Gate transformer" tool by clicking on the gate transformer button or go to "SSToolkit" -> "Gate Transformer"
   3. Select the “Pedestrian count” layer
   4. Click on the "resize" radio button
   5. Set the length to "25" metres
   6. Click ‘Transform’
   7. This resizes the movement gates to the same length of "25" metres
3. **Visualise the Pedestrian counts layer**
   1. Start the "Attributes Explorer" SST tool
   2. Select the newly created join layer
   3. Select "Symbology" tab
   4. Select the "Pedmov" attribute
   5. Set colour range as "Classic"
   6. Increase the line width to 0.5
   7. Set Intervals to "Equal Intervals"
   8. Click the "Apply Symbology" button
   9. This is the standard display for the pedestrian movement data
   10. You can add arrows by going to the ‘Style’ panel of the layer
   11. Save an image of the map window
4. **Run Gate Transformer - Rotate**
   1. The aim of this step is to rotate the movement gates so it intersects with the segment layer
   2. Start the "Gate transformer" tool by clicking on the gate transformer button or go to "SSToolkit" -> "Gate Transformer"
   3. Select the “pedestrian count layer”
   4. Click on the "rotate" radio button
   5. Set the angle at "90" degrees
   6. Click ‘Transform’
   7. The gates are now rotated by "90" degrees.
   8. If the gates do not intersect with the segment layer, rotate again with a different angle until it intersects.
   9. Make sure the gates intersect the correct corresponding segment.
5. **Pedestrian count gate and space syntax measures spatial join**
   1. The aim of this step is to join the pedestrian count gate data layer and the OS Meridian2 analysed map
   2. Go to the "vector" menu at the top - "data management tools" - "join attributes by location"
   3. Select the “pedestrian count” layer as target layer
   4. Select the “OS Meridian2 analysed” layer as join vector layer
   5. Check the intersect button
   6. Leave the other parameters as default
   7. Press run to create a temporary join layer
   8. The temporary layer contains both the movement data and the space syntax measures where the two intersect
6. **Pedestrian count gate and catchment analysis spatial join**
   1. The aim of this step is to join the pedestrian counts gate data layer and the catchment analysis map
   2. Go to the "vector" menu at the top - "data management tools" - "join attributes by location"
   3. Select the “pedestrian count layer” as target layer
   4. Select the “catchment network layer” as join vector layer
   5. Check the intersect button
   6. Leave the other parameters as default
   7. Press run to create a temporary join layer
   8. The temporary layer shows both the movement data and the distance to tube stations where the two intersect
7. **Statistical scatterplot analysis of two variables**
   1. Start the "Attributes Explorer" SST tool
   2. Select one of the newly created join layer
   3. Select "Charts" tab
   4. Select "Scatter plot" button
   5. Under numeric attributes or X-axis, select "INT" (or the name of a tube station)
   6. Under Y-axis, select "Pedmov"
   7. The scatterplot shows the regression line, the equation of the line and the r2 (goodness of fit)