

Exercise 8: Creating Thematic Maps with Map Services

Goal

The goal of this exercise is to create thematic map services.

Part 1: Preparing the workflow

Open QGIS and add the "eu_countries_them.shp" available in the geodata_eu folder from your workspace.

Part 2: Authoring and Publishing Thematic Layers

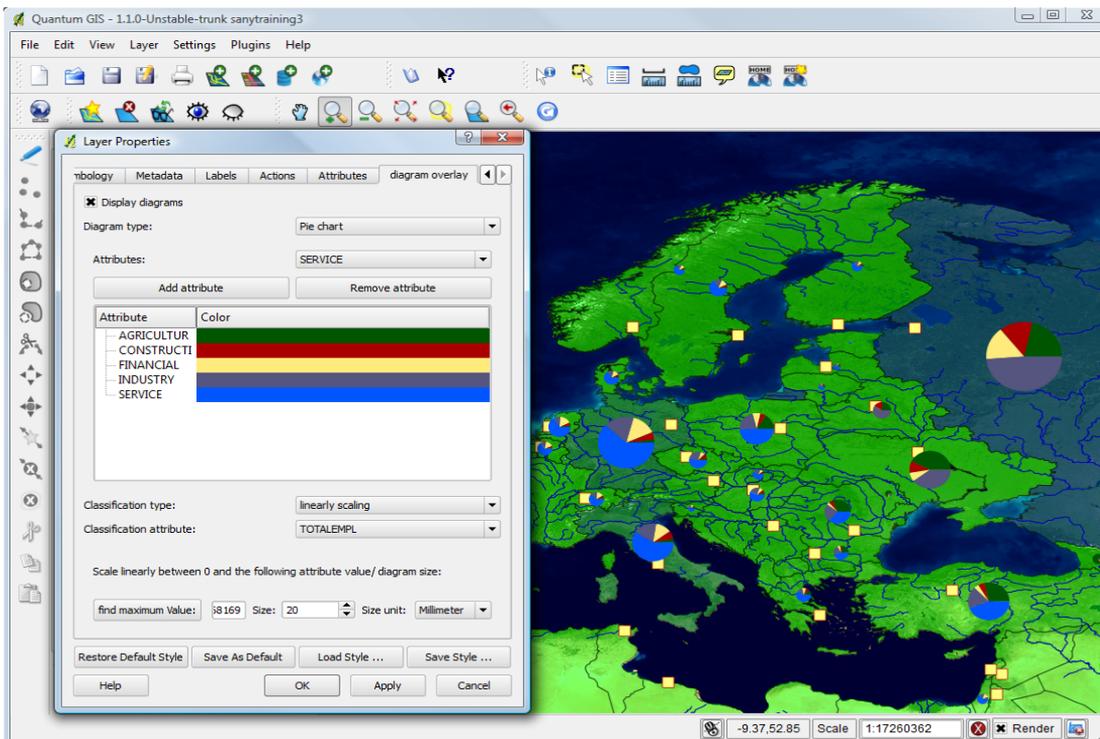
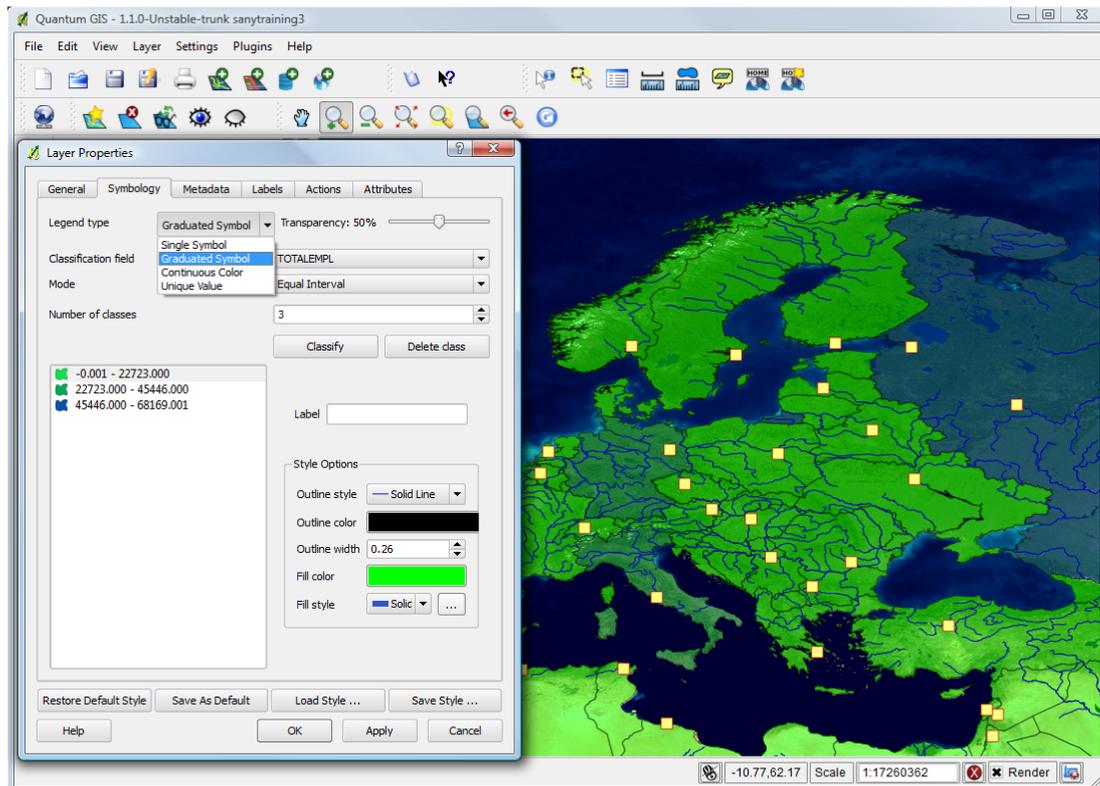
Symbolize the chosen thematic data in QGISPublishToWeb. This time choose the option Graduated Symbol for the Legend type (in the Symbology tab). Set the other parameters according to your choice in order to create a choropleth map.

The QGISPublishToWeb version also has support for diagram symbolization. To activate it, go to the plugin manager and add the "diagram overlay" plugin.

Open the layer properties dialogue again by double clicking on the layer legend, and notice that a new tab entitled "diagram overlay" appeared. In this tab you may enter the parameters for diagram symbolization. Experiment with the various possibilities for creating diagram and proportional symbol maps and do not forget to enable the checkbox "Display Diagrams".

Note: Only numerical attributes may be used for scaling. The images from the second page may serve as reference.

Good to know: The diagrams are placed automatically in the centroids of the corresponding geometries to which the thematic data are attached. Optionally, if you would like more control over the placement of the diagrams, you can define points for the placement of diagrams. Your thematic data can be joined to these points and as consequence you can control the placement of the individual diagrams. Additional editing of the point locations (if required) can also be performed in QGIS.



Finally, use the Publish to Web plugin (as in the last exercises) to export the admin.sld needed for server configuration and set up your local server with the exported SLD. Check the results either in your map or in QGIS.

Part 3: Extended Diagram Symbolizer Options

Open the exported “admin.sld” file with a text editor and understand the Styled Layer Descriptor associated with the eu_countries_them layer. You will notice several rules. Identify the rule containing the DiagramSymbolizer (the last one) and ignore the other rules for the moment. Study the syntax and structure of the Diagram Symbolizer. You may experiment with the various parameters and even delete a category. Observe how the changes reflect in the visualization by zooming in and out.

Now we want to separate the choropleth map and the diagrams in two different styles. Extract the rule containing the Diagram Symbolizer and paste it inside a new UserStyle (you may use the existing UserStyle definition as template). Place this new UserStyle element also inside the UserLayer defined for the eu_countries_them, and change the name of the Style to “pies”.

Test the new map server configuration. The pies should not be visible any longer (as they were placed in a new UserStyle). Test the new style by adding the “eu_countries_them” layer, but this time choosing the new “pies” style.

Finally, you may use some additional options for diagram symbolization:

- gap:

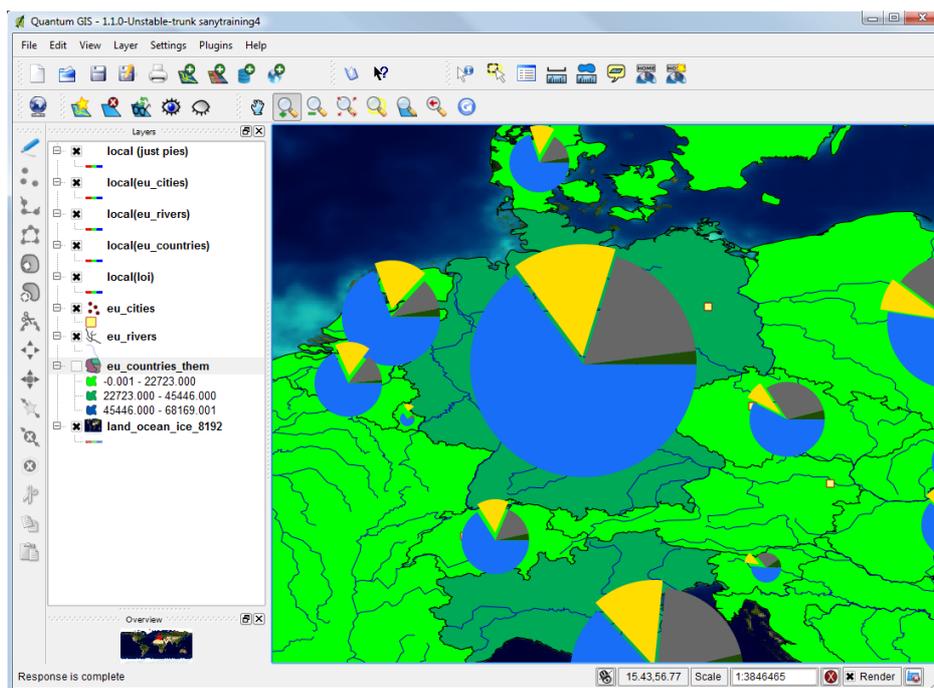
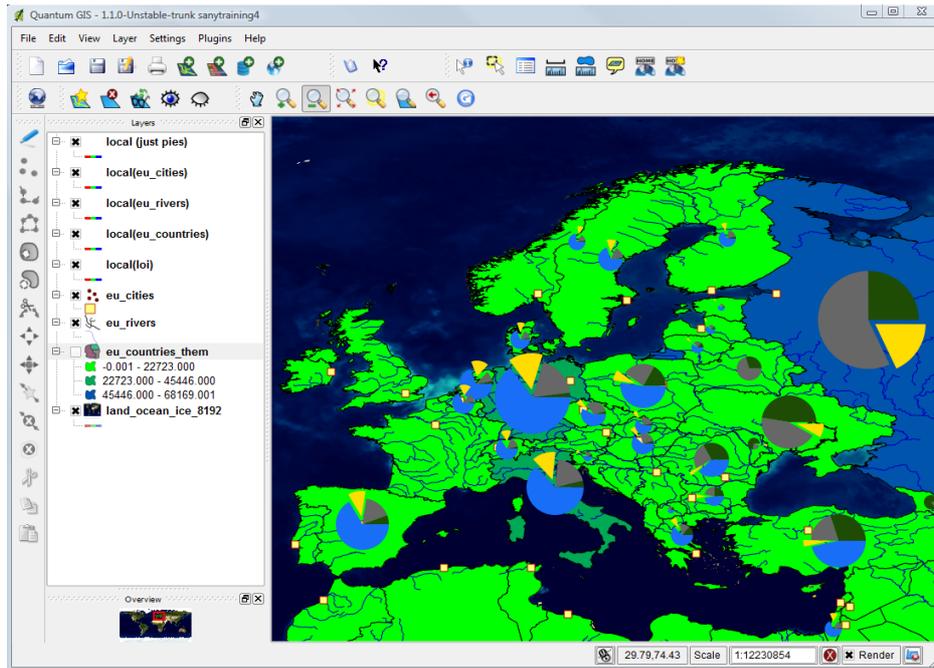
For exploded pie charts, it is common to highlight sectors with a gap. This can be done with the <Gap> element as a child element of <Category>. To create a gap for a sector with 10 pixels we add the Gap element inside the Category element, as shown below:

```
<Category>
  <PropertyName>FINANCIAL</PropertyName>
  <SvgParameter name="fill">#FFDD00</SvgParameter>
  <Gap>10</Gap>
</Category>
```

- scale denominator:

Use the elements <MinScaleDenominator>, <MaxScaleDenomintor>, <MinScaleSizeMultiplication> and <MaxScaleSizeMultiplication> to adapt the diagram sizes automatically to the current zoom level. Experiment with the elements to find the optimal setting for your map. Here follows an example:

```
<Diagram xmlns="http://www.opengis.net/sld">
  <Scale>
    <MinScaleDenominator>4000000</MinScaleDenominator>
    <MaxScaleDenominator>10000000</MaxScaleDenominator>
    <MinScaleSizeMultiplication>3</MinScaleSizeMultiplication>
    <MaxScaleSizeMultiplication>1</MaxScaleSizeMultiplication>
  </Scale>
  ....
</Diagram>
```



Discussion of the Exercise

You now have the know-how for creating thematic maps for any Spatial Data Infrastructure.

Links:

- As further guidance, you may also consult the tutorial reader from: http://karlinapp.ethz.ch/qgis_wms/giscience2010/QGISmapserverTutorialatGIScience2010_reader.pdf.