

## EuroOffice Map Chart

EuroOffice Map Chart is an OpenOffice.org and EuroOffice extension by MultiRacio Ltd. that makes it possible to visualize geographically related statistical data. The EuroOffice Map Chart is such an extension which is able to carry out these tasks in an easy and creative way being integrated into the OpenOffice.org Calc.

The exact names of geographical regions that EuroOffice Map Chart Professional recognizes are listed on separate pages: Europe , Hungary , the World , and United States.

The division of smaller territories follows the guidelines of the NUTS system which is the official statistical distribution system of the European Union.

We outline the procession of the making of the map diagrams in detail onto the professional variant it; the free variant works likewise; there is a limitation in the types of the preparable diagrams only (at the countries smaller areas, in the look of the substituent names and the unique icons).

## Creating a map chart

### Laying out the data

The first step of creating a map chart is creating a spreadsheet with the data that you would like to visualize. In our example we will use the following data:

	Color	Bar 1	Bar 2	Bar 3
France	10	1	2	3
Italy	20	3	2	1
Germany	30	3	3	3

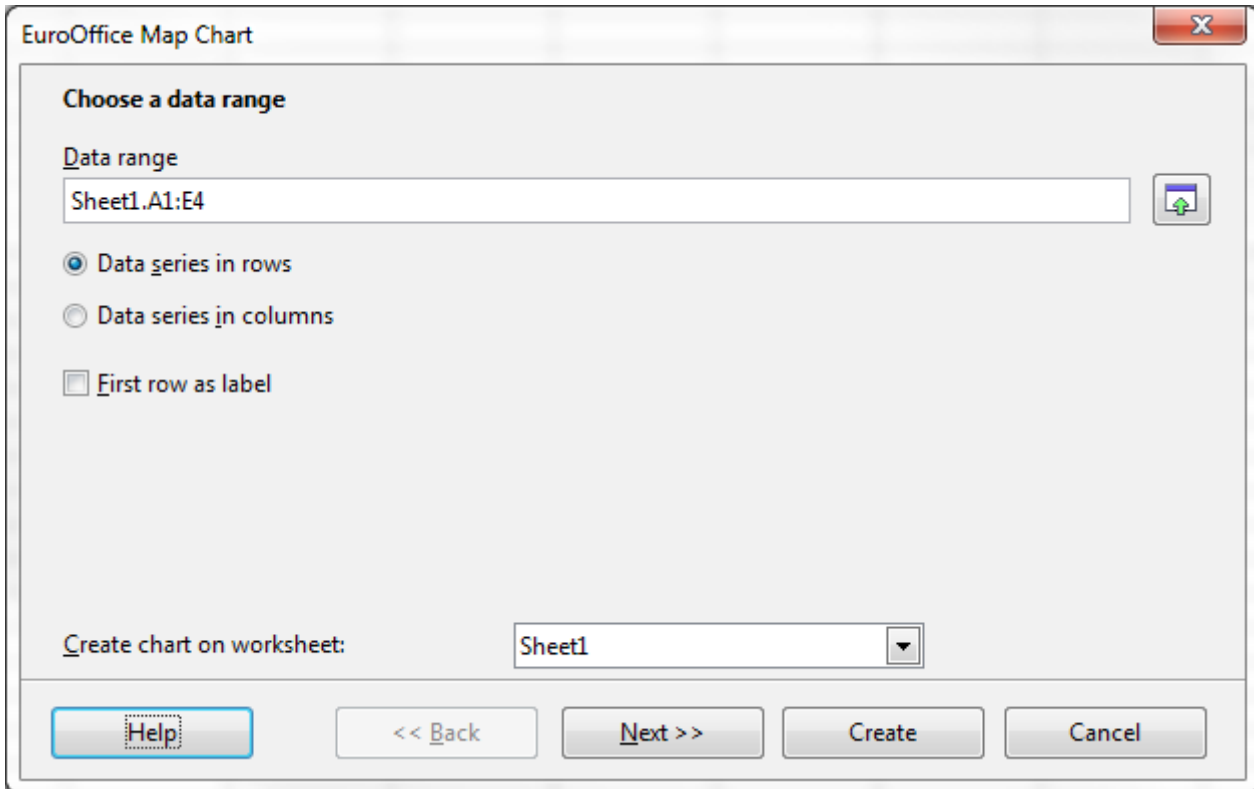
EuroOffice Map Chart is flexible enough to handle different layouts of data as you will see later in this walkthrough, but this default layout is convenient for many applications.

### Starting EuroOffice Map Chart

Upon installation EuroOffice Map Chart adds a new menu item to the Insert menu of OpenOffice Calc right below Chart... labelled EuroOffice Map Chart. EuroOffice Map Chart can be started with this menu item. Upon starting EuroOffice Map Chart assumes that you would like to create a map chart based on the currently selected data. If only a single cell is selected, EuroOffice Map Chart will explore the cells around this single cell to guess at the data range.

If you have previously created any map charts (even in previous runs of the application), the EuroOffice Map Chart dialog will be prepopulated with the settings from your last chart. This way you can practically tweak the default settings to your liking.

## Dialog page 1: Choosing the data range



The screenshot shows the 'EuroOffice Map Chart' dialog box. The title bar reads 'EuroOffice Map Chart'. The main area is titled 'Choose a data range'. It contains a text box for 'Data range' with the value 'Sheet1.A1:E4' and a range selection icon to its right. Below this are three radio buttons: 'Data series in rows' (selected), 'Data series in columns', and 'First row as label' (unchecked). At the bottom, there is a 'Create chart on worksheet:' label and a dropdown menu showing 'Sheet1'. The bottom of the dialog features five buttons: 'Help', '<< Back', 'Next >>', 'Create', and 'Cancel'.

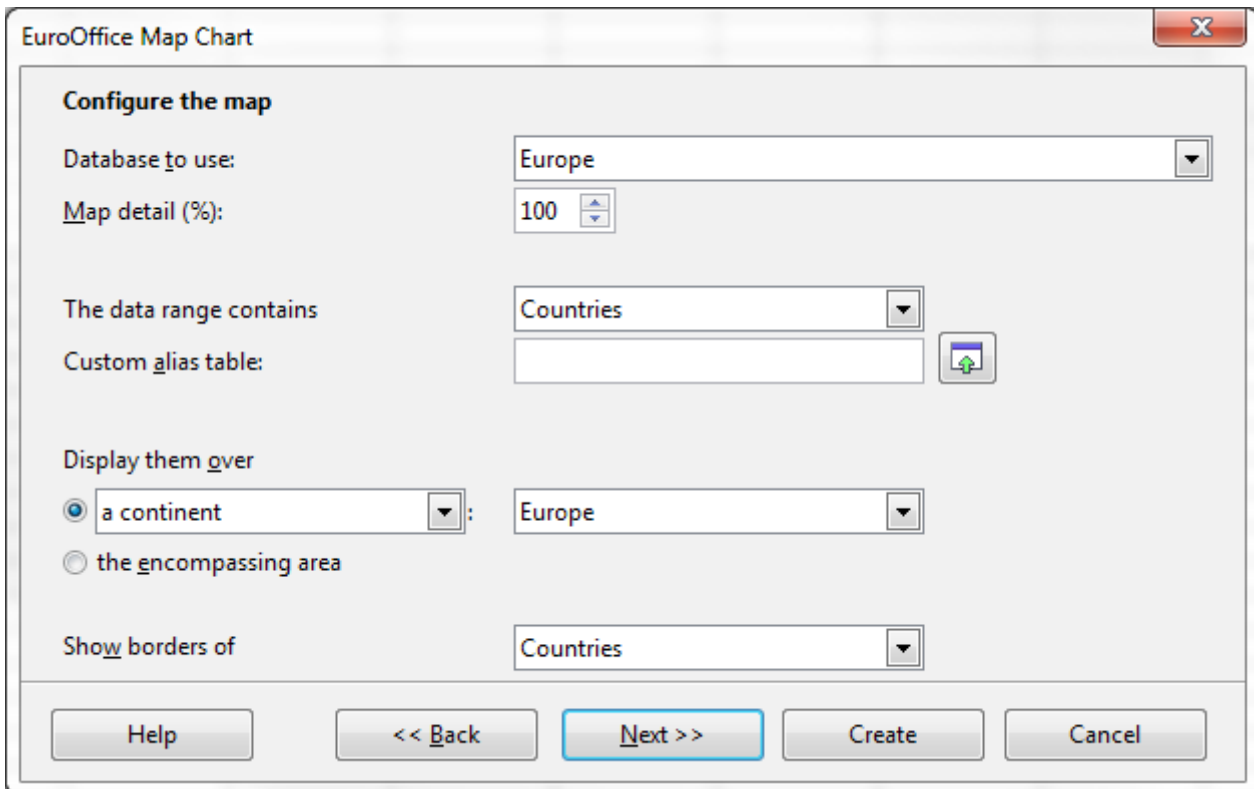
When the dialog is opened, EuroOffice Map Chart tries to guess the data range based on which cells are selected, but you can set a different data range on this page. You can either enter the range using the syntax of the formulae (e.g. A1:G7), or using the mouse after clicking the range selection button to the right.

Choose **Data series in rows** if the data associated with an area is placed horizontally in the row of the area (such as in our example). Choose **Data series in columns** if the data associated with an area is placed vertically in the column of the area.

Check **First row/column as label** if the first row/column of the data range does not contain data for an area, but instead contains labels for the data in those columns/rows. In our example this checkbox has to be checked if the first row is included in the data range, because the first row contains the labels "Color", "Bar 1", "Bar 2" and "Bar 3". These labels will be displayed in the legend.

The combobox at the bottom of the page can be used to pick which sheet the chart should appear on. It defaults to the currently selected sheet.

## Dialog page 2: Configuring the map



Use this page to select which **database** to use and what kind of areas to display. There are four databases supplied with EuroOffice Map Chart.

The first database contains the United States of America with its 51 States, so you can display them over the USA.

The second one is a detailed map of Europe, containing countries at the topmost level, NUTS 1, NUTS 2 and NUTS 3 regions below (NUTS (Nomenclature of Territorial Units for Statistics) is a standard for referencing the administrative divisions of European countries for statistical purposes.) and 73 of the largest European cities at the lowest level. They can be combined in a variety of ways. You can for example display statistical data for German districts (which are NUTS 3 regions) in a single German state (which is a NUTS 1 region).

The third one supplied database is specific to Hungary. It contains the map of Hungary at the topmost level, then maps of regions (which are actually NUTS 2 regions), counties (which are NUTS 3 regions) and all settlements (3168 as of 2005). It also contains an overlay of Lake Balaton which can be turned on and off.

And the last one is for the World. There are two ways for displaying data on a map; you can choose the World or a continent as a basic (parent) map.

Once you have selected the database to use, the next setting can be used to reduce the detail in the map. A lower detail level can result in an oversimplified map, while increasing the **detail** level increases amount of time and memory needed to draw the map. It can make displaying slow on older computers. Note that different databases may come in different levels of inherent detail. For example the database for Europe is very detailed and for on-screen display a setting of 80% is

appropriate in most cases. The database for Hungary however is less detailed, and a setting of 100% is recommended.

The combobox after **The data range contains** should be used to select the level of the regions that are mentioned in the data range. In our example we have to select "Countries", because France, Italy and Germany are countries.

The **Custom alias table** can be used to give alternative names to regions. It can be useful for creating map charts in a language different from English. Each line in this data range represents an alias definition. The first cell of the alias definition is the official name of a region as it is recognized by EuroOffice Map Chart (for the European database the official names for every region are its English and native names). The cells to the right each contain an alias for this region.

For example if you wish to be able to reference France as "French Republic" and "République française", you would use an alias table such as this:

France	French Republic	République française
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If it is more convenient, you can also enter each alias definition on a separate line:

France	French Republic
France	République française

The Custom alias table can also be used to define custom regions that are made up of already existing ones. If you give the same alias to two or more regions, the alias name will correspond to a region that is the union of the original regions.

The Custom alias table is completely optional. Just leave this field empty if it is not needed.

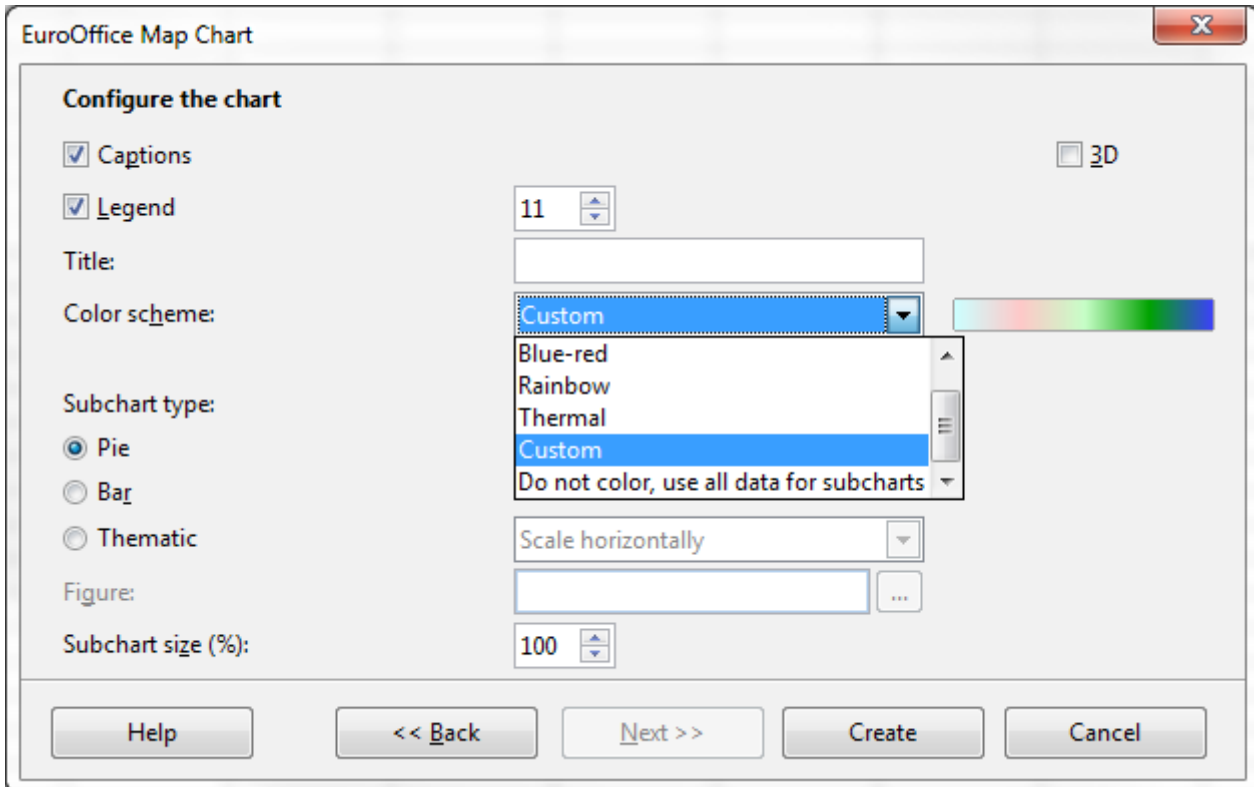
Next you have to select the region to be used as background to the regions in the data range. It is selected through the controls after **Display them over**.

You can either pick a specific region by first selecting a category (such as "a country") then one of the regions in that category, or you can select to just use the rectangular area encompassing the regions mentioned in the data range. In the former case the region selected will be displayed in white (or the color appropriate for the color scheme), while in the latter case no regions will be automatically displayed. You will have to turn on the Show borders of option to see maps of the nearby regions.

The **Show borders of** option can also be used in case a region is specified as background to overlay additional detail. Note that the choice of level for this option will be the lowest level of region to draw borders for. If you choose NUTS 2 regions for example, thin borders will be drawn for NUTS 2 regions, thicker borders for NUTS 1 regions and even thicker borders for countries (and no borders for NUTS 3 regions).

Databases can include a number of **overlays**. These are simple colored shapes that will appear over the map. One example is the overlay of Lake Balaton in the database for Hungary. To turn overlays on and off, click on them while pressing and holding the Ctrl key. (The list of overlays does not appear if the selected database does not include any overlays.)

### Dialog page 3: Configuring the chart

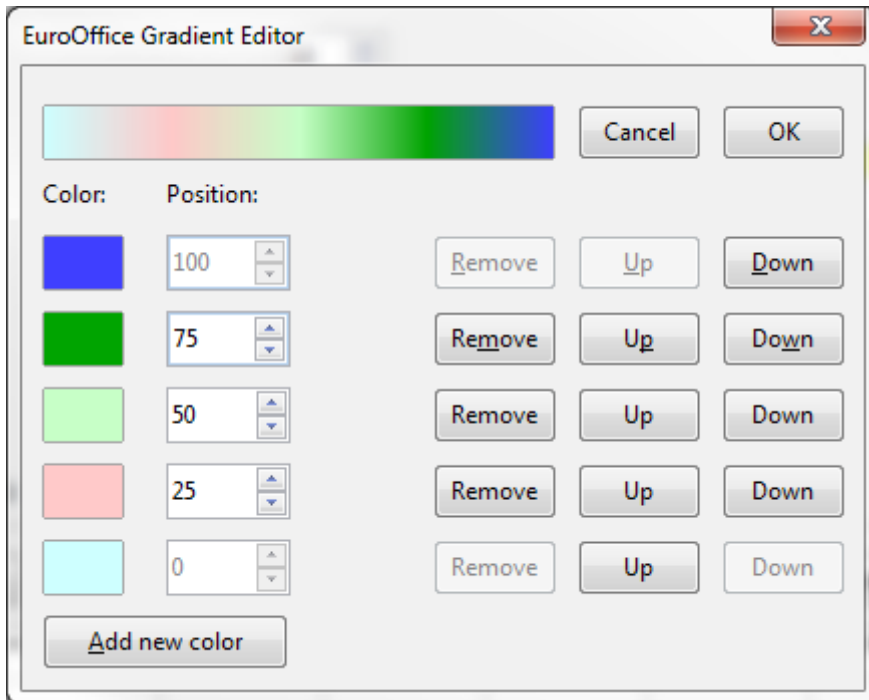


This page lets you configure the presentation of the chart.

The first checkbox enables or disables **captions**. If enabled, the names of the regions will appear on the map chart in outlined type. They will appear as entered in the data range. This means that if you are using aliases, the alias will be used as caption.

The checkbox labelled legend enables or disables the display of a legend. If enabled, a color scale, and a color key for the subcharts will appear in the top right corner of the chart. A special feature is that you can choose the number of a legend's scale if you want it. The basic is 11, but you can set it between 2 and 11. The labels in the legend are taken from the data range if the **First row/column as label** checkbox was selected on the first page.

For a **color scheme** the choices available are Greyscale, Blue-red, Rainbow, Thermal and Custom. You can also select "Do not color, use all data for subcharts", in which case the regions will not be colored, and the first column (or row if the data series are in columns) after the region names will be included in the subchart. If you choose Custom, in a next dialog you can select the proper colors you want to use from a palette or you can directly add it as an RGB (Red Green Blue) color.



EuroOffice Map Chart can not only visualize a single value associated with every region by coloring it, but can also place **subcharts** on the regions to visualize an associated data series. Three types of subcharts are available in EuroOffice Map Chart Professional. Pie charts, bar charts and thematic charts. Pie and bar charts visualize the values following the value used for coloring by building a pie or scaling bars. They should be familiar to anyone who has used these classical charts. You usually need more than one data entry for every region for these subcharts to make sense, but the size of the pie also corresponds to the sum of its "slices". For pie charts the absolute value is taken from negative values, while bar charts can more naturally display them.

**Thematic charts** on the other hand only visualize a single value by scaling an image accordingly. You can select any image file type that OpenOffice Draw can open (including ODG, SVG, JPEG and tons more). You can pick if you would like it scaled horizontally, vertically or both.

Tip: On thematic subcharts the image will be displayed in original aspect ratio for the region with the maximal value. Say you want to create a chart about how tall the tallest man in each country is. You should look at your data, find the maximal height, draw a man that is of appropriate proportions for that height, and use this drawing as the thematic figure. Alternatively, if you do not know the maximum in advance, you can take a "safe maximum" (say 4 meters tall), draw a figure for this value, and in your data range include a fictional country (say Maximalia) with the "safe maximum" as its value. Now Maximalia will not appear on the map chart because there is no such country, but its associated value of 4 meters will still be the maximum and the figure will be scaled accordingly for the countries displayed!

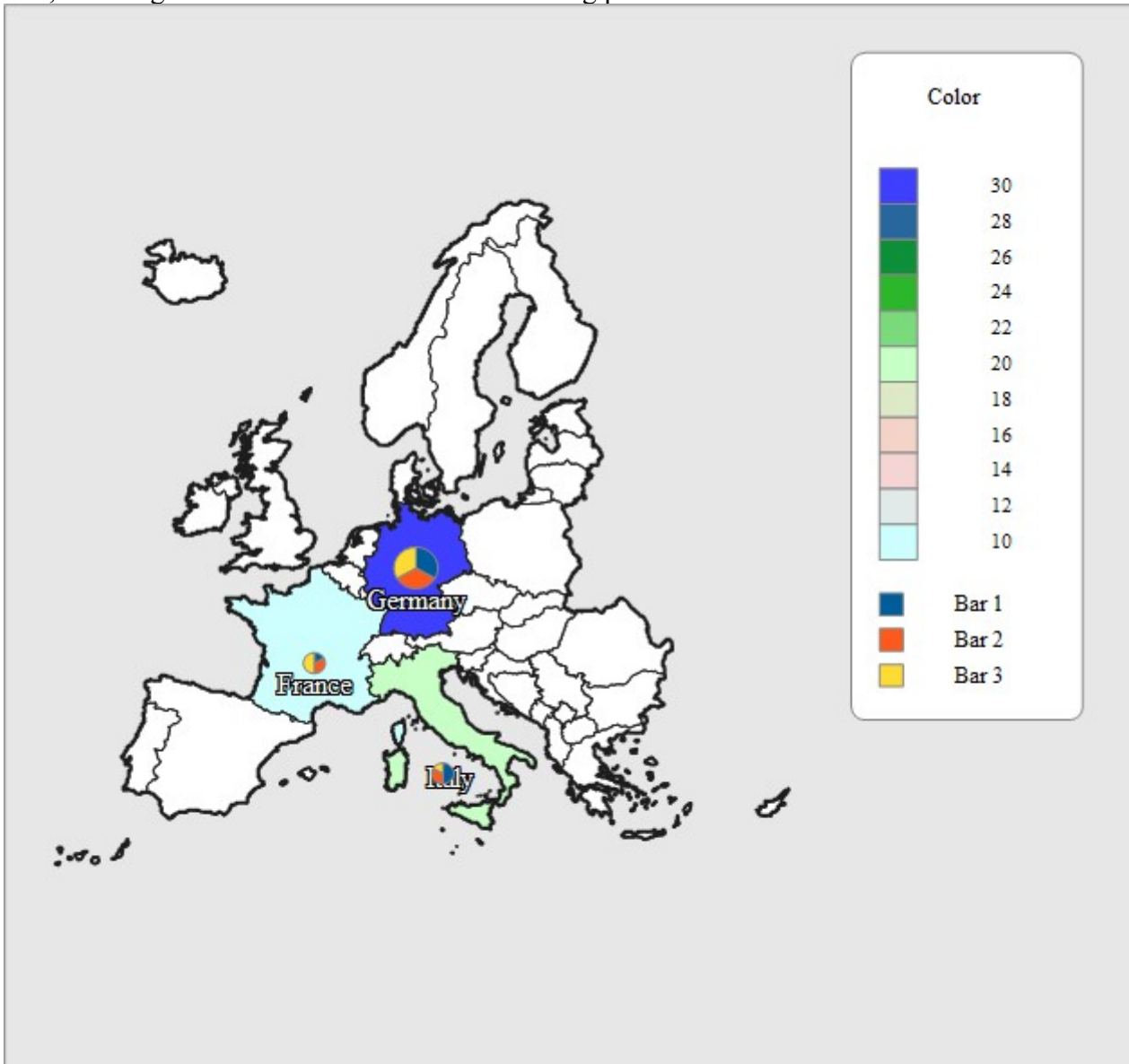
Generally the size of the subcharts can be controlled with the **Subchart size** setting. If you only include a few regions, and they are sizable enough, you might want to use a higher setting, while a lower setting may be more pleasing in the case of several smaller regions.



### Click Create!

Once all is set up, create the chart by clicking the Create button. If you have changed your mind about something you can navigate back and forth between the pages of the dialog using the buttons at the bottom.

Using our demo data we can get the following chart by enabling captions and the legend, giving no title, selecting the Custom color scheme and adding pie charts at 100% size.



### Editing a map chart

The settings of map charts can be changed by right-clicking the chart and selecting **Edit EuroOffice Map Chart** from the context menu associated with the chart. This opens the same

dialog box that was used to create the map chart and any setting can be changed.

If you do not want to change the settings, just some of the data, you can just do that. Any change to the data range will be reflected in the map chart.

If you want to make cosmetic changes to the chart (such as changing fonts, moving the legend to the other side, changing the background color and so on), you should have no difficulty doing that. Map charts are simple OpenOffice drawings, and can be edited in OpenOffice Draw, or even in OpenOffice Calc. To edit the chart in Calc you have to ungroup the items making it up, tweak them as you like and then regroup them. Make sure you restore the grouping hierarchy as you have found it! If you change it in a wrong way, you may lose access to the chart as a EuroOffice Map Chart. You will not be able to change its settings and they will stop responding to changes in the data range.

A safer and more convenient way of tweaking a map chart may be to copy and paste it to OpenOffice Draw. In Draw you can edit drawings made up of groups more easily by double clicking a group and manipulating its insides. Once you are finished, you can copy and paste the chart back to Calc. This will disrupt the link between the chart and its data, but it will be restored when the document is loaded. Simply save the spreadsheet as an ODS file and close and open it again!

Note that changing the settings of a map chart through the **Edit EuroOffice Map Chart** dialog will cancel all tweaking and will revert the map chart to its original state. Make sure the cosmetic tweaks are the last step in your working process! Changes to the data will however not disrupt most tweaks.

## Examples

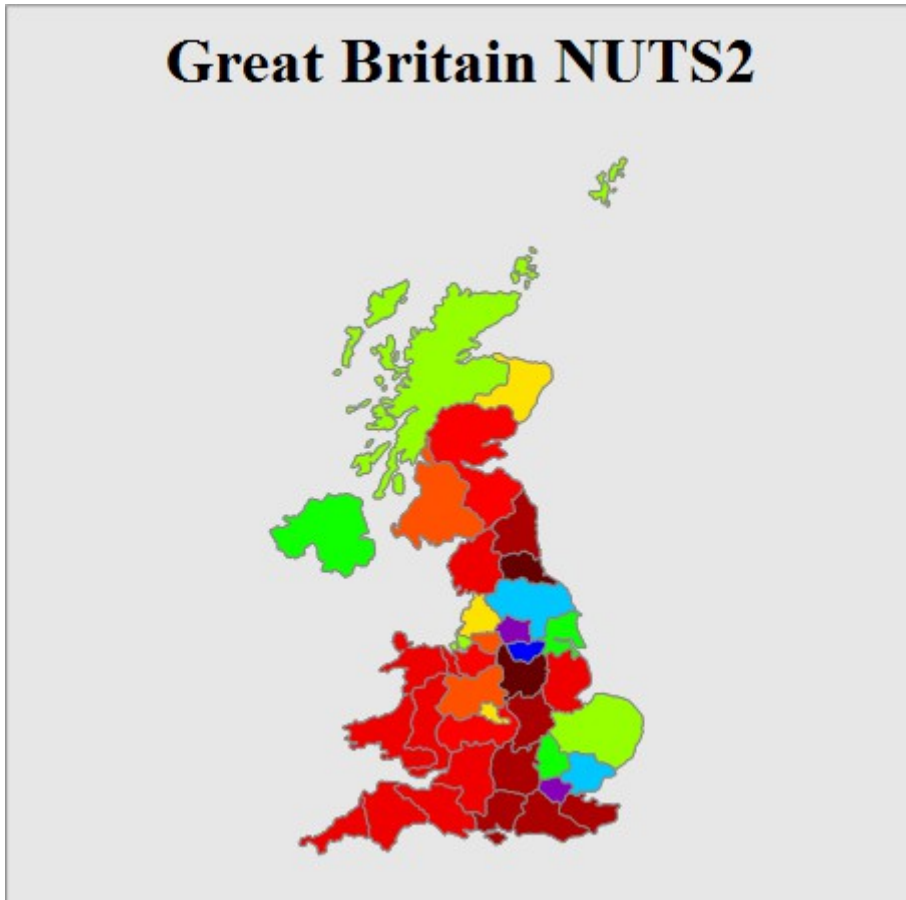
Finally here are some more demo data. You can do similar maps with using of OpenOffice Map Chart Professional.



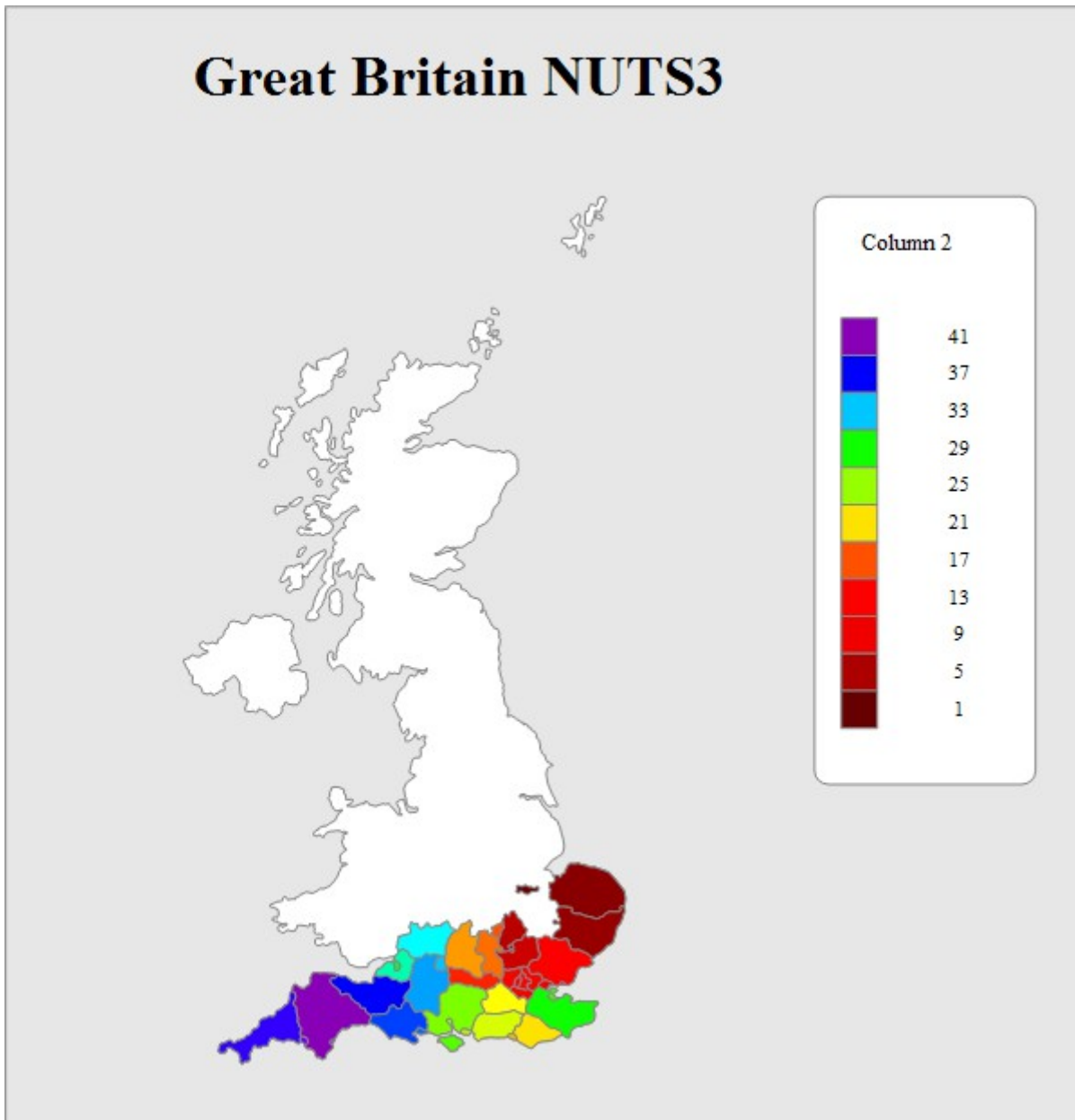
For example this map contains NUTS 1 regions of UK.



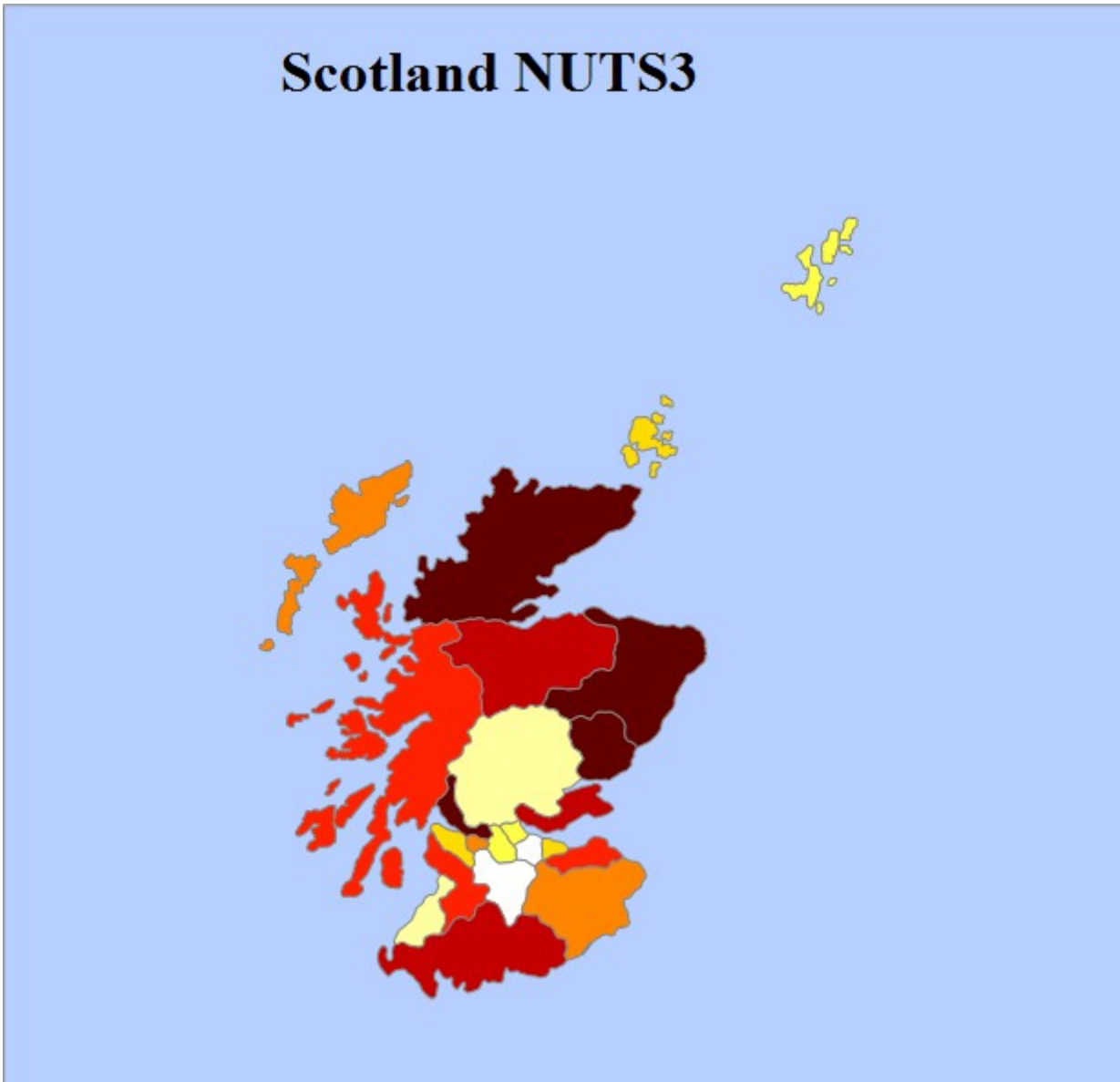
NUT 2 regions of UK.



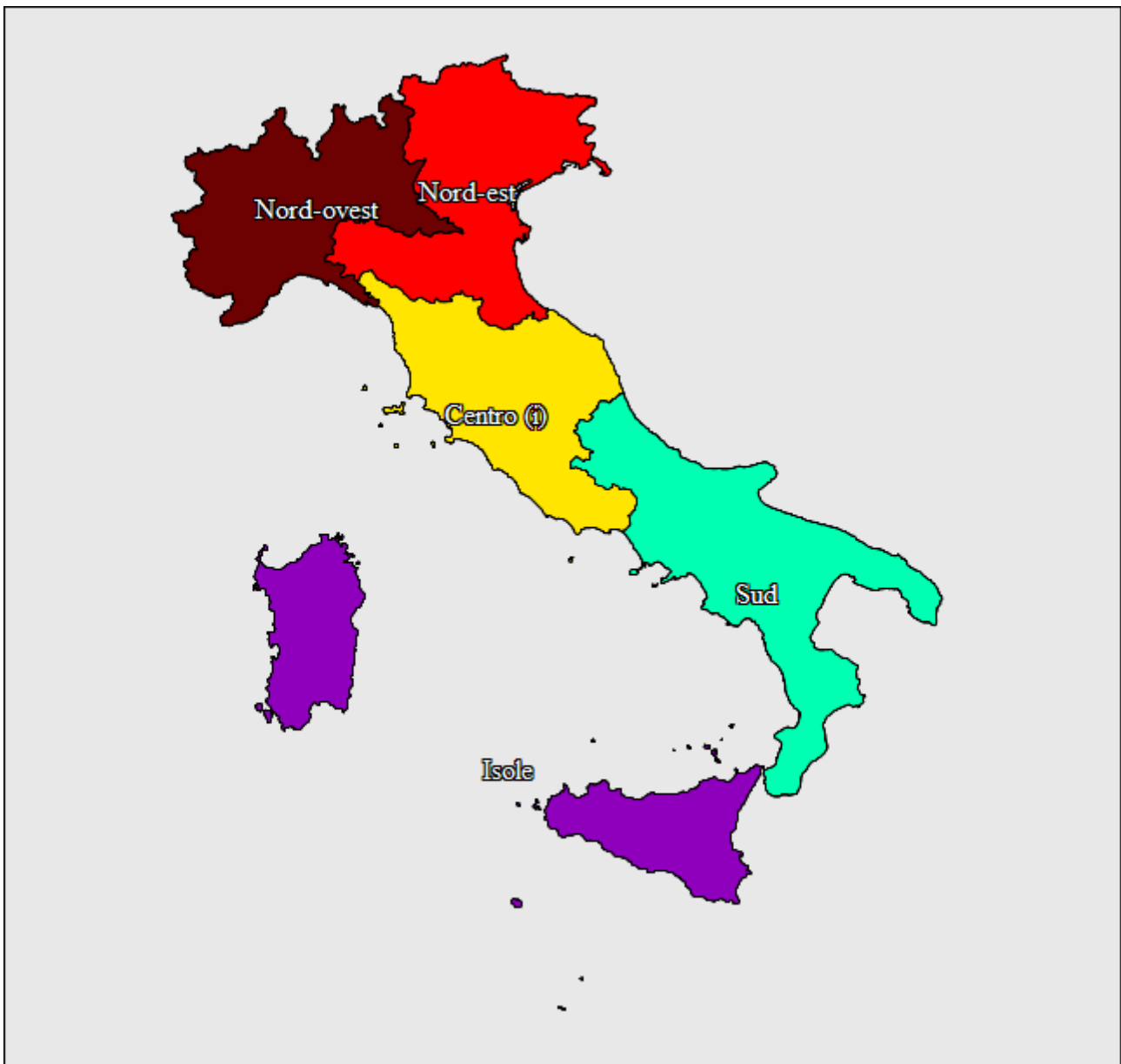
And here it is a map of NUTS 3 regions.

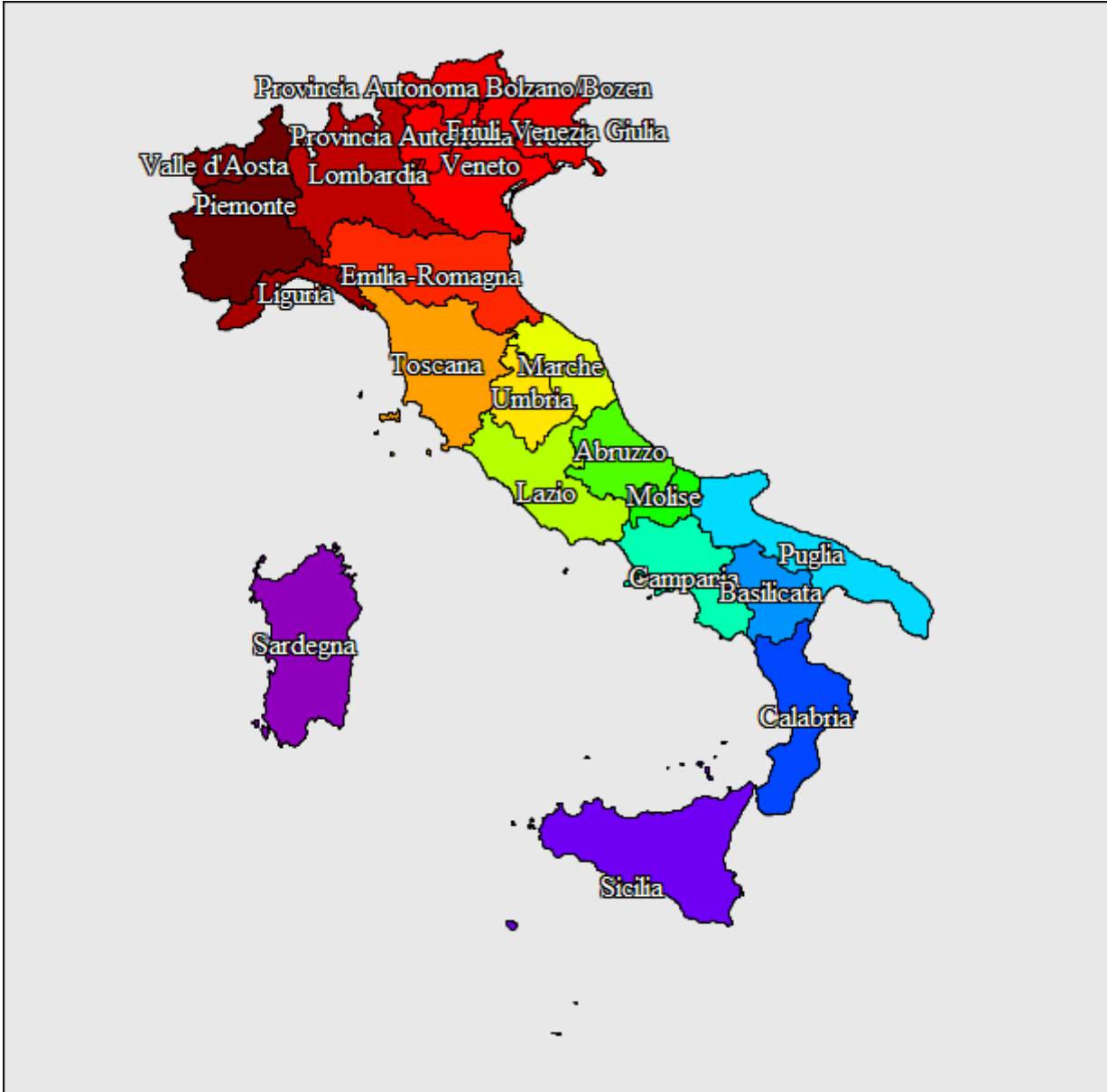


This is Scotland's NUTS 3 map.



The following maps are several NUTS levels of Italy. The first one is a NUTS 1, while the second is a NUTS 2 containing the counties of Italy.

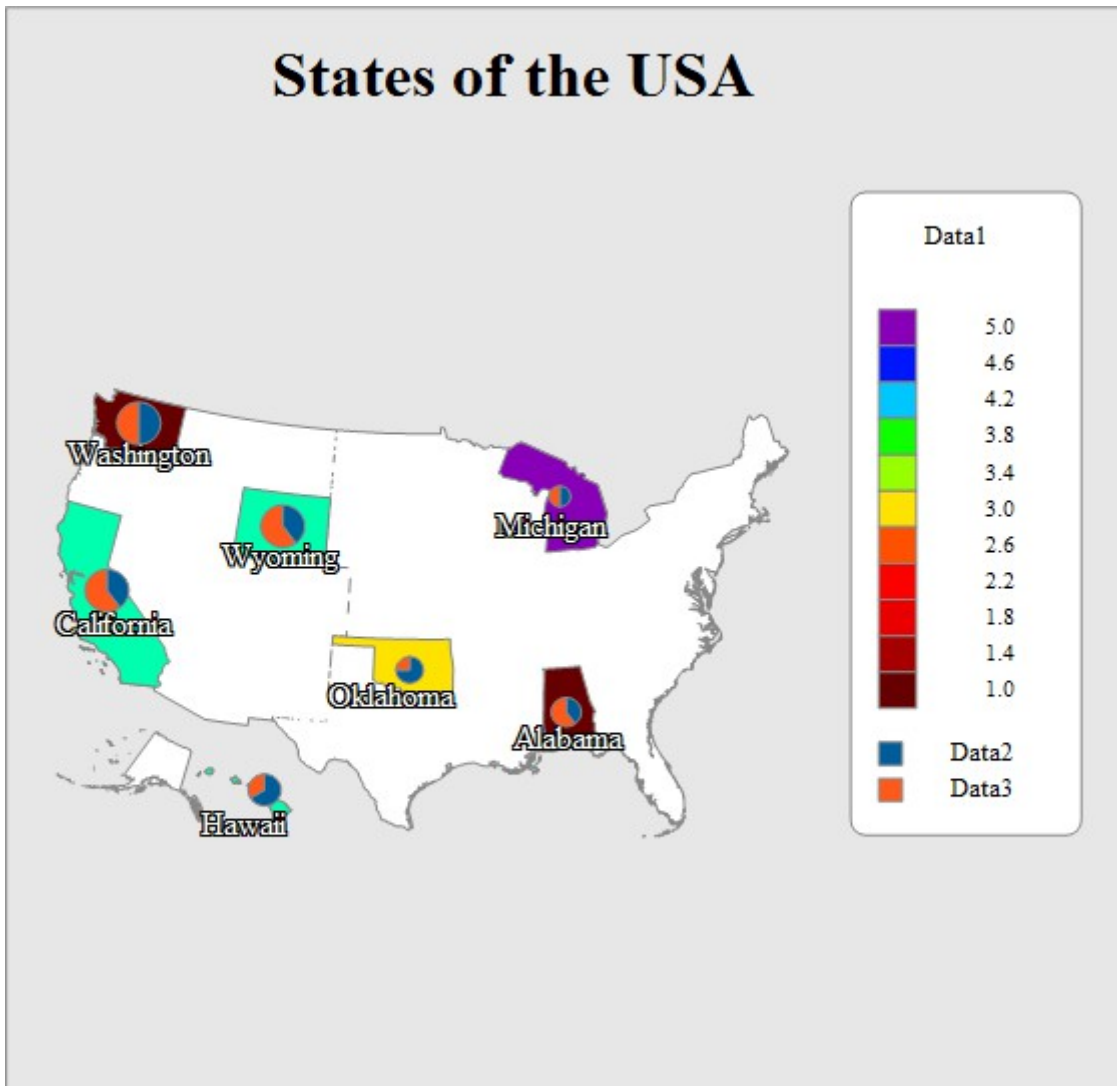




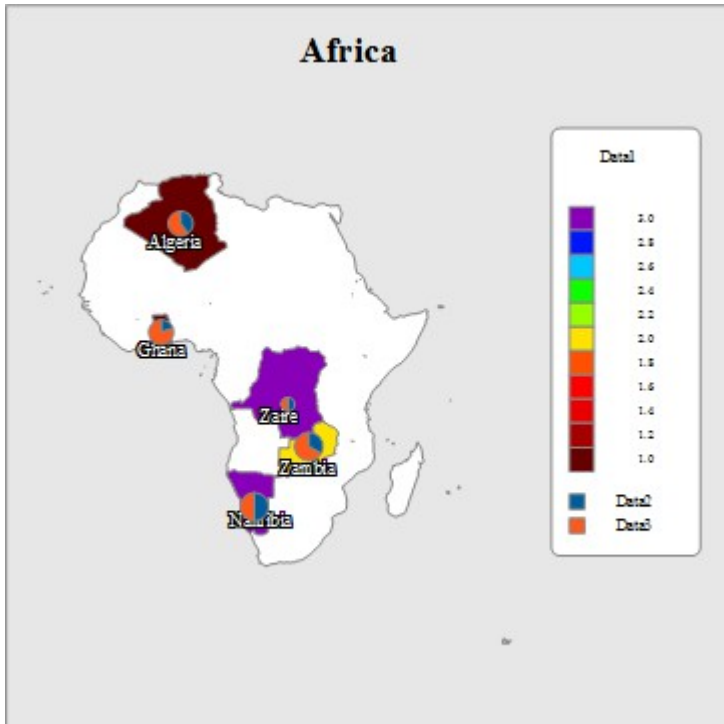




The following map displays some states of the USA in Rainbow color shame.



These are some countries of Africa.



And last but not least this is a 3D map of UK.

