Hands-On: Geopublisher 2

Requirements:

- Hands-On Geopublisher-1 passed
- Trainings DVD

Learn how to:

- make backups of your atlas.
- sort and remove entries from the data-pool, the thematic maps list and the menu.
- change general atlas parameters like title and description.
- configure the legend, e.g. hide layers in the atlas legend.
- configure titles, visibility and order of layer attributes.

Duration:

- 60min?

Steps:

1 Make backups of your atlas

1. Open a *Windows Explorer* by pressing **Win-E**.
2. If you have finished the tutorial “Geopublisher-1”, browse to where you stored your atlas.

   If you have not done the last tutorial, copy the folder `tutorials/geopublisher-2/my first atlas - AtlasWorkingCopy` from the trainings DVD to your computer.
3. To make a backup of your atlas, you just make a copy of the folder while Geopublisher is closed. A quick way to do that is to select the folder and press Ctrl+*C followed by Ctrl+V in the Windows Explorer.* This will automatically give the folder a new name.

   Of course it is also a good idea to create compressed ZIP backups of your atlas folder. ZIPs can be copied much faster and require less disk space.
4. Now start Geopublisher by clicking the 

icon on your desktop. If you have not yet installed Geopublisher, look at the tutorial *Geopublisher-1*.

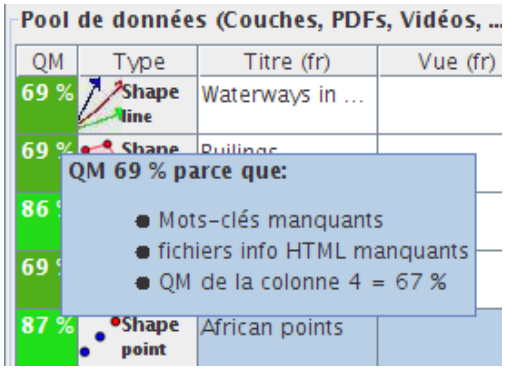
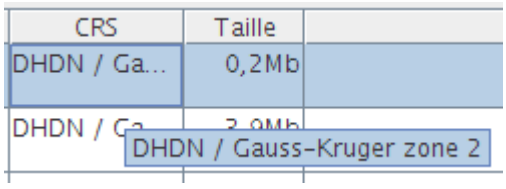
   Note: On some *MS Windows* configurations, the desktop icon will not be created (or vanish again). In that case look at the Start-Menu for a menu called *Geopublishing* and select *Geopublisher 1.3* from there.

2 Managing data-pool, thematic map-pool and the menu

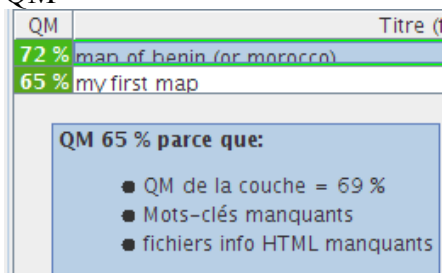
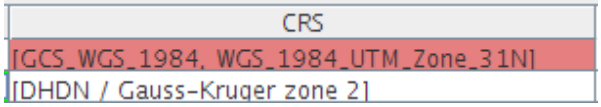
We will now have a deeper look at the graphical user interface (GUI) of Geopublisher. The list of data-pool entries (on the left) and the list of thematic maps (top right) are very similar. Both have multiple columns to give you an overview about the entries.

1. Data-pool columns

   The pool de données has seven columns:

Column name	Description
QM 	*Quality-Management Index*: A coloured percentage value between 0% and 100%. This value reflects how many of all possible meta-data fields you have entered. If you enter only the minimal information, the value is low. Rest the mouse over a QM-cell for one second and you will see a tool-tip listing the missing fields.
Type	*The type of the entry:* If an error occurred while loading an entry, a warning sign will be shown. In that case the tool-tip will explain you the problem.
Titre	The title as defined by the atlas creator
Vue	A list of additional views for a vector layer. Additional views allow to create multiple stylings for the same dataset. (This concept is explained in a later tutorial.)
Nom du fichier	The “physical” file-name of the dataset.
CRS 	Coordinate Reference System of the entry. This cell is always empty for non-geographical data like PDFs. Stopping the mouse over the cell shows you the full name of the CRS.
Taille	Size of the dataset. Because all data is compressed during export, this size value is bigger than the size of the layer in the exported atlas. Still it can give you an overview of big and small layers.

2. Thematic maps-pool columns:

Column name	Description
QM 	*Quality-Management Index*: Functions equal to the QM-column in the data-pool. The QM-Index for a map is also taking into account the QM of the layers used in the map.
Titre	The title as defined by the atlas creator
CRS 	*Coordinate Reference System of the map* The map's CRS is defined by the CRS of the first layer, that is the bottom-most layer. All other layers are reprojected to the map's CRS if they are stored in different CRS. Especially for raster layers, re-projecting can become very slow. As a warning Geopublisher shows the cell in red, if multiple CRS are mixed.
Taille	Sum of the size of all layers used in the map.

3. **Sorting by column**

   When you are looking for a specific data-pool entry, you may sort the lists by clicking on a column header. Try clicking on “Titre”. A small triangle appears in the column header and the rows are sorted by their title. Clicking again will reverse the sort. The titles are now sorted form Z to A:

   You can also change the width of the columns and their order by using Drag'n'Drop on the column headers. That can also help to an overview over many entries.

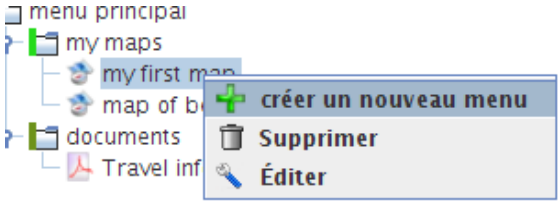
4. Managing the **menu structure**

   Remember that you associated maps and documents with menus by Drag'n'Drop-ing them into the tree structure.

   But there is more you can do. You can also link layers into the menus, just as you

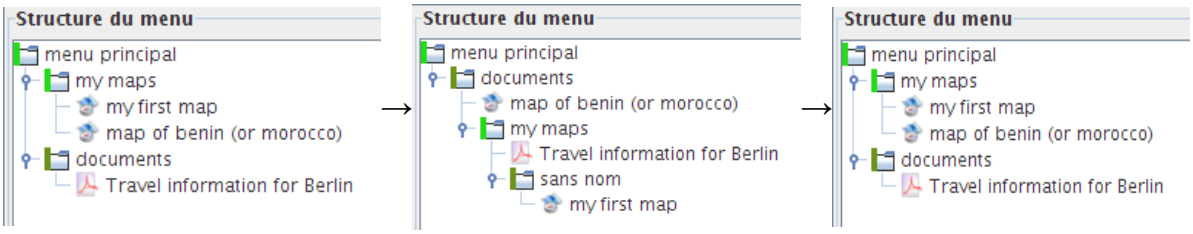
did with the PDF document. If the atlas user selects a layer from the menu, it will be added to the current atlas map. When the atlas user switches to another map, his changes to the map are reset.

You already learned, that you can create new menus (and sub-menus) by using the right-mouse button and selecting “créer un nouveau menu”.



You can also move menus and menu-items with Drag'n'Drop from one menu to another.

Task: Create a menu structure exactly as shown in the middle screen-shot, test it in the preview, and order everything back to normal.

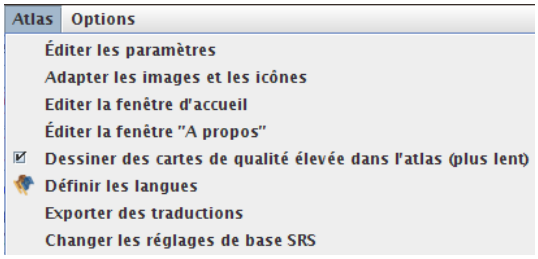
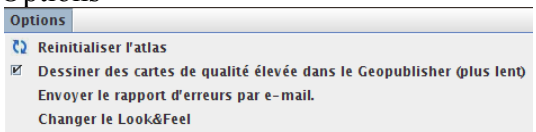


Note: It can be quite tricky to arrange the items as shown in the middle image, but the ordering is never arbitrary and follows a logic – did you get used to it?

Note: When you select a map or a data-pool entry in the menu structure, the item is automatically selected in the map- or data-pool also. Try it by selecting the different maps in the menu structure and look at the map-pool.

5. The Geopublisher menu bar

Let's take a moment to look at the three main menu's in Geopublishers menu-bar: “Fichier”, “Atlas” and “Options”.

Menu	Function
Fichier 	This menu contains the most basic actions to **create**, **load**, **save** and **close an atlas**. From this menu you can also **preview** and **export** a loaded atlas. Note that there are **keyboard short-cuts** shown next to the menu-items. Next time you want to save, just press Ctrl+**S.**
Atlas 	This menu is only available after an atlas has been loaded. All its options refer to the loaded atlas. With **“Éditer les paramètres”** it is possible to edit the basic meta-data for the atlas, like title and description (just like you did after you created a new atlas). “**Définir les langues**” allows to add and remove supported languages from the atlas. The last entry allows you to define a default CRS that will be used for geo-data without an explicit CRS definition (=without a .prj file).
Options 	The last menu contains settings, that are not related to the atlas, but to Geopublisher. **Re-initialiser l`atlas** allows you to re-read the AtlasWorkingCopy-folder, which is useful when you changed files in the atlas folder manually (= without using Geopublisher).

6. Vector layer attributes

Some background information: Vector layers usually provide attributes for their geo-objects. For Shapefiles, these attributes are stored in a `.DBF` file. `DBF` is the database file format of the dBaseIV database and was invented in the 1980s. Using such an old format has advantages and disadvantages:

One advantage is the wide-spread support: Hundreds of programs exist that can handle DBF files. Note: Latest MS Excel does not support DBF anymore.

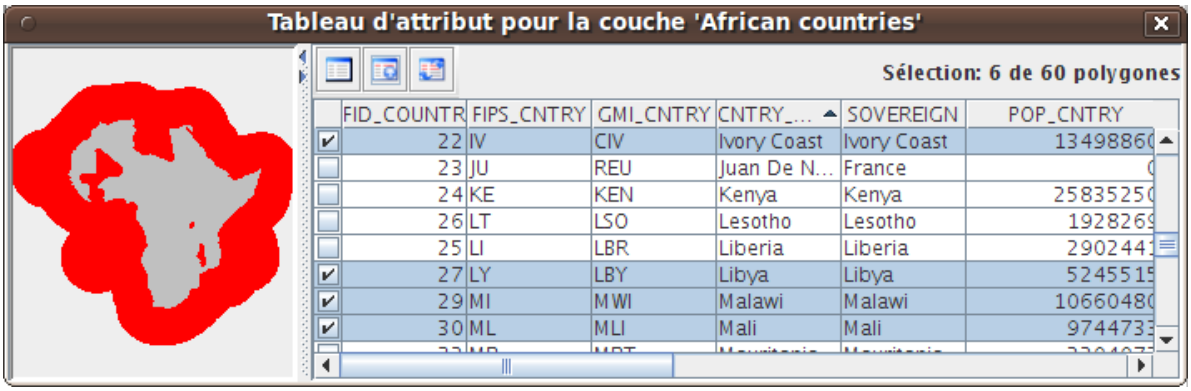
The disadvantages are:

1. When the DBF standard was invented, memory was very expensive. Hence some restrictions apply, that do not make sense nowadays: e.g. column names may only have 11 characters; column names are not case-sensitive and may not contain special characters.

2. Many applications extended the `DBF` format to their needs, so that there is no real standard any more. Example: Many of the `SHP/DBF` files collected in IMPETUS contained special characters in their column names. This is prohibited in the official DBF standard and leads to problems when the DBF is used on a computer with a different char-set, e.g. in China. But it shows, that programs like ESRI ArcGIS allow to create such “officially wrong” files.

Note: Geopublisher tries to be compatible with all kinds of DBF files and accepts DBF column names with special characters. Future versions of Geopublisher will though automatically correct the column name.

Now let's have a look at the attribute table of some vector layer. Use the right-mouse on the “African Countries” layer in the data-pool and select “Tableau de attribute”. The attribute table window will open:



Like the other tables, this table allows you to sort rows by clicking on the column header. A little triangle appears. Clicking it again will invert the sorting order.

Task: Sort the table by column POP_CNTRY and find the country that has a population of 27767920?

When you select rows in the attribute table, the geometries are highlighted in the small preview map. You may reverse the selection by clicking on the  icon. You can move all selected entries to the top by clicking the  icon.

Note: You can zoom with the mouse-wheel in the small preview map!

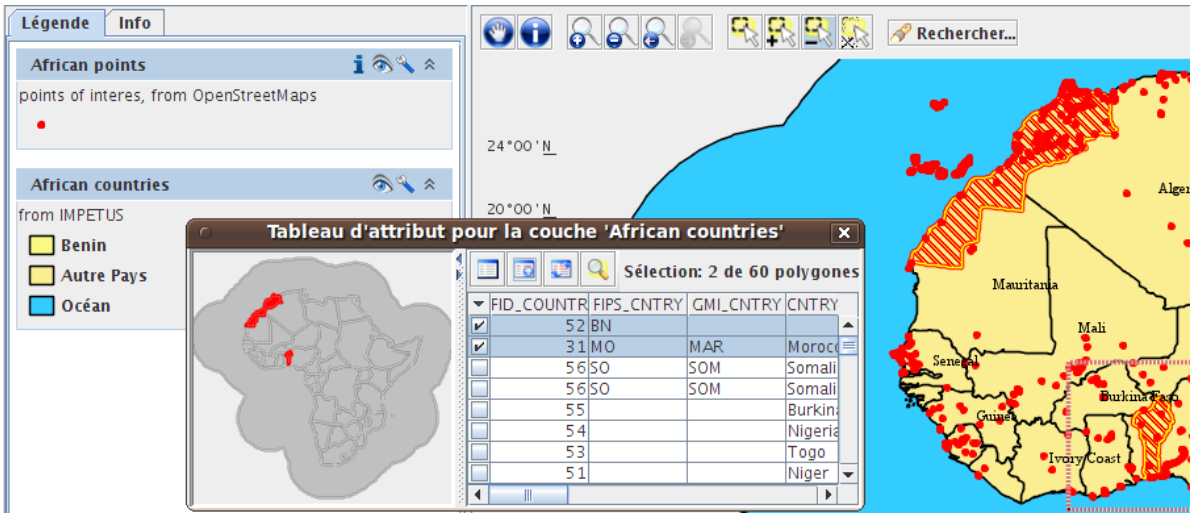
7. Showing the attribute table to the atlas user

Now close the attribute table. Open the map that contains the *african countries* layer in the MapComposer by double-clicking it in the thematic maps list. Now please deactivate the “Application dans le MapComposer” de tab “l'étendue maximale de la carte”.

Click on the tool icon of the “african countries” layer and select “Tableau de

attribute”.

The attribute table appears again, but it is different. When the attribute table is opened from the legend, it is linked to the map. You will see a new button in the attribute table and when you select rows, they will also be highlighted in the map:



8. Selection synchronization logic

Since we opened the attribute table, the map's top bar also shows new buttons: . Now go with your mouse over all four icons and wait for the tool-tip explaining them. Then play with the buttons and select countries in the map. They will be automatically highlighted in the attribute table as well. When you selected some countries, use the icon from the attribute table to sort them to the top. Now you can investigate the attributes of all selected countries. Also try the button – it will zoom your map to the bounding box of all selected features.

The selection logic is also fully available in the atlas, too. It is available, as soon as at least one attribute table is open. When the attribute table is closed again, the selection and the selection buttons in the map disappear again.

Question: Why the selection buttons are not visible all the time?

Answer: If you have a map with 10 layers, in which layer should the selection be make? Other GIS programs expect the user to first select a layer to perform selections on, and then start selecting geometries. During the development of Geopublisher, it has been decided that such a selection-logic would be to complicated for atlas end-users. Another reason for the Geopublisher approach: What is the point in selecting geometries when no attribute table is open?

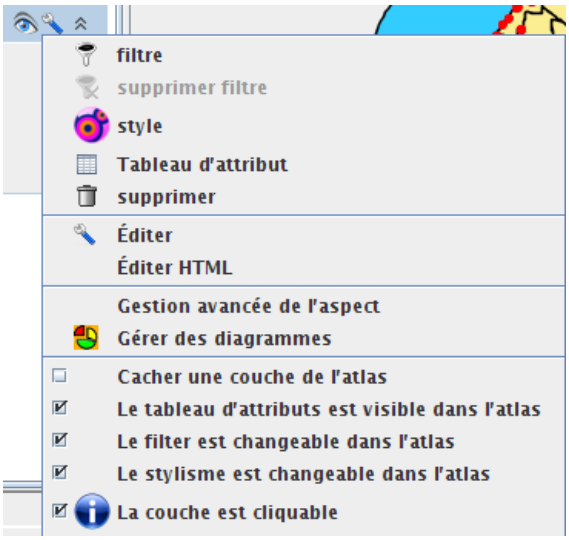
9. Restrict layer options

We learned, that the user is only able to perform selections on a layer, if she is able to open the attribute table. The philosophy of Geopublisher atlases is to provide only the important information to the end-user and filter other information.

You are able to restrict special features for a layer. Some features are automatically restricted by Geopublisher, e.g. the attribute table is never available for layers that

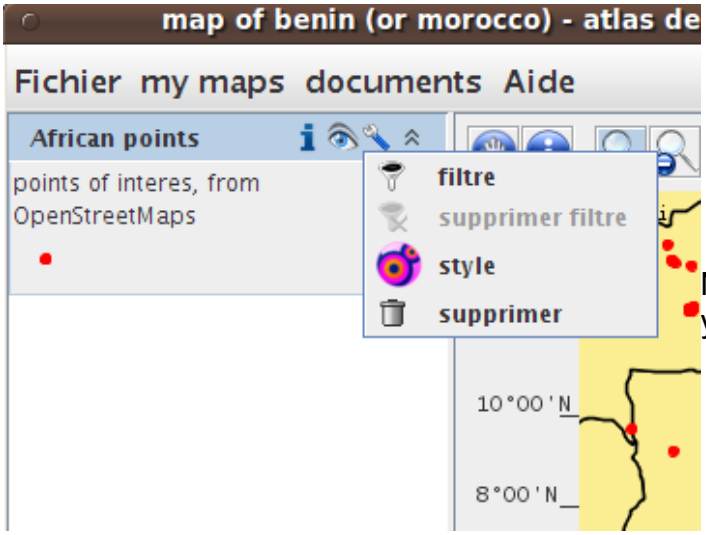
do not have attributes defined as visible for the end-user.

Now look at the tool menu of the African *countries* layer:



The last section of 5 check-boxes allows you to define which features are available in the atlas.

Task: Define the African *countries* layer to be visible in the atlas legend. After that define the attribute table of the point layer to be invisible to the end-user. Then start the preview by pressing **F5** and look at the map. The African countries layer is now hidden in the legend, but still visible in the map. Also does the layer menu not show the option to open the attribute table any more.



Now close the preview and revert you changes in the MapComposer.

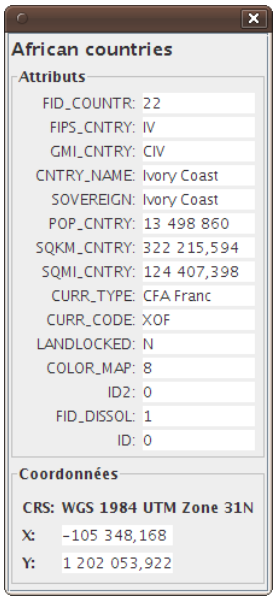
Meta data for layer attributes

If the attribute table contains important information, we now know how to make it available to the end-user. But looking at the attribute table, there are some ugly aspects that we would like to improve:

a) The column names come directly from the DBF and are not self explaining to the end user.

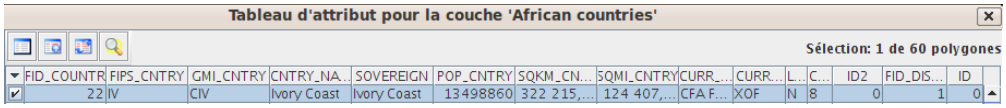
b) Some columns contain distracting, unimportant or redundant information.

c) The order attribute columns is determined directly by the DBF file. Maybe we want to put important attribute to the front.



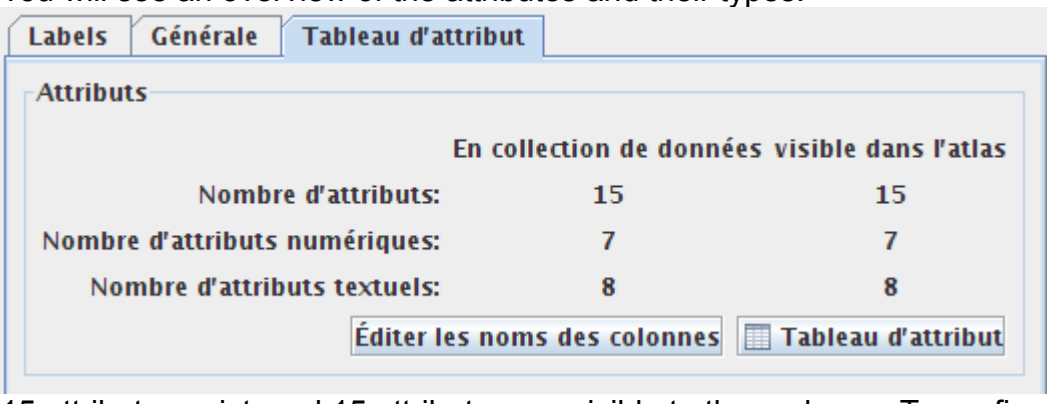
Before you will learn how to configure all these things with Geopublisher, lets have a look at the  tool for a moment. It can be used to request attribute information for a feature without opening the attribute table. Use it in your map to get information about a country. Using it on *Ivory Coast* will show an information window like this:

The labelling of the attributes in the Info-Tool equals exactly the column header of the attribute table:



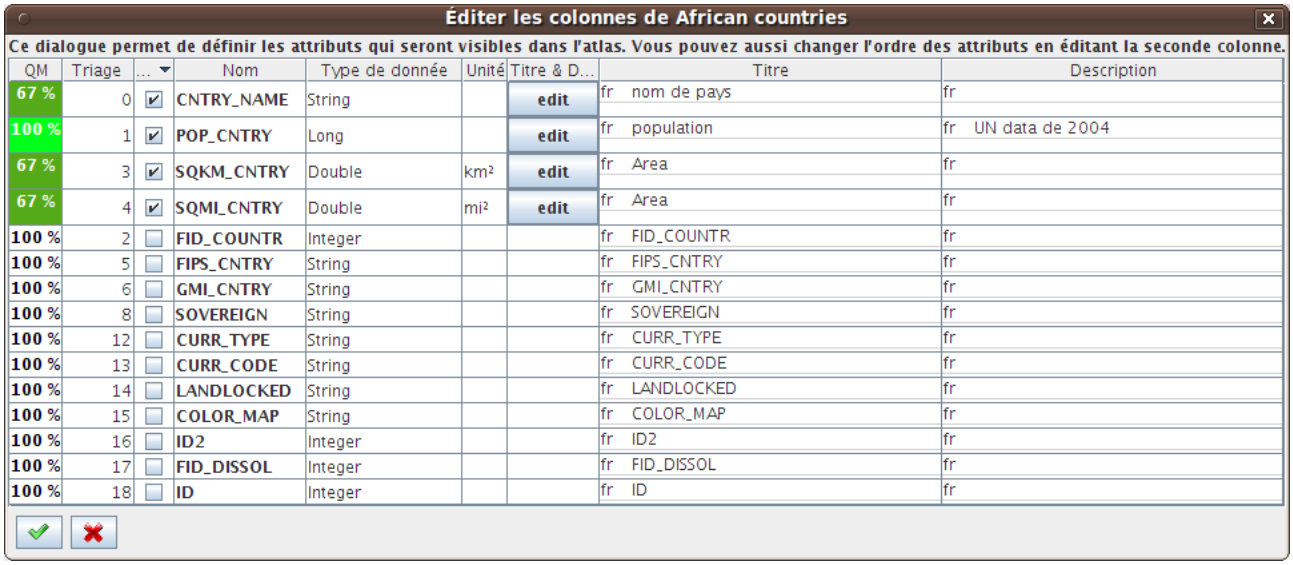
Note: When configuring visibility, labelling and order of the attributes in the next step, it will automatically apply to every place in the atlas where attributes are visible.

1. Open the “Edit dialog” for the *African countries* layer
2. Select the second tab “Tableau d`attribut”
   You will see an overview of the attributes and their types:



15 attributes exist, and 15 attributes are visible to the end-user. To configure the columns, we click on “Éditer les noms de colonnes”.

3. A new dialogue opens with a list of all columns. Every column in the attribute table equals one row in this table:

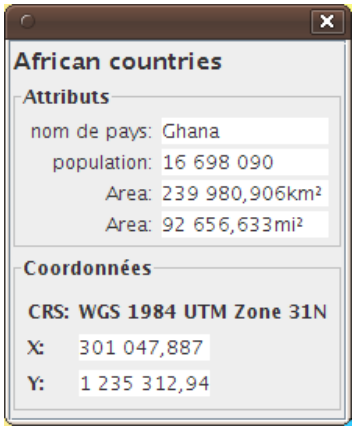


QM	Triage	...	Nom	Type de donnée	Unité	Titre & D...	Titre	Description
67 %	0	☑	CNTRY_NAME	String		edit	fr nom de pays	fr
100 %	1	☑	POP_CNTRY	Long		edit	fr population	fr UN data de 2004
67 %	3	☑	SQKM_CNTRY	Double	km²	edit	fr Area	fr
67 %	4	☑	SQMI_CNTRY	Double	mi²	edit	fr Area	fr
100 %	2	☐	FID_COUNTR	Integer			fr FID_COUNTR	fr
100 %	5	☐	FIPS_CNTRY	String			fr FIPS_CNTRY	fr
100 %	6	☐	GMI_CNTRY	String			fr GMI_CNTRY	fr
100 %	8	☐	SOVEREIGN	String			fr SOVEREIGN	fr
100 %	12	☐	CURR_TYPE	String			fr CURR_TYPE	fr
100 %	13	☐	CURR_CODE	String			fr CURR_CODE	fr
100 %	14	☐	LANDLOCKED	String			fr LANDLOCKED	fr
100 %	15	☐	COLOR_MAP	String			fr COLOR_MAP	fr
100 %	16	☐	ID2	Integer			fr ID2	fr
100 %	17	☐	FID_DISSOL	Integer			fr FID_DISSOL	fr
100 %	18	☐	ID	Integer			fr ID	fr

The **first QM column** gives you an overview of the entered meta-data, as we have seen it in other dialogues of Geopublisher. The average QM-Index of all visible attributes influences the QM-Index of the layer - and the layer QM-Index influences the QM-Index of the maps it is used in.
The **second column “Triage”** allows you to define the order of the attributes when shown in the Info-Tool or the attribute table. See these values as weights: the heavier the column, the further down it will appear. You can enter any numbers like 100 or -100 (double click the field to edit), Geopublisher will correct and increase the other numbers if the same weight is used twice.
The **third column “Visible”** allows to hide unimportant attributes from the end user.
The **fifth column “Type de donnée”** shows you the attribute type. *Double, Long, Integer, Byte* and *Float* are all numeric attribute types. *String* is a textual attribute type. If numbers are stored in the attribute table as *Strings*, you should not be surprised if sorting fails in the attribute table (“1”, “10”, “100”, “2”, “20”, “200”, …).
The **sixth column “unit”** is used to postpend a unit name in the Info-Click-tool.
The **last three columns** allow you to edit the “Titre & Description” of the attribute. If a description is entered, it will be used e.g. as a tool-tip in the Click-Info-Tool if the user stops the mouse over a value.

Task: Now configure the columns of all your four layers to look nice and contain the relevant information only. Compare the QM-Index of your maps before and after you entered the meta-data.

Check in the atlas preview, that the attribute tables look correct.



Save your atlas and be proud: You learned how to make nicer maps!