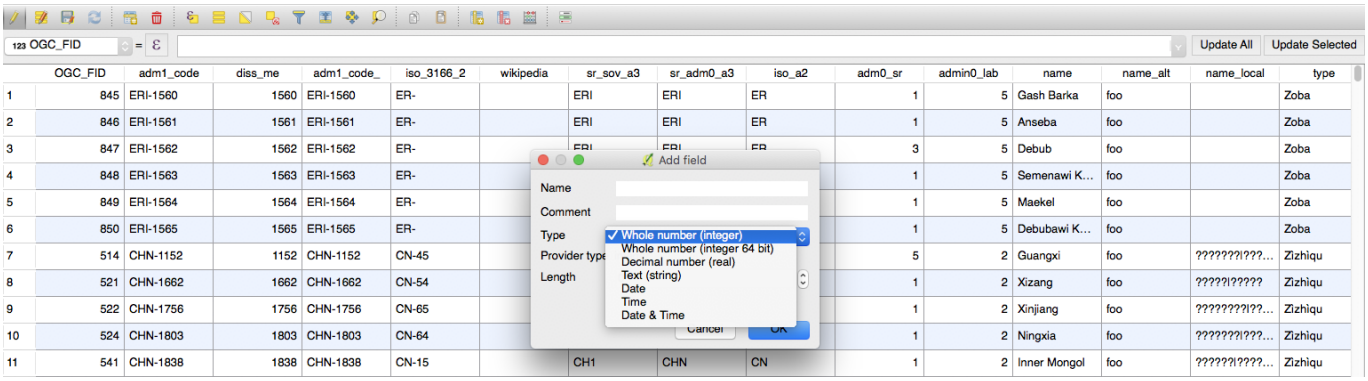
Section : . Introduction to QGIS

Module : . Adding and removing columns

Adding and removing columns in attribute tables

"Underlying each vector layer in QGIS is a flat table - the columns of which can be removed or added."

Behind every vector layer in QGIS you will find a data table (attribute table). The data in this table describe the attributes of each feature. Depending on the origin of this data, the table can be a relational database table or view, a file-based table (e.g. .dbf or .csv), or remote data (e.g. a WFS layer). When QGIS has the needed permissions to edit the actual structure of that table, you can use its field management functions to do so.
In this exercise, we will take a look at how.



OGC_FID	adm1_code	diss_me	adm1_code_	iso_3166_2	wikipedia	sr_sov_a3	sr_adm0_a3	iso_a2	adm0_sr	admin0_lab	name	name_alt	name_local	type
1	845	ERI-1560	1560	ERI-1560	ER-		ERI	ERI	ER	1	5	Gash Barka	foo		Zoba
2	846	ERI-1561	1561	ERI-1561	ER-		ERI	ERI	ER	1	5	Anseba	foo		Zoba
3	847	ERI-1562	1562	ERI-1562	ER-		ERI	ERI	ER	3	5	Debub	foo		Zoba
4	848	ERI-1563	1563	ERI-1563	ER-					1	5	Semenawi K…	foo		Zoba
5	849	ERI-1564	1564	ERI-1564	ER-					1	5	Maekel	foo		Zoba
6	850	ERI-1565	1565	ERI-1565	ER-					1	5	Debubawi K…	foo		Zoba
7	514	CHN-1152	1152	CHN-1152	CN-45					5	2	Guangxi	foo	???????I???…	Zizhiqu
8	521	CHN-1662	1662	CHN-1662	CN-54					1	2	Xizang	foo	?????I?????	Zizhiqu
9	522	CHN-1756	1756	CHN-1756	CN-65					1	2	Xinjiang	foo	????????I??…	Zizhiqu
10	524	CHN-1803	1803	CHN-1803	CN-64					1	2	Ningxia	foo	???????I???…	Zizhiqu
11	541	CHN-1838	1838	CHN-1838	CN-15		CH1	CHN	CN	1	2	Inner Mongol	foo	??????I????…	Zizhiqu

You try:

Goal: To add and remove columns from a layer's data table

- Load the Countries layer from the adding_removing_columns.gpkg provided in the exercise data (the ne.sqlite only contains the attribute table data).
- Open the attribute table for the layer
- Enable the editing mode
- Use the delete fields function to remove the columns listed in the specification table below
- Use the new field column to add a new column called 'visited' giving it the options listed in the specification table below
- Save your table edits

Check your results

Scroll across to the right of the table - do you see your newly added column?

Name	Expectation
Countries layer	ne_10m_admin_0_countries in the exercise data
Fields to delete	name_alt, name_local

Field to add	
• name	visited
• comment	Have I visited this country
• type	text
• length	3

More about

- You can also manage the columns for the data table in the layer properties dialogue.
- Some formats (e.g. shapefile) place limits on the number of columns you can have and on the length of the field names you can use - in particular, shapefiles limit you to 10 characters.
- You need to ensure you have the needed permissions to add and remove columns - especially if the data source is a relational database.
- Think carefully before you delete a column - once the data is gone there is no 'undo' option to get it back!
- You should choose an appropriate type for new columns when you add them - the following are supported:

Type	Notes
Whole number (integer and 64-bit integer)	Use 64 bit when you need to store large whole numbers
Decimal	Use when storing floating-point numbers
Text	Use for free-form text - be sure to choose an appropriate length
Date	Use for storing dates (without time)
Time	Use for storing times (without dates)
Date & time	Use when you need to store both data and time

Check your knowledge:

1. After removing a column and saving your edits, you can press undo to get it back again:
   a. *True*
   b. *False*
2. Indicate which statements are correct:
   a. *there is no limit to the number of columns you can have*
   b. *when creating a column some column types require that you set the field length*
   c. *the only place to manage fields / columns is the table view*
3. Is it possible to organize the order for the columns you have created:
   a. *No, you will need to save your edits and create a new layer using the refactor tool*
   b. *Yes, there is a native tool in attribute table that controls ordering columns*
   c. *You will need to use the layer as a virtual layer*

4. In the attribute table you can create columns using the New Field tool or Field calculator. What are the key differences betwen the two methods:
   a. *Field calculator is used when you need to create an empty column*
   b. *Field calculator is used when you need to create a non empty column.*

Module video tutorial:

- https://www.youtube.com/watch?v=98VnLjw87Pk

Further reading:

- Attribute_table: https://docs.qgis.org/3.16/en/docs/user_manual/working_with_vector/attribute_table.html

Download the sample data for the lesson from http://changelog.qgis.org/media/images/lesson/worksheet/external_data/82febfc4d98f7b70c6be74e66587ca8c2fc33a83.zip.