Attribute expressions in Context
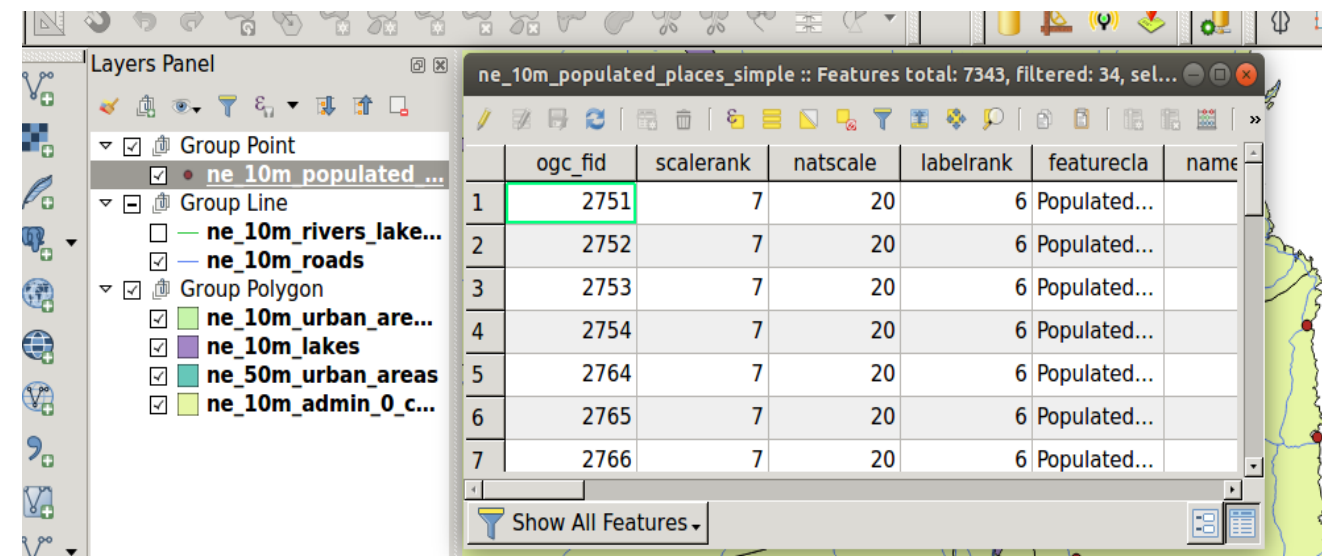
"Expressions offer a powerful way to manipulate attribute value, geometry and variables in order to dynamically change the geometry style, the content or position of the label, the value for diagram, the height of a composer item, select some features, create virtual field"

In this module we explore how to construct expressions to manipulate data.

You try:

Goal: *To learn how to use expressions to manipulate data.*

Project:appendix3-local-data/attribute.qgs
* Toggle edit the roads layer and open the attribute table. Choose field calculator.
* Choose update existing attribute and choose column "type"
* Enter the attr_expr and click ok.
* Save your edits and see the changes in the attribute table.
* Open field calculator and add a column road_lenght and use the lenght_calc function to calculate the length of each segment.
* Save your edits. And compare the new length column with the length_km column. *Are they different and if so give reasons ?*
* Create another column length_recode and reclassify the roads into the following categories.
Lenght_km <100 = 1, length_km >=100 and length < = 150 = 2 and length >150 = 3.
Hint: Use the Case statement and length_km column.
* Open the expression editor and select all roads that are either 'Federal' or 'Interstate' and in 'North America'. Use the american_road function.
NB: Rerwite the above expression in your own ways to achieve the same results.   *http://qgis.org*

Name	Value
attr_expr	Upper("type")
road_length	Decimal
length_calc	$length
american_roads	"level" in ('Federal' , 'Interstate') and "continent" = 'North America'

More about

Expressions are extensively used in QGIS. They can be used to alter existing data and producing new output and selecting a subset of the data. QGIS provides uses with the ability to write custom expressions. Expressions are grouped into categories and the geometry functions are a special type which allows a user to manipulate the geometry of a feature and return new output.

Check your knowledge:

1. **What is the best way to describe geometry functions:**
   a) A group of functions which help to find the area of point features.
   b) Functions which only work when shapefile are used.
   c) Group of functions which are intended to exclusively operate on the geometry of layers.
2. **Which of the following can not be achieved using an expression:**
   a) Finding the current date and time.
   b) Evaluating the length of a column containing strings.
   c) Do an intersection between two layers using the geometry functions.
3. **Can a user update selected records:**
   • True
   • False

Answers: 1c, 2c, 3t

Further reading:

https://docs.qgis.org/2.18/en/docs/user_manual/working_with_vector/expression.html