

Geographic information systems

Working with vector layers (Lesson 4)

Contents

- vector file formats
- metadata
- attribute table
- styling
- labeling
- filtering / querying

Vector file formats

- **ESRI Shape**

- ArcView / ArcInfo / ArcGIS software format
- files *.shp, .shx, .dbf, .sbn .prj*
- most widely used

- **Mapinfo TAB**

- MapInfo software format
- files *.tab, .dat, .id, .map, .ind*

- **DGN** – older format used in MicroStation

- **DXF** – older format used in CAD systems

Metadata

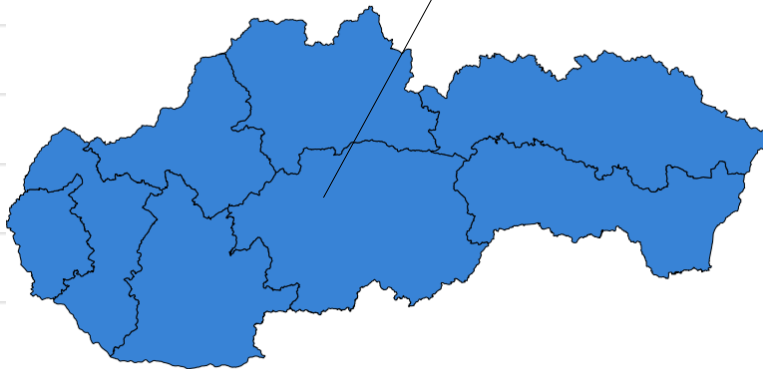
- data about data
 - describe:
 - file format
 - geometry type (point, line, polygon)
 - path to source file
 - capabilities (possible operations)
 - spatial extent
 - spatial reference system
- in QGIS:

Layer properties → Metadata

Vector format

- every single vector feature (point, line, polygon) is linked to a single record in the attribute table 

	id	AREA	PERIMETER	KRAJ_	KRAJ_ID	NAZKRAJA	CISKRAJA
1	0	793263616.000	542096.563	1	1	Žilinský kraj	5
2	1	99161088.000	466046.781	2	2	Trenčiansky kr	3
3	2	94707456.000	765768.688	3	3	Prešovský kra	7
4	3	53109248.000	637105.313	4	4	Banskobystric	6
5	4	749649920.000	660264.313	5	5	Košický kraj	8
6	5	53263872.000	293240.594	6	6	Bratislavský k	1
7	6	41266432.000	554782.625	7	7	Nitriansky kraj	4
8	7	147713792.000	561476.375	8	8	Trnavský kraj	2



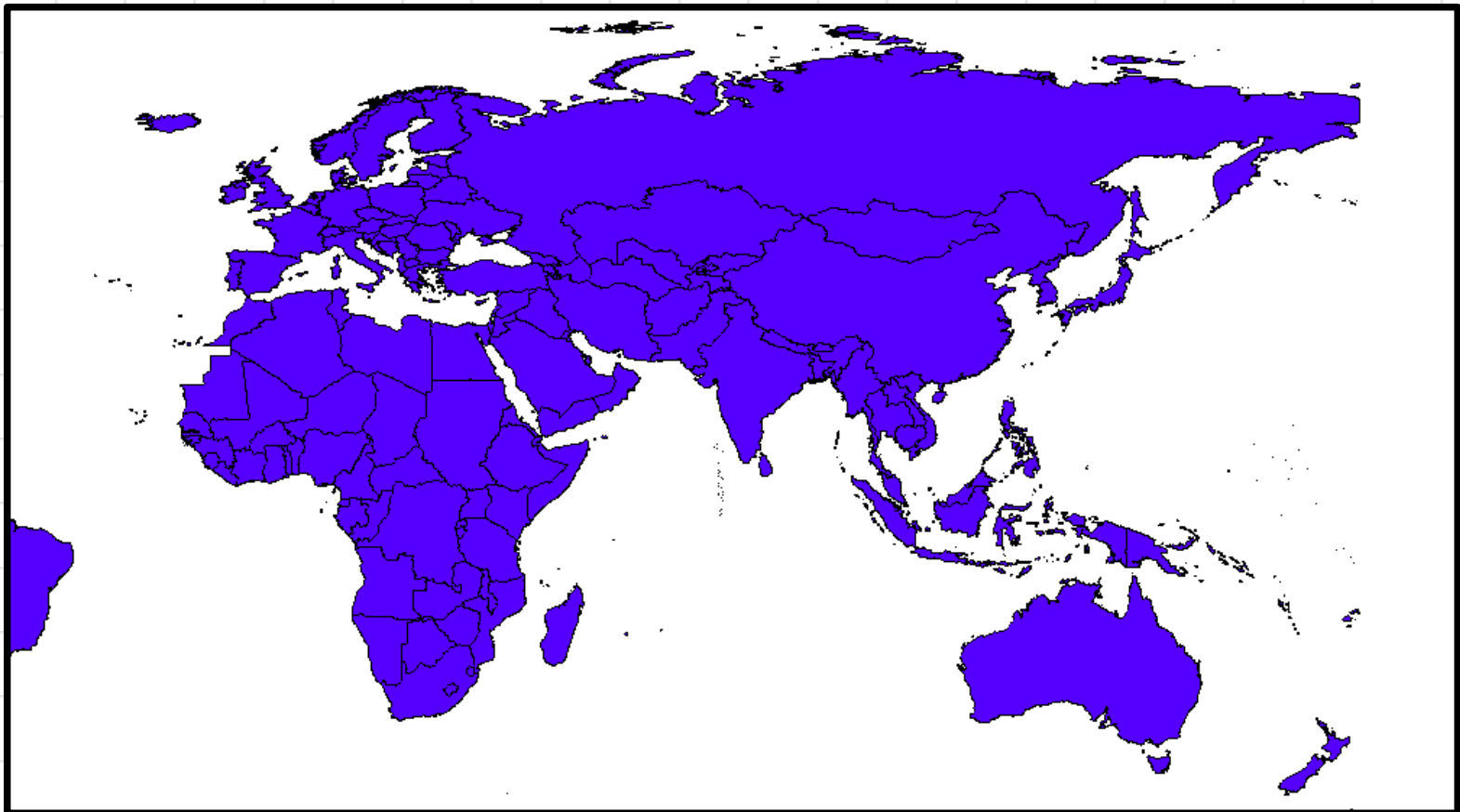
Attribute table

- searching for features
- modifying attribute values
- modifying table structure
 - add field
 - delete field
- identifying objects on map canvas



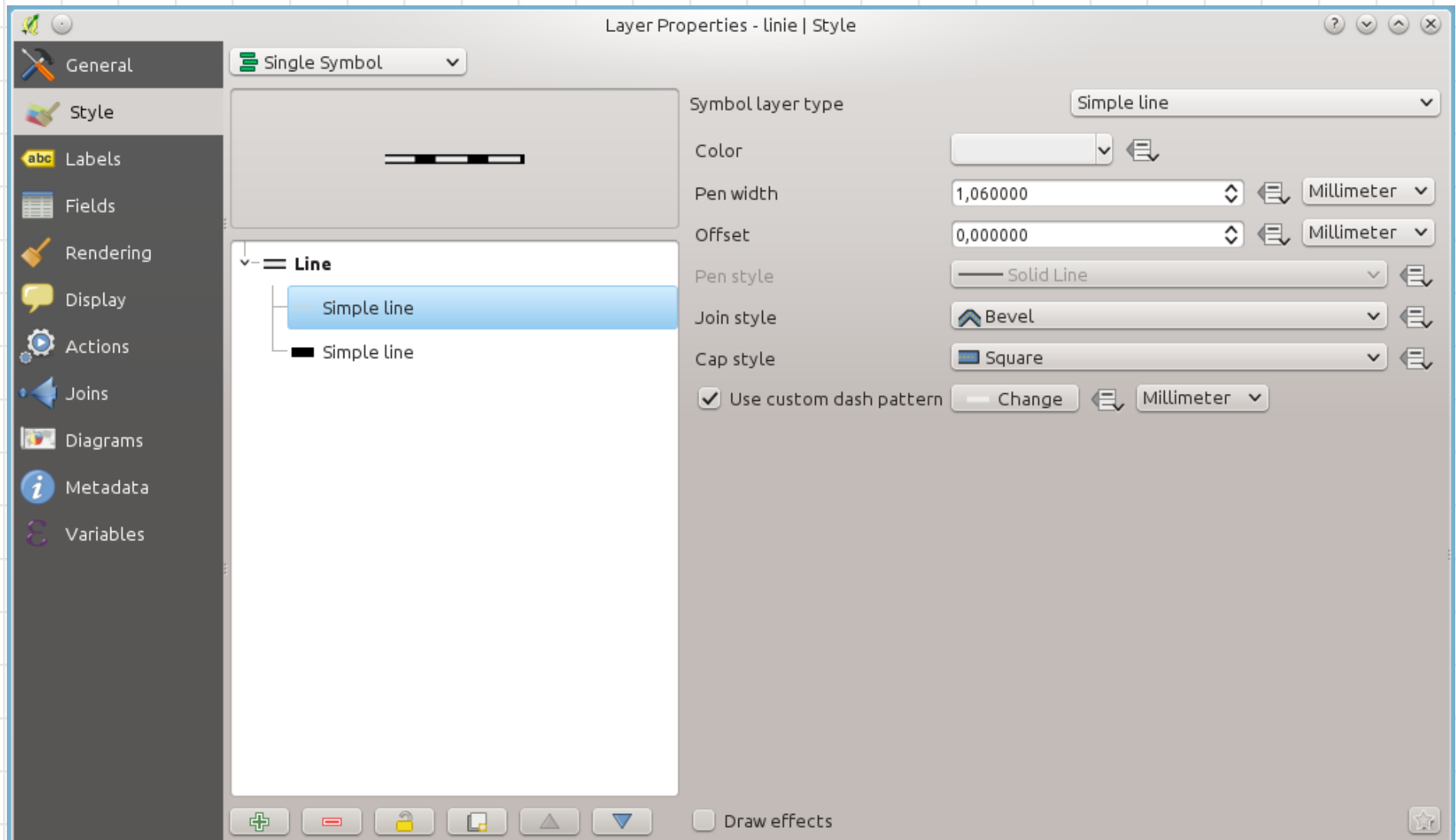
Style (1)

- single symbol
 - the same symbol for all features



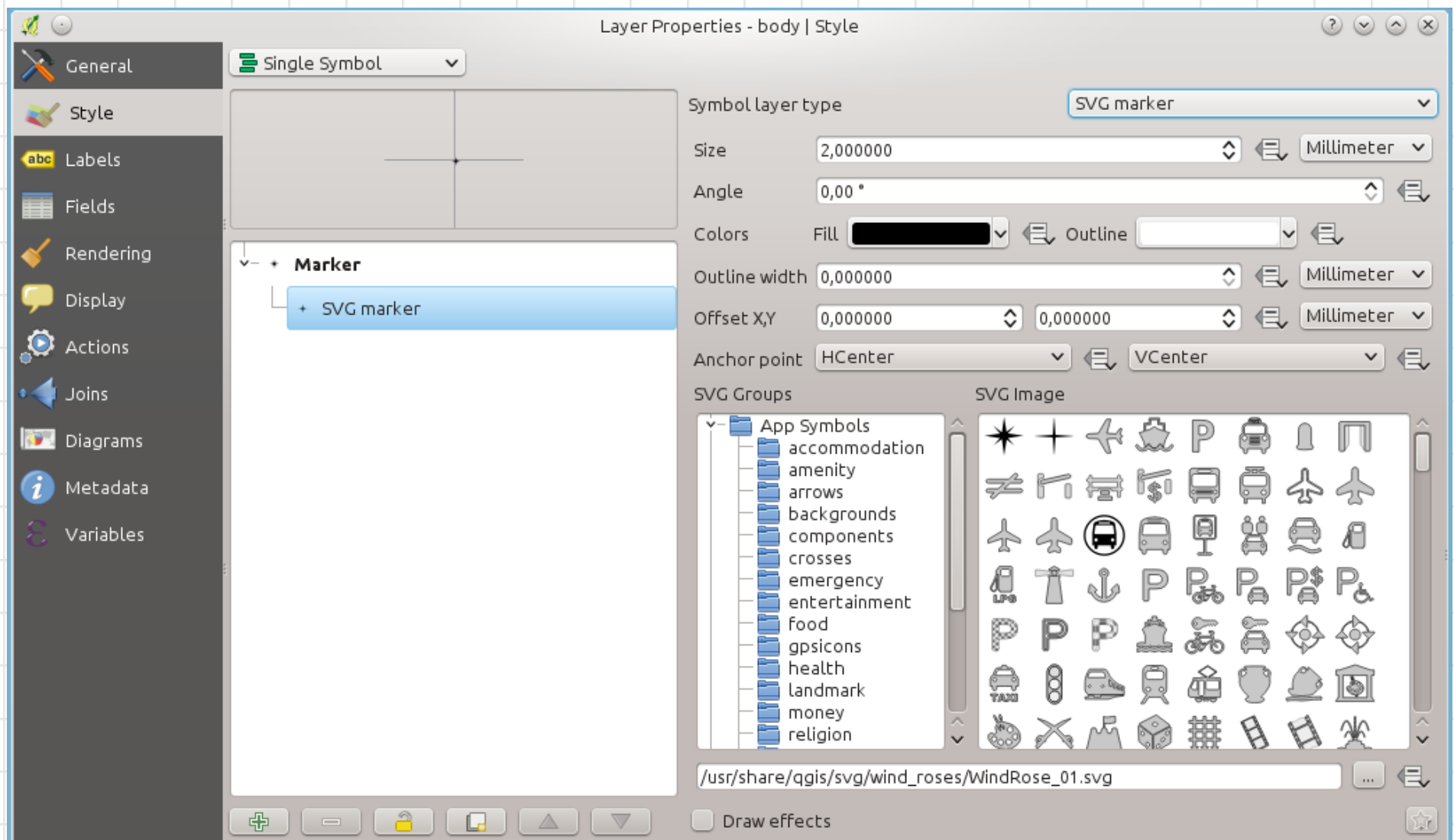
Single symbol

- composite symbol



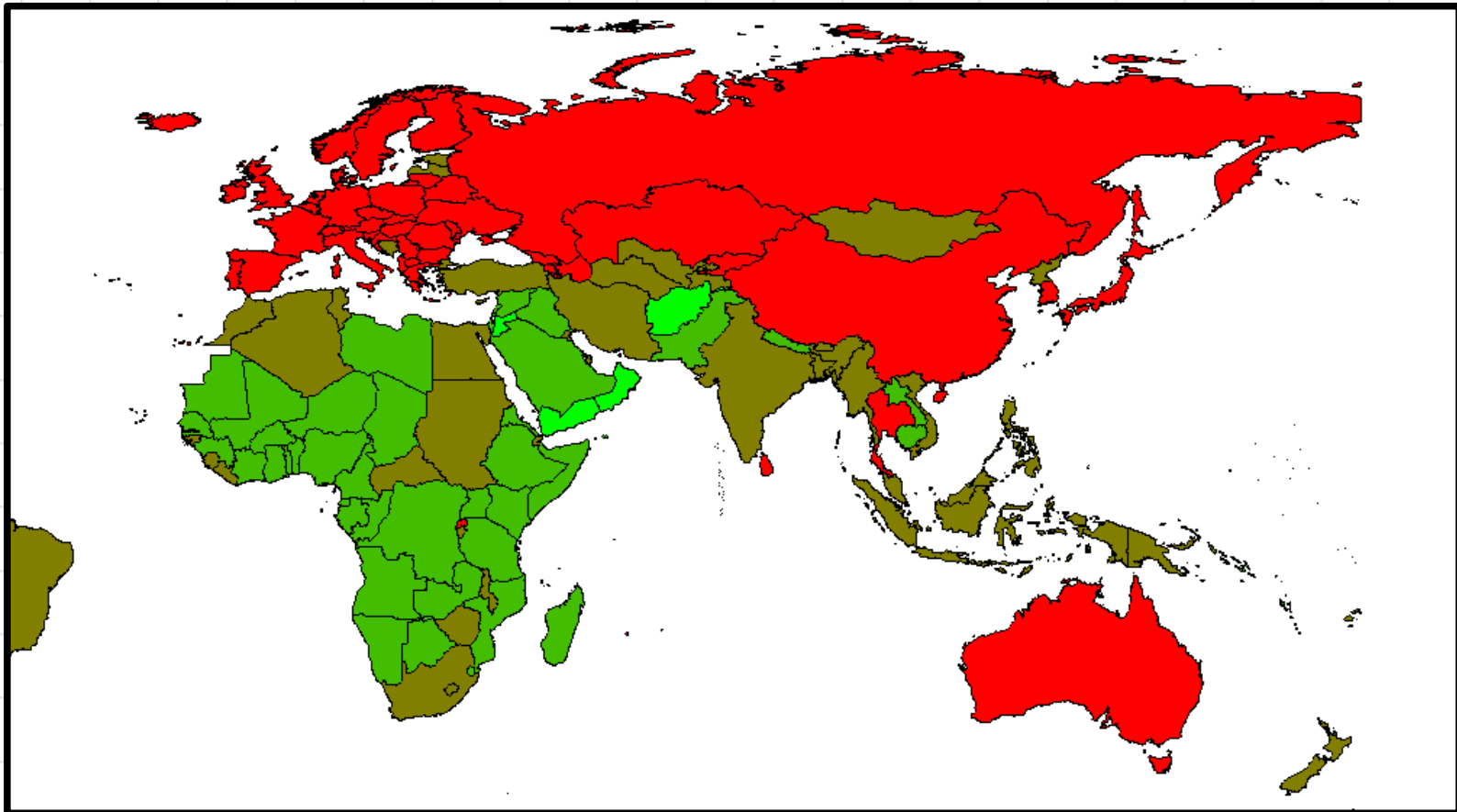
Single symbol

- SVG symbol



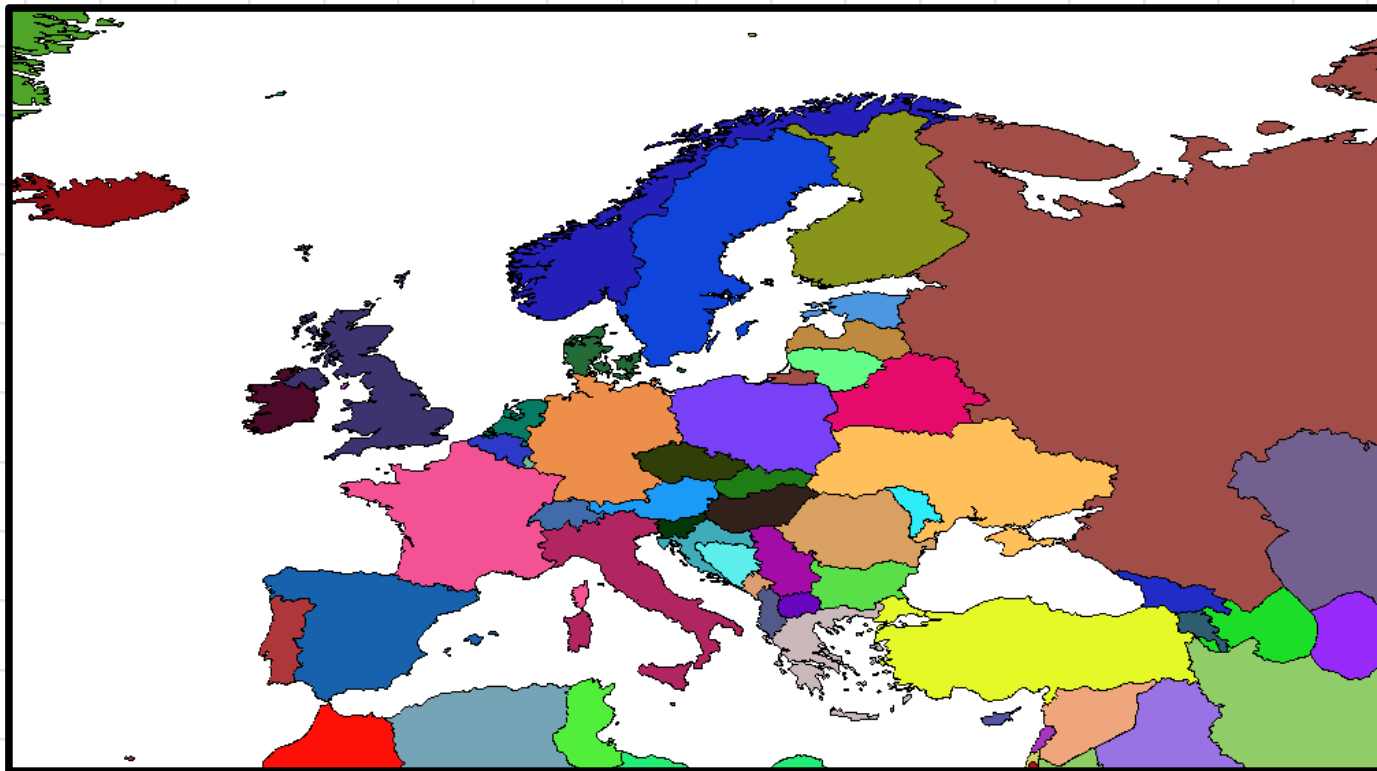
Style (2)

- graduated symbol
 - intervals based on numeric fields



Style (3)

- unique values (categorized symbol)
 - unique symbol for each category
 - based on numeric or text fields



Labels

- description of features from attribute table:

Layer properties → Labels

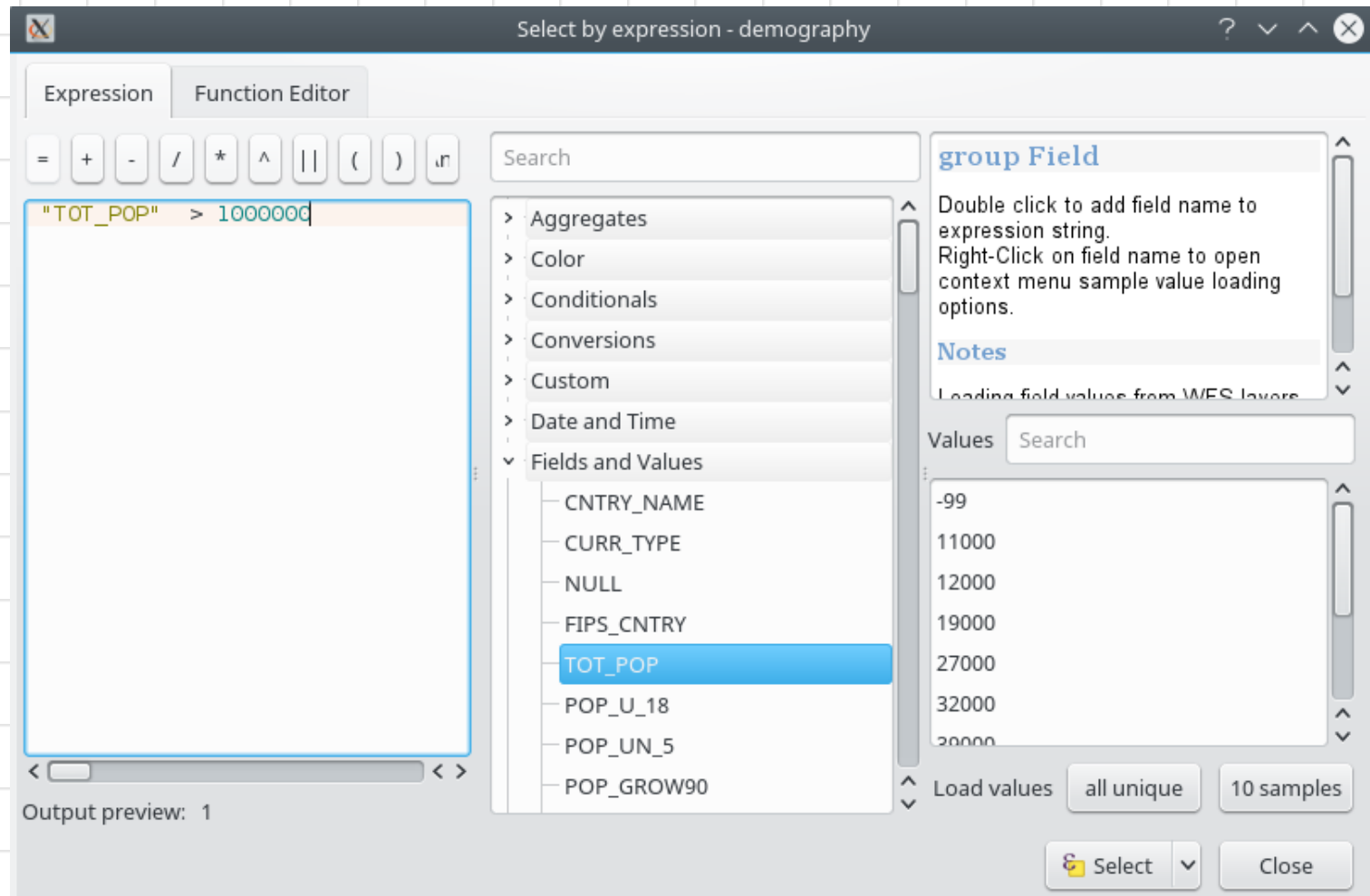
- label settings:
 - text font and size
 - label placement
 - buffer
 - background
 - shadow
 - ...

Filtering (querying)

- select features using an expression (attribute query)
- **SQL (Structured Query Language)**
 - equal =
 - not equal <>
 - less than <
 - greater than >
 - AND, OR (logical operators)

Filtering (querying)

Attribute table → Select features using an expression



The End

Thank you for attention!