

Basic Vector Styling

QGIS Tutorials and Tips



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Geographic Information Systems (GIS) and Remote Sensing

Geographic Information Systems (GIS) and Remote Sensing are tools used to collect, store, analyze, and display spatial data. GIS is a computer-based system that allows users to create maps and analyze spatial data. Remote Sensing is the process of collecting data about the Earth's surface from a distance, typically using satellites or aircraft. Both GIS and Remote Sensing are used in a variety of fields, including urban planning, environmental management, and agriculture. QGIS is a free and open-source GIS software package that provides a graphical user interface to a wide range of GIS data and tools. It is used by a large number of people around the world, and it is a popular choice for both students and professionals.

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Remote Sensing and GIS Data Sources

- Remote Sensing and GIS Data Sources

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lifeexpectancy.zip

lifeexpectancy.zip [SAGE]

Geographic Information Systems (GIS)

1. Geographic Information Systems (GIS) are computer-based systems that allow users to create maps and analyze spatial data. QGIS is a free and open-source GIS software package that provides a graphical user interface to a wide range of GIS data and tools. It is used by a large number of people around the world, and it is a popular choice for both students and professionals.



2. lifeexpectancy.zip newsweek_data.shp WGS84 EPSG:4326 ().



3. **CRS Selection**, **Coordinate Reference System** **WGS 84**, **Authority ID** **EPSG:4326**, **Selected CRS:** **WGS 84**, **PROJ string** **+proj=longlat +datum=WGS84 +no_defs**.



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5. **newweek_data** is a vector layer. It contains a table with the following fields: **LIFEXPCT**, **Life Expectancy** - **newweek_data**.

Attribute table - newweek_data :: Features total: 165, filtered: 165, selected: 0

	GRWRATE	URBPOP	MIG_RATE	POP_15	POP65_	LIFEXPCT	CONTRCEP
0	2.620000000	47.000000000	0.000000000	45.200000000	3.800000000	47.000000000	7.000000000
1	2.660000000	33.000000000	0.000000000	44.900000000	3.100000000	42.000000000	4.000000000
2	1.900000000	53.000000000	-0.400000000	33.200000000	5.100000000	76.000000000	58.000000000
3	0.940000000	35.000000000	-9.900000000	32.300000000	4.000000000	65.000000000	31.000000000
4	3.320000000	46.000000000	2.200000000	46.000000000	3.700000000	55.000000000	6.000000000
5	3.170000000	44.000000000	0.500000000	48.100000000	2.800000000	52.000000000	1.000000000
6	3.360000000	32.000000000	-0.100000000	48.000000000	2.500000000	50.000000000	8.000000000
7	3.400000000	5.000000000	0.700000000	49.800000000	2.300000000	46.000000000	10.000000000
8	2.880000000	8.000000000	0.000000000	46.300000000	2.900000000	48.000000000	9.000000000
9	3.720000000	29.000000000	-0.200000000	47.100000000	2.900000000	46.000000000	1.000000000
10	2.840000000	49.000000000	-0.100000000	48.500000000	2.200000000	49.000000000	1.000000000
11	3.310000000	15.000000000	-7.700000000	49.200000000	2.600000000	45.000000000	7.000000000
12	2.370000000	51.000000000	-0.100000000	39.700000000	3.900000000	59.000000000	30.000000000
13	2.830000000	27.000000000	32.000000000	44.900000000	3.300000000	47.000000000	4.000000000
14	2.970000000	25.000000000	-0.300000000	44.600000000	2.800000000	60.000000000	43.000000000
15	3.180000000	33.000000000	0.000000000	45.000000000	3.400000000	58.000000000	26.000000000
16	1.550000000	84.000000000	0.000000000	30.500000000	6.400000000	72.000000000	43.000000000
17	2.920000000	25.000000000	0.000000000	44.900000000	3.300000000	68.000000000	33.000000000
18	2.690000000	46.000000000	0.000000000	39.600000000	3.600000000	67.000000000	48.000000000
19	2.370000000	60.000000000	0.200000000	37.500000000	4.000000000	62.000000000	48.000000000
20	2.680000000	30.000000000	0.000000000	42.500000000	3.100000000	57.000000000	20.000000000
21	2.470000000	9.000000000	0.000000000	40.700000000	3.900000000	56.000000000	5.000000000

Show All Features

6. **GRWRATE** **URBPOP** **MIG_RATE**. **POP_15** **POP65_** **LIFEXPCT** **CONTRCEP**
GRWRATE **URBPOP** **MIG_RATE** **POP_15** **POP65_** **LIFEXPCT** **CONTRCEP**.



7. The first step in the process of creating a new layer is to define the data source. This can be done by clicking on the 'Add New Layer' button in the Layers panel. The next step is to select the data source type, which can be either a vector layer (e.g., shapefile, geodatabase) or a raster layer (e.g., GeoTIFF, NetCDF). Once the data source type is selected, the user is prompted to provide the file path or database connection details. After the data source is defined, the user can choose the layer's name and the coordinate reference system (CRS) to use. Finally, the layer is added to the map, and the user can proceed to style and symbology settings.



8. The 'Layer Properties' dialog box is used to configure the appearance of a layer in a map. It contains several tabs, including 'General', 'Style', 'Labels', 'Fields', 'Display', 'Actions', 'Joins', 'Diagrams', and 'Metadata'. The 'Style' tab is used to define the visual representation of the layer's data. This includes setting the layer's transparency, blending mode, and the type of symbol used to represent the data. The 'Symbol' section allows users to choose from various symbol types (e.g., Single Symbol, Categorized, Graduated, Rule-based, Point displacement) and to select a specific symbol from a list of predefined styles or to create a new one. The 'Symbol layers' section is used to manage the layer's symbology, including adding, removing, and reordering symbols. The 'Saved styles' section provides a list of predefined symbols that can be applied to the layer. The 'Layer rendering' section allows users to control how the layer is rendered, including setting the layer's transparency and blending mode. The 'Layer Properties' dialog box is a key tool for customizing the appearance of a map and for ensuring that the data is presented clearly and accurately.

9. **THE UNDERSIGNED, JOHN JAMES HARRIS, OF THE COUNTY OF ALBANY, STATE OF NEW YORK, DO HEREBY CERTIFY THAT THE ABOVE-NAMED PERSONS ARE THE ONLY PERSONS WHOSE NAMES ARE ENTERED IN THE REGISTER OF VOTERS FOR THE ELECTION OF DELEGATES TO THE CONVENTION OF THE PEOPLE OF THE STATE OF NEW YORK, TO BE HELD AT ALBANY, ON THE 15TH DAY OF JUNE, 1894.**



11.

1. The first step is to open the 'Layer Properties' dialog for the layer you want to style. In this case, it's 'newswk_data'.

2. The 'Style' tab is selected. Under 'Layer rendering', the 'Categorized' method is chosen. The 'Column' dropdown is set to 'LIFEXPCT'.

3. The 'Symbol' dropdown is set to 'Change...'. The 'Color ramp' is set to 'Blues'.

4. A table of values and labels is displayed. The values range from -99 to 56, and the labels are the same as the values.

5. The 'Classify' button is highlighted with a red box.

6. The 'OK' button is highlighted with a red box and a mouse cursor.

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-: R's pretty algorithm.
-: R's pretty algorithm.

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Note

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Layer Properties - newweek_data

General

Style

Labels

Fields

Display

Actions

Joins

Diagrams

Metadata

Style

Layer rendering

Layer transparency

Layer blending mode

Feature blending mode

Graduated

Column

LIFEXPCT

Symbol

Change...

Color ramp

[source]

Classes

Mode

Quantile (Equal Count)

Symbol	Value	Label
	-99.0000 - 55.6667	-99.0000 - 55.6667
	55.6667 - 70.0000	55.6667 - 70.0000
	70.0000 - 79.0000	70.0000 - 79.0000

Classify

Add class

Delete

Delete all

Advanced

Restore Default Style

Save As Default

Load Style ...

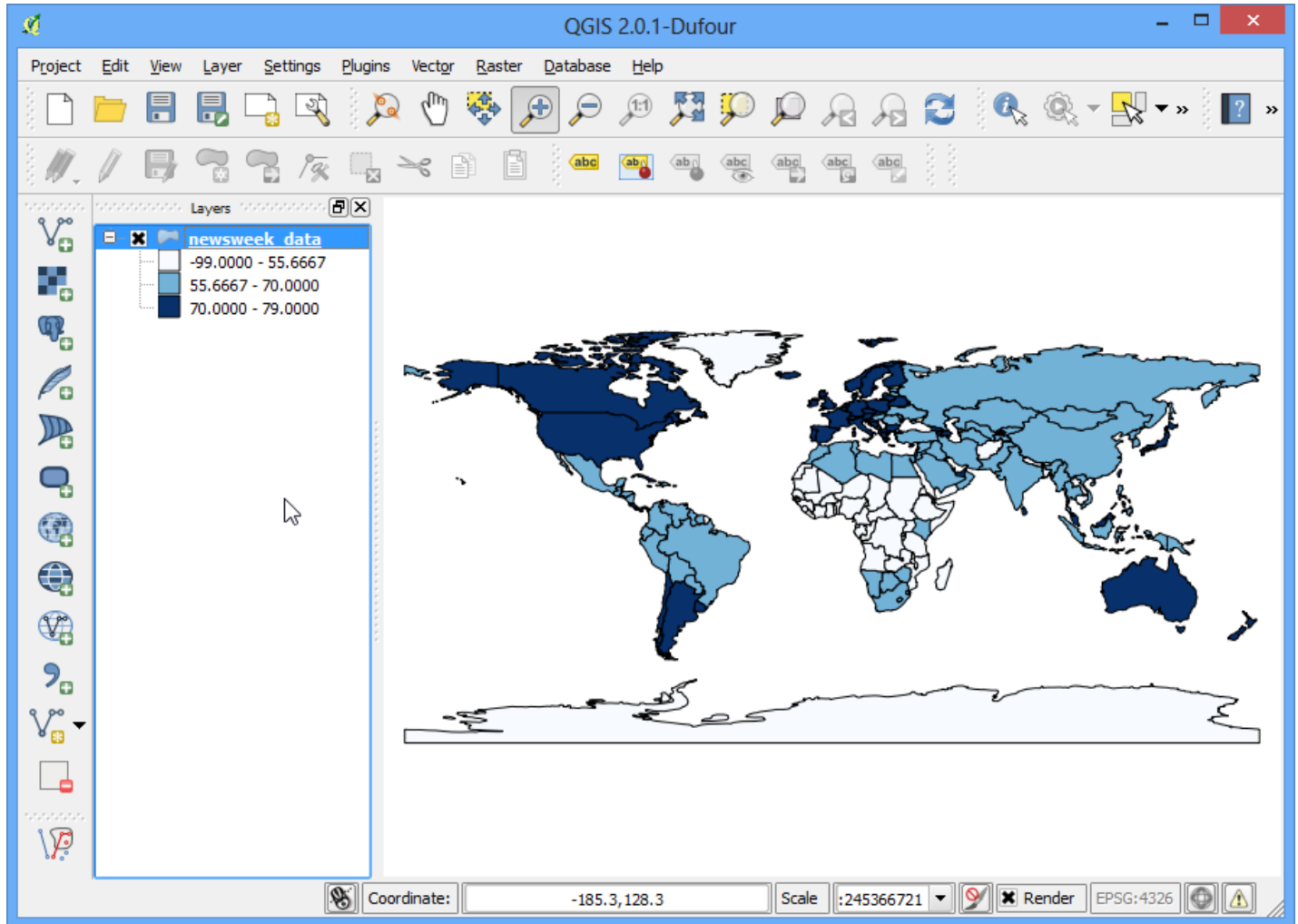
Save Style

OK

Cancel

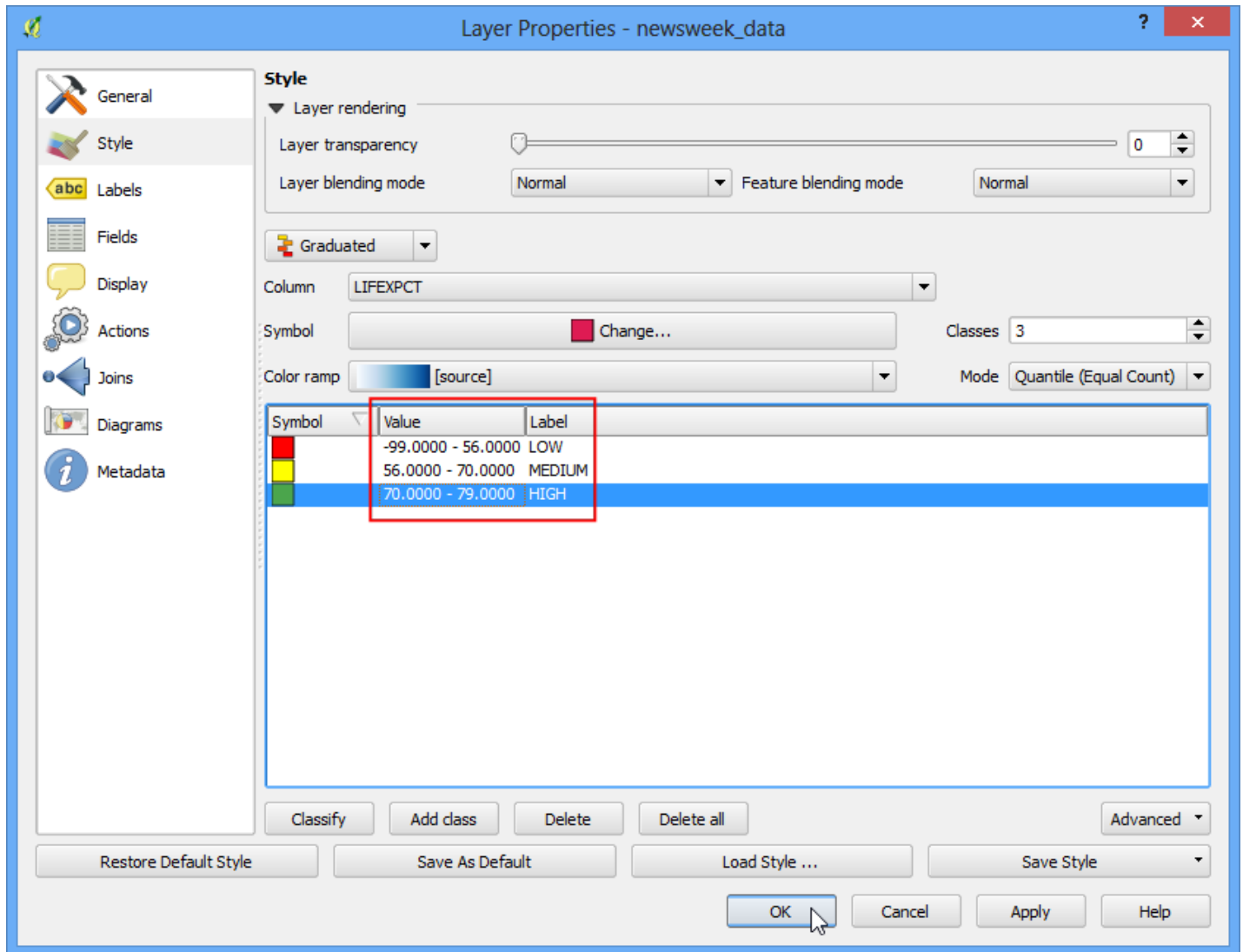
Apply

Help

[illegible]

14. **СООБЩАЮЩИЙ ЗАЯВЛЯЕТ, ЧТО НЕ ИМЕЕТ НИКАКИХ ОТНОШЕНИЙ К ПРЕДСТАВЛЯЕМЫМ ДОКУМЕНТАМ, НЕ СОВЕРШАЛ НИКАКИХ ДЕЙСТВИЙ ПО ОТНОШЕНИЮ К НИМ, НЕ ПОЛУЧАЛ НИКАКИХ ПОДСКАЗОК ИЛИ ПОМОЩИ В ОТНОШЕНИИ ИХ ПОИСКА ИЛИ ПОЛУЧЕНИЯ. НЕ ИМЕЕТ НИКАКИХ ОТНОШЕНИЙ К ЛИЦАМ, КОТОРЫЕ МОГУТ ИМЕТЬ ОТНОШЕНИЕ К ПРЕДСТАВЛЯЕМЫМ ДОКУМЕНТАМ, НЕ ПОЛУЧАЛ НИКАКИХ ПОДСКАЗОК ИЛИ ПОМОЩИ В ОТНОШЕНИИ ИХ ПОИСКА ИЛИ ПОЛУЧЕНИЯ. НЕ ИМЕЕТ НИКАКИХ ОТНОШЕНИЙ К ЛИЦАМ, КОТОРЫЕ МОГУТ ИМЕТЬ ОТНОШЕНИЕ К ПРЕДСТАВЛЯЕМЫМ ДОКУМЕНТАМ, НЕ ПОЛУЧАЛ НИКАКИХ ПОДСКАЗОК ИЛИ ПОМОЩИ В ОТНОШЕНИИ ИХ ПОИСКА ИЛИ ПОЛУЧЕНИЯ. НЕ ИМЕЕТ НИКАКИХ ОТНОШЕНИЙ К ЛИЦАМ, КОТОРЫЕ МОГУТ ИМЕТЬ ОТНОШЕНИЕ К ПРЕДСТАВЛЯЕМЫМ ДОКУМЕНТАМ, НЕ ПОЛУЧАЛ НИКАКИХ ПОДСКАЗОК ИЛИ ПОМОЩИ В ОТНОШЕНИИ ИХ ПОИСКА ИЛИ ПОЛУЧЕНИЯ.**

17. The following steps describe how to create a graduated color style for the newsweek_data layer. The first step is to click the Style button in the Layer Properties dialog box. The second step is to click the Graduated button in the Style section. The third step is to click the Column button and select LIFEXPCT. The fourth step is to click the Color ramp button and select [source]. The fifth step is to click the Classes button and select 3. The sixth step is to click the Mode button and select Quantile (Equal Count). The seventh step is to click the Symbol button and select Change... The eighth step is to click the Value button and select -99.0000 - 56.0000. The ninth step is to click the Label button and select LOW. The tenth step is to click the Value button and select 56.0000 - 70.0000. The eleventh step is to click the Label button and select MEDIUM. The twelfth step is to click the Value button and select 70.0000 - 79.0000. The thirteenth step is to click the Label button and select HIGH. The fourteenth step is to click the OK button.



18. The following steps describe how to create a graduated color style for the newsweek_data layer. The first step is to click the Style button in the Layer Properties dialog box. The second step is to click the Graduated button in the Style section. The third step is to click the Column button and select LIFEXPCT. The fourth step is to click the Color ramp button and select [source]. The fifth step is to click the Classes button and select 3. The sixth step is to click the Mode button and select Quantile (Equal Count). The seventh step is to click the Symbol button and select Change... The eighth step is to click the Value button and select -99.0000 - 56.0000. The ninth step is to click the Label button and select LOW. The tenth step is to click the Value button and select 56.0000 - 70.0000. The eleventh step is to click the Label button and select MEDIUM. The twelfth step is to click the Value button and select 70.0000 - 79.0000. The thirteenth step is to click the Label button and select HIGH. The fourteenth step is to click the OK button.

