

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 applications, including urban planning, environmental management, and disaster response.

Geographic Information Systems (GIS)

GIS is a computer-based system that allows users to create maps and analyze spatial data. It consists of several components, including data, software, and hardware. Data is the raw information collected from the field or from other sources. Software is the program that allows users to interact with the data. Hardware is the physical equipment used to store and process the data.

Remote Sensing and GIS Applications

- Remote Sensing and GIS are used in a variety of applications, including:

Urban Planning and Management

Urban planning and management is one of the most common applications of GIS and Remote Sensing. GIS is used to create maps of urban areas, showing the location of buildings, roads, and other features. Remote Sensing is used to collect data about the urban environment, such as the amount of vegetation or the amount of impervious surface. This data is then used to make decisions about urban development and management.

GIS is also used to analyze spatial data and to create maps that show the results of the analysis. For example, GIS can be used to create maps that show the distribution of population or the location of schools. Remote Sensing is used to collect data about the urban environment, such as the amount of vegetation or the amount of impervious surface. This data is then used to make decisions about urban development and management.

lifeexpectancy.zip

lifeexpectancy [SAGE]

Geographic Information Systems (GIS)

1. Geographic Information Systems (GIS) are used to store, analyze, and display spatial data. They are used in a variety of applications, including urban planning, environmental management, and disaster response.



2. ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■ lifeexpectancy.zip ■ ■■■■■■■■ ■■■■■■■■■■. ■■■■■■■■■■ newswk_data.shp ■ ■■■■■ ■■■■■■■■■■ ■■■■■■■■■■. ■■■■■ ■■■■■ ■■■■■■■■■■ ■■■■. ■■■■■■■■■■ WGS84 EPSG:4326 ■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ ■■■■■■■■■■ (■■■■).



3. **WGS 84** is the most common CRS used in GIS applications. It is a geocentric CRS, meaning its origin is at the center of the Earth. It is also a datum, which means it defines the shape and size of the Earth and the location of its center. WGS 84 is used for most GPS data and is the standard CRS for most GIS applications.



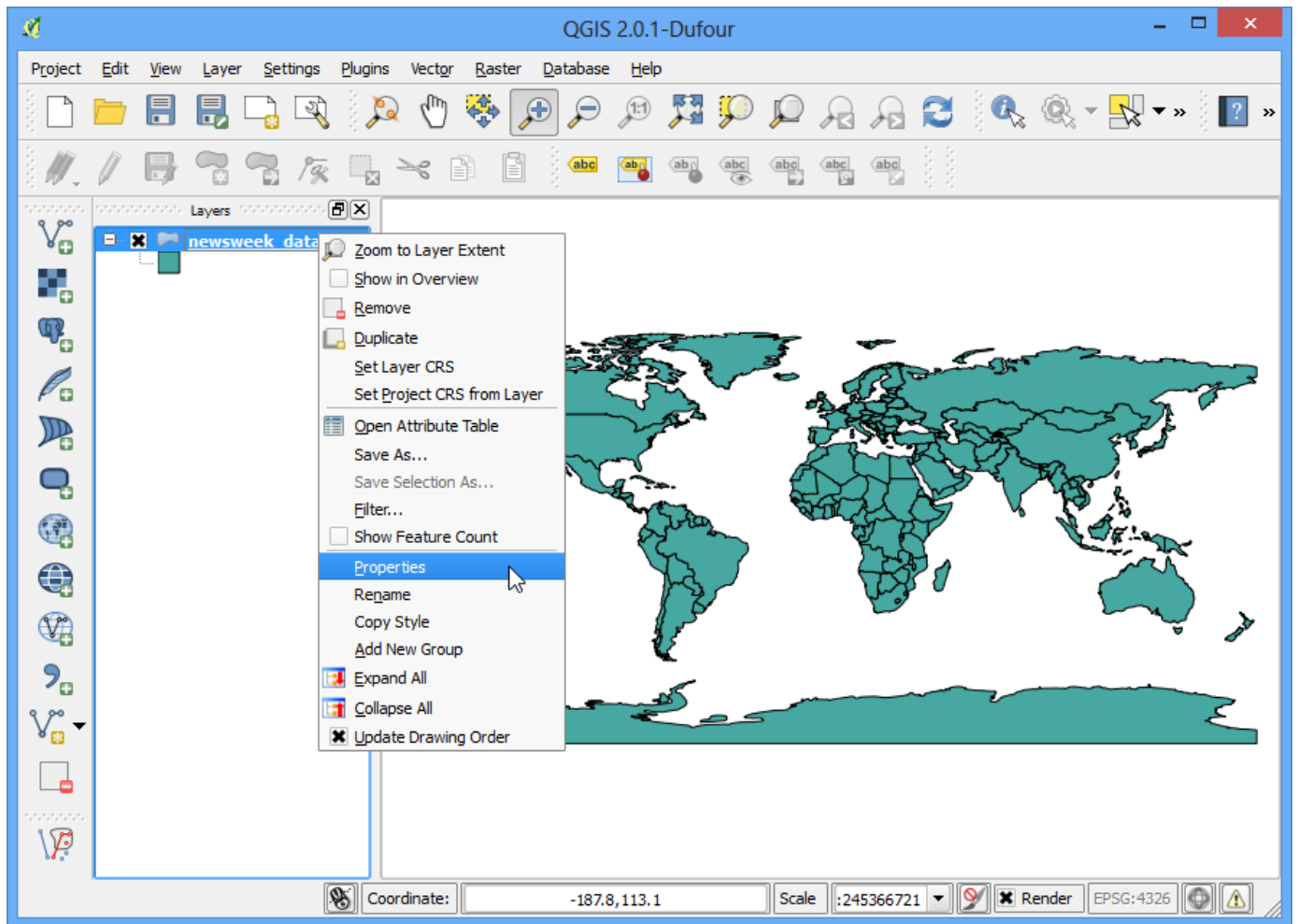
4. ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■ ■■■■■■ ■■■■■ ■ ■■■■■■■■■■
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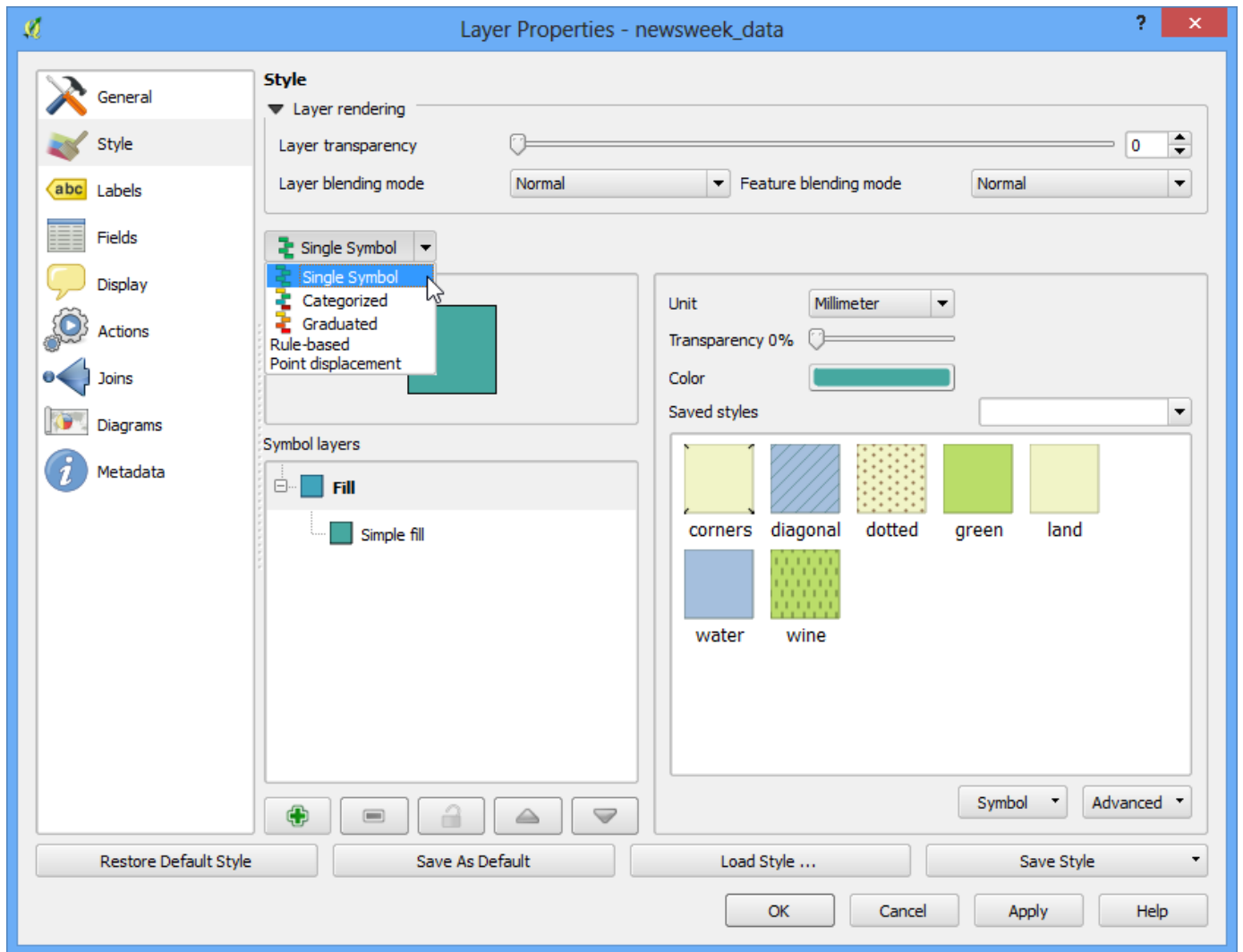
	GRWRATE	URBPOP	MIG_RATE	POP_15	POP65_	LIFEXPCT	CONTRCEP
0	2.620000000	47.000000000	0.000000000	45.200000000	3.800000000	47.000000000	7.000000000
1	2.660000000	33.000000000	0.000000000	44.900000000	3.100000000	42.000000000	4.000000000
2	1.900000000	53.000000000	-0.400000000	33.200000000	5.100000000	76.000000000	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. **■■■■■■■■■■ ■■■■■■■■■ ■■■■■■■■■■. ■■■■■ ■■■■■■■■■ ■■■■■■■ ■■■■■■■■■**
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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 or a raster layer. Once the data source type is selected, the user is prompted to select the data source file. After selecting the file, the user is prompted to define the layer's CRS. Finally, the user is prompted to define the layer's name and symbology.



8. The 'Layer Properties' dialog box is used to configure the appearance of a layer. It contains several tabs, including 'General', 'Style', 'Labels', 'Fields', 'Display', 'Actions', 'Joins', 'Diagrams', and 'Metadata'. The 'Style' tab is used to define the symbology for a layer. It includes options for 'Layer rendering' (e.g., 'Single Symbol', 'Categorized', 'Graduated', 'Rule-based', 'Point displacement'), 'Layer transparency', 'Layer blending mode', 'Feature blending mode', 'Unit', 'Transparency', 'Color', and 'Saved styles'. The 'Saved styles' section provides a collection of predefined styles for various features, such as 'corners', 'diagonal', 'dotted', 'green', 'land', 'water', and 'wine'.



10. The first step in the process of creating a map is to define the data. This is done by specifying the data source and the data format. The data source can be a file, a database, or a web service. The data format can be a vector format (e.g., shapefile) or a raster format (e.g., GeoTIFF). The next step is to load the data into the map. This is done by clicking on the 'Load Data into Map' button in the 'Layers' panel. The data will then be displayed on the map. The final step is to save the map. This is done by clicking on the 'Save Map' button in the 'Layers' panel. The map will then be saved as a file.



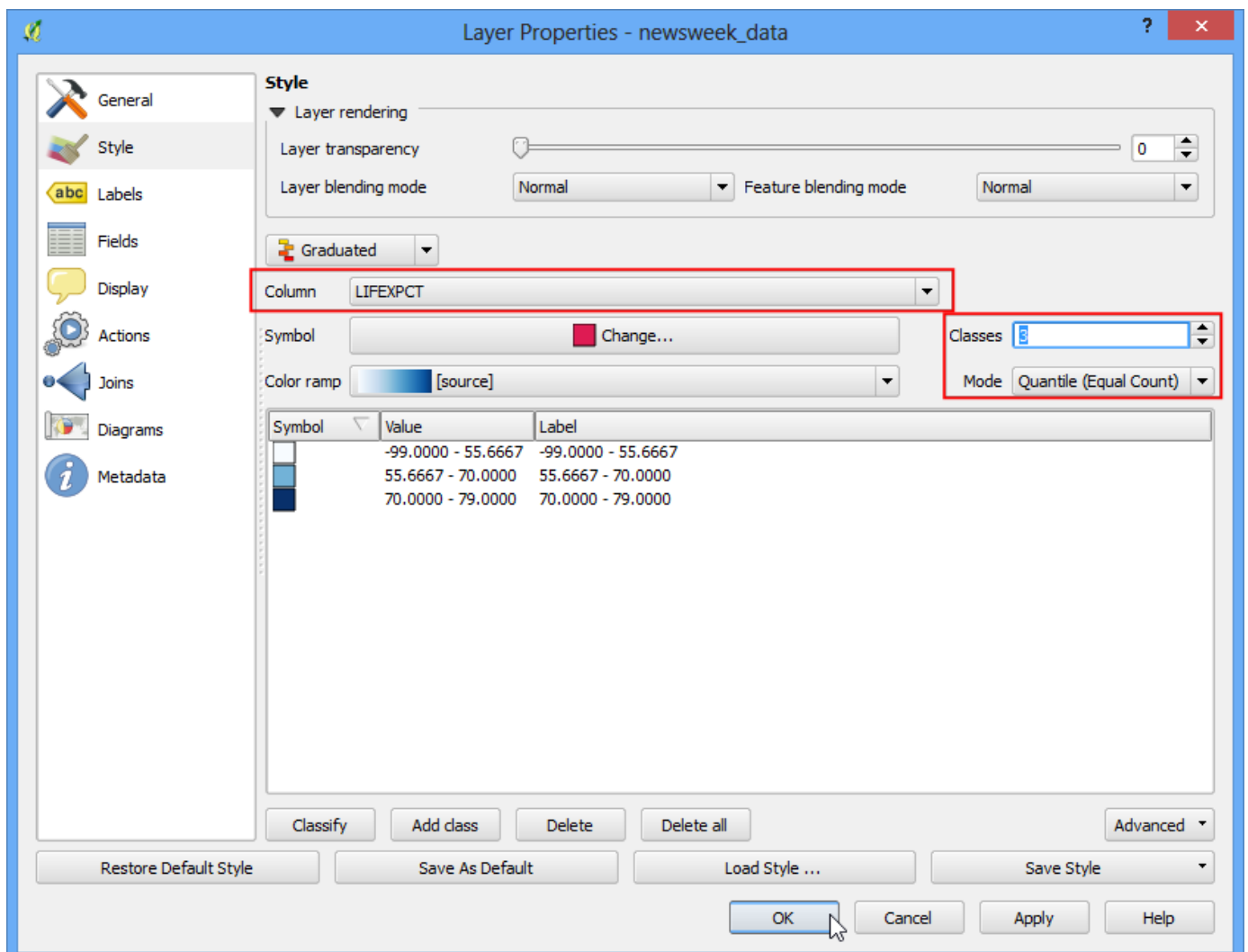
11. The 'Layer Properties' dialog box is used to modify the style of a layer. The 'Style' tab is used to select a style and a color ramp. The 'Classify' button is used to create a new style based on the values in the 'Column' dropdown. The 'OK' button is used to apply the changes.

- **Quantitative data visualization:** Quantitative data visualization involves representing numerical data in a way that allows for comparison and analysis. This can be done using various techniques, such as bar charts, line graphs, and scatter plots. The goal is to make the data easy to understand and interpret.
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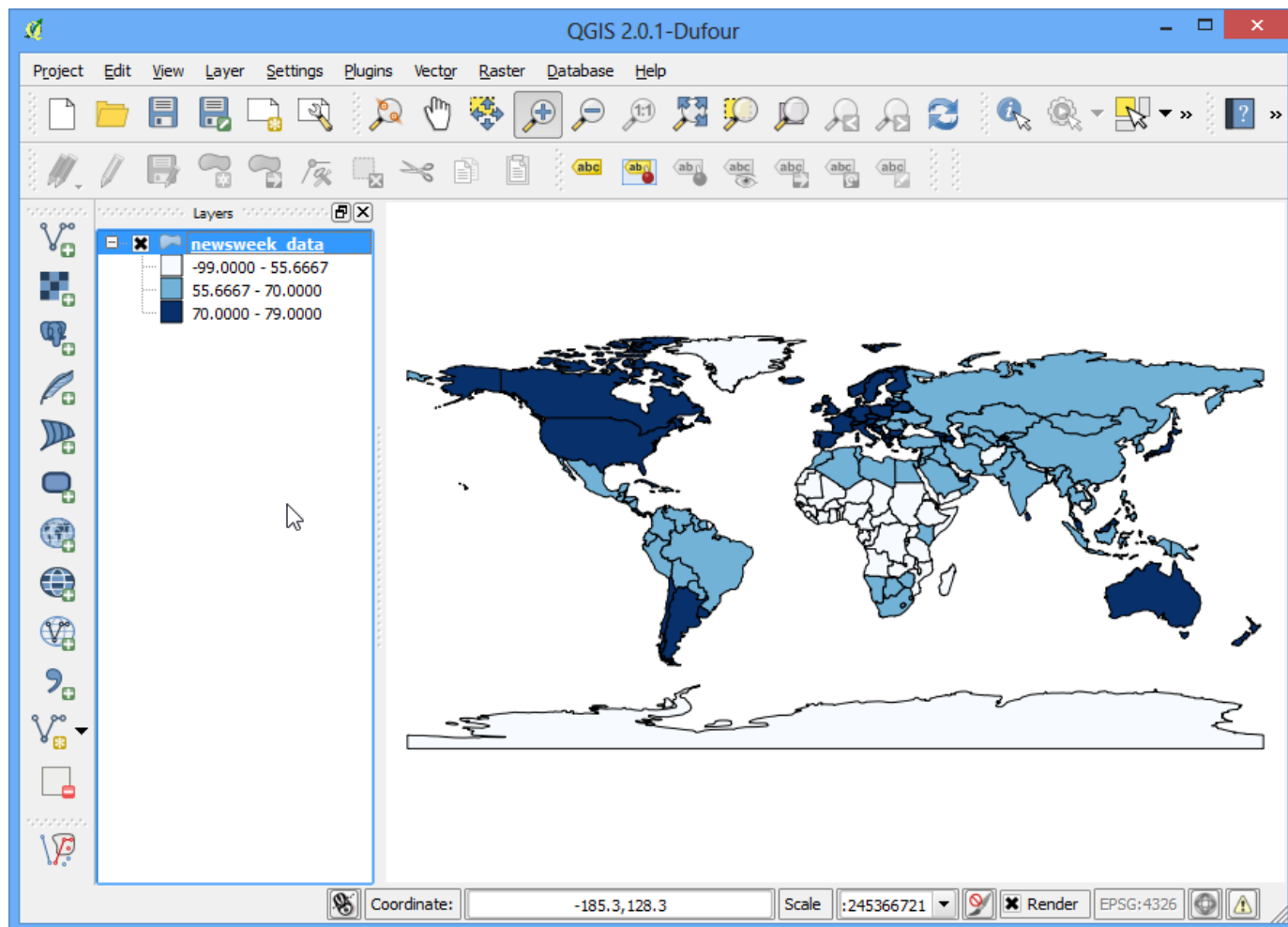
Quantitative data visualization involves representing numerical data in a way that allows for comparison and analysis. This can be done using various techniques, such as bar charts, line graphs, and scatter plots. The goal is to make the data easy to understand and interpret.

Note

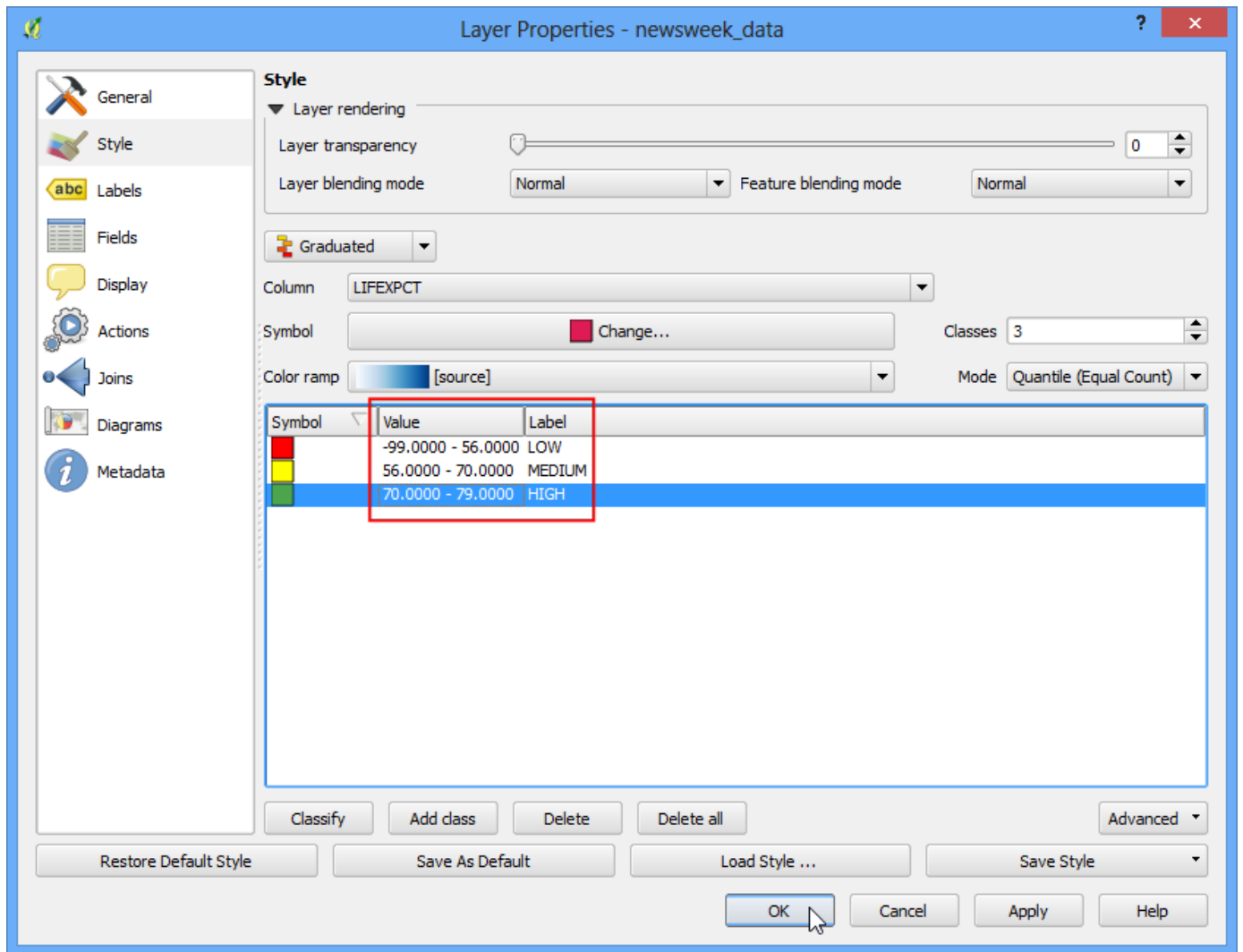
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13. Quantitative data visualization involves representing numerical data in a way that allows for comparison and analysis. This can be done using various techniques, such as bar charts, line graphs, and scatter plots. The goal is to make the data easy to understand and interpret.



14. The following table shows the number of new weekly cases of COVID-19 in the United States by state for the week ending March 22, 2020. The data is presented in a table with 5 columns: State, New Cases, Total Cases, Deaths, and Recovery Rate. The table is sorted by the number of new cases in descending order.



18. The 'Layer Properties' dialog box is used to modify the style of a layer. The 'Style' tab is used to set the layer's symbology. The 'Layer rendering' section allows you to set the layer's transparency and blending mode. The 'Column' dropdown menu is used to select the attribute to be used for symbology. The 'Color ramp' dropdown menu is used to select the color ramp to be used. The 'Classes' dropdown menu is used to select the number of classes. The 'Mode' dropdown menu is used to select the mode. The 'Symbol' button is used to open the 'Symbol' dialog box. The 'Classify' button is used to classify the data. The 'Add class' button is used to add a new class. The 'Delete' button is used to delete a class. The 'Delete all' button is used to delete all classes. The 'Load Style ...' button is used to load a style. The 'Save As Default' button is used to save the style as the default. The 'Save Style' button is used to save the style. The 'OK' button is used to apply the changes. The 'Cancel' button is used to cancel the changes. The 'Apply' button is used to apply the changes. The 'Help' button is used to get help.

