

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 user interface for GIS data.

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lifeexpectancy.zip

lifeexpectancy.zip [SAGE]

Geographic Information Systems (GIS)

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



3. **WGS 84** is the most common CRS used for web maps. It is a geocentric CRS, meaning that the origin is at the center of the Earth. The datum is WGS 84, and the projection is a pseudo-cylindrical projection called the Mercator projection. The units are in meters.



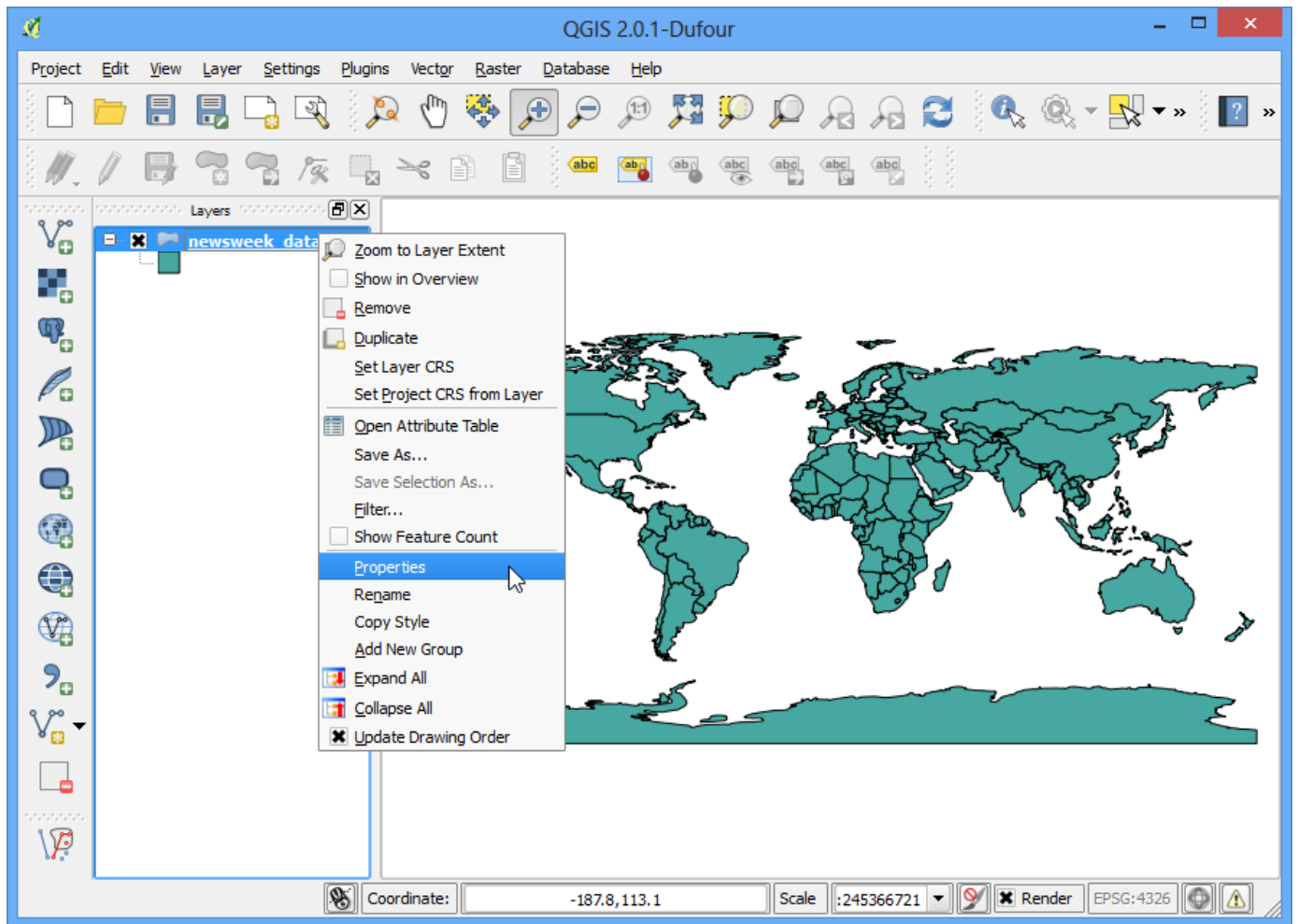
4. ■■■■■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■■ ■■ ■■■■■■ ■■■■■ ■ ■■■■■■■■■■
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Attribute table - newweek_data :: Features total: 165, filtered: 165, selected: 0

	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

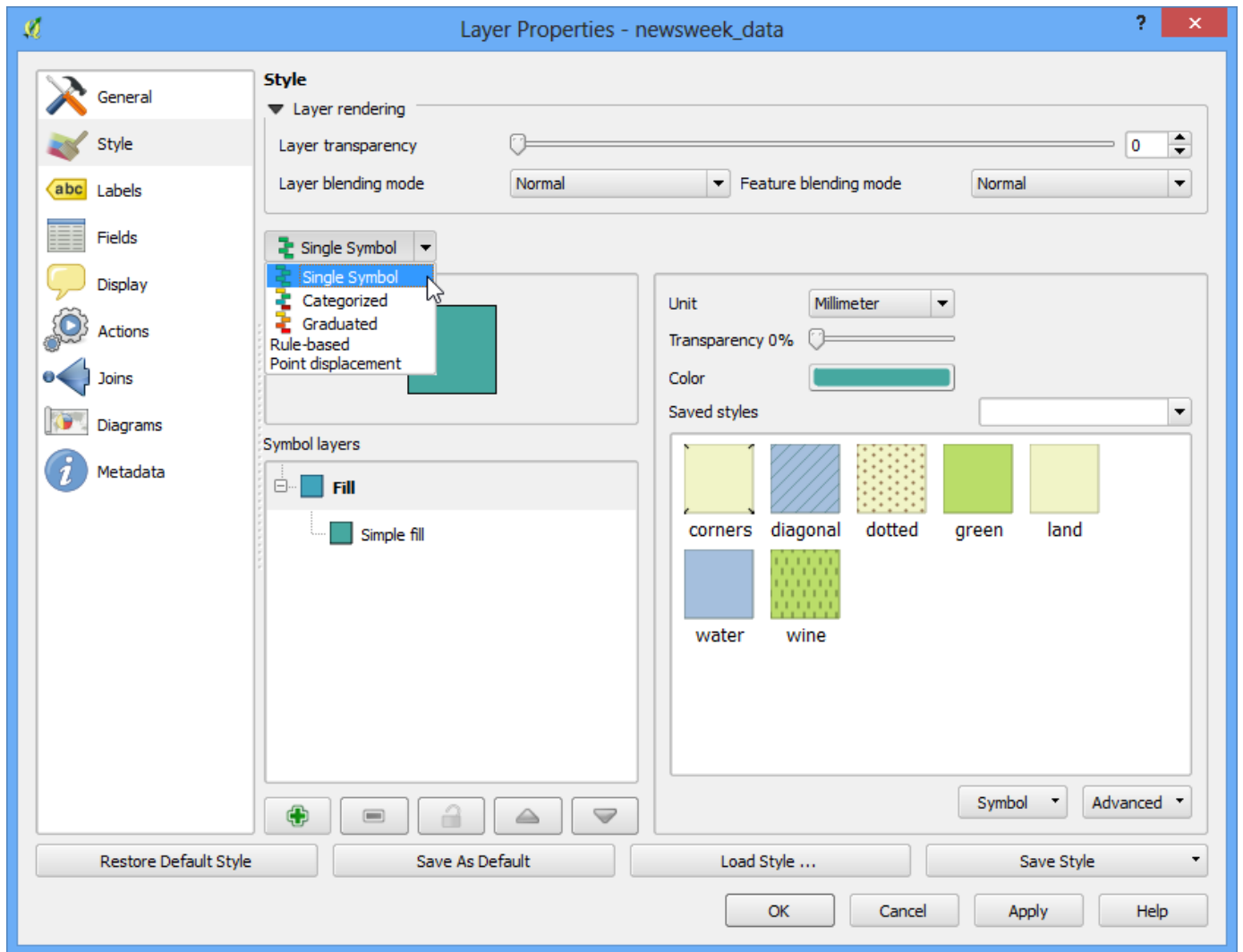
Show All Features

6. **newweek_data** is a **table** with **165** features. **LIFEXPCT** is a **feature** in **newweek_data**.



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. Once the data source is defined, the next step is to define the layer's properties. This includes setting the layer's name, color, and style. The final step is to save the layer as a new file.



8.

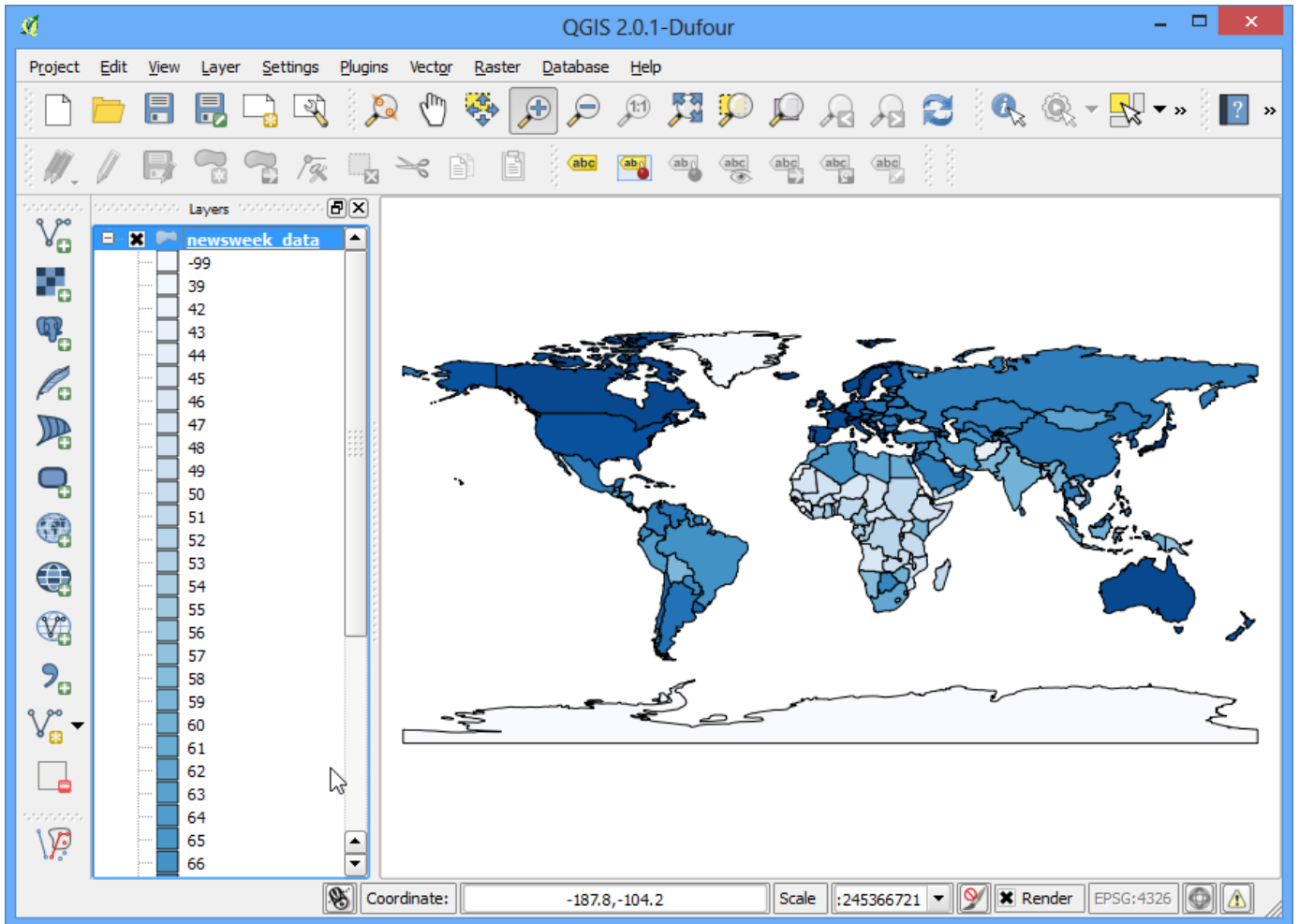
The 'Layer Properties' dialog box is used to configure the appearance and behavior of a layer in QGIS. It is divided into several tabs, including 'General', 'Style', 'Labels', 'Fields', 'Display', 'Actions', 'Joins', 'Diagrams', and 'Metadata'. The 'Style' tab is currently selected, showing options for 'Layer rendering' (transparency, blending mode) and 'Symbol layers'. A dropdown menu for 'Single Symbol' is open, showing options like 'Single Symbol', 'Categorized', 'Graduated', 'Rule-based', and 'Point displacement'. The 'Symbol layers' section shows a 'Fill' layer with a 'Simple fill' symbol. The 'Saved styles' section displays various predefined styles like 'corners', 'diagonal', 'dotted', 'green', 'land', 'water', and 'wine'. At the bottom are buttons for 'Restore Default Style', 'Save As Default', 'Load Style ...', 'Save Style', 'OK', 'Cancel', 'Apply', and 'Help'.



10. 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 in this case is a vector layer. After selecting the data source type, the user is prompted to select the data source file. The user should navigate to the location of the data source file and select it. Once the data source file is selected, the user is prompted to define the layer's name and properties. The user should enter a name for the layer and select the appropriate properties. Finally, the user should click on the 'Add' button to add the layer to the map. The layer will then be displayed on the map.



11. The 'Layer Properties' dialog box is used to modify the style of a layer. In this case, the 'Style' tab is selected, and the 'Categorized' option is chosen. The 'Column' dropdown is set to 'LIFEXPCT'. The 'Classify' button is highlighted with a red box. The 'OK' button is also highlighted with a red box.



12. **Graded** **Style** **classes** **Column** **Mode options** available. **Equal**, **Quantile**, **Natural** (Jenks), **Standard** **Pretty** **classes** **Column** **Mode options** available. **Equal**, **Quantile**, **Natural** (Jenks), **Standard** **Pretty** **classes** **Column** **Mode options** available.

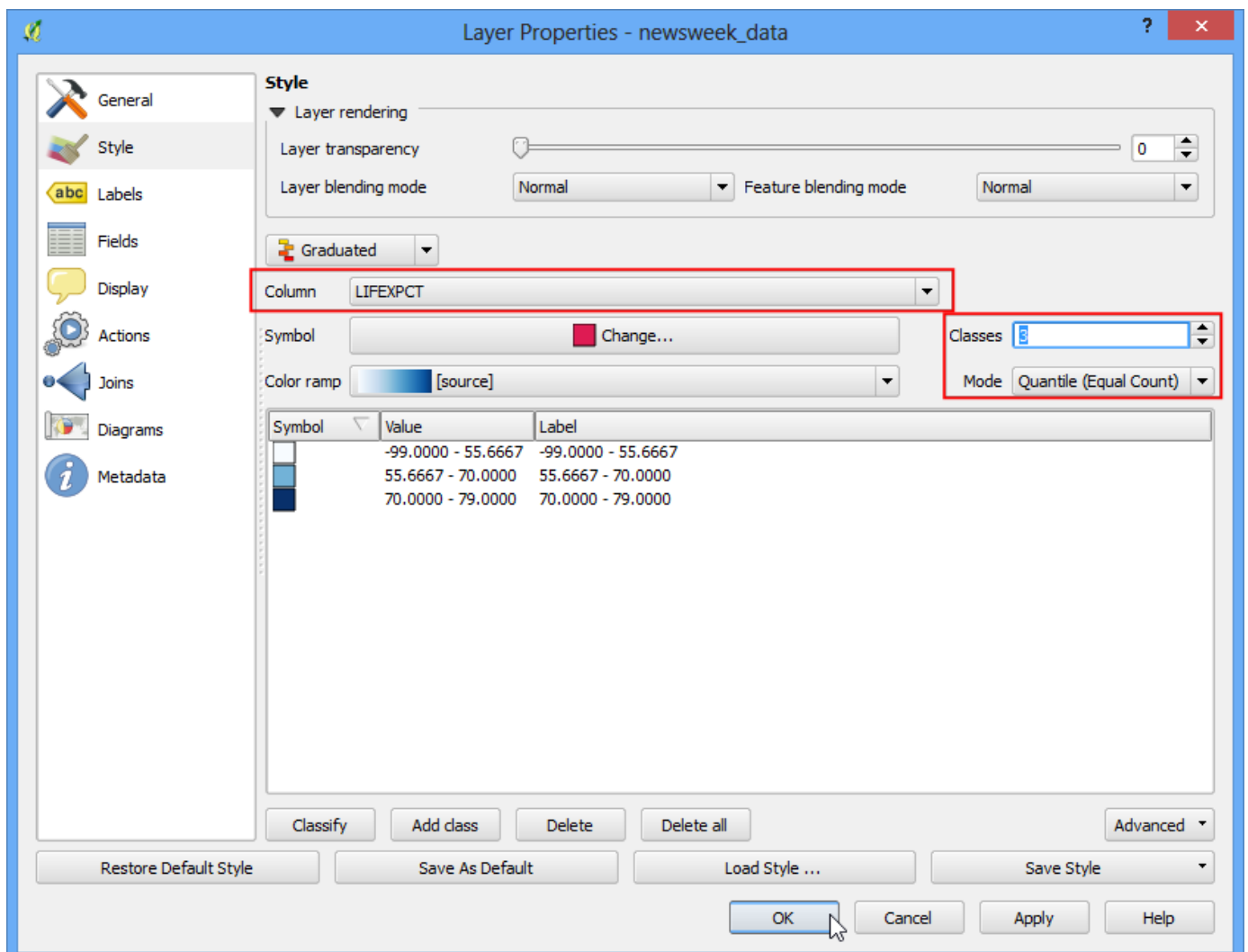
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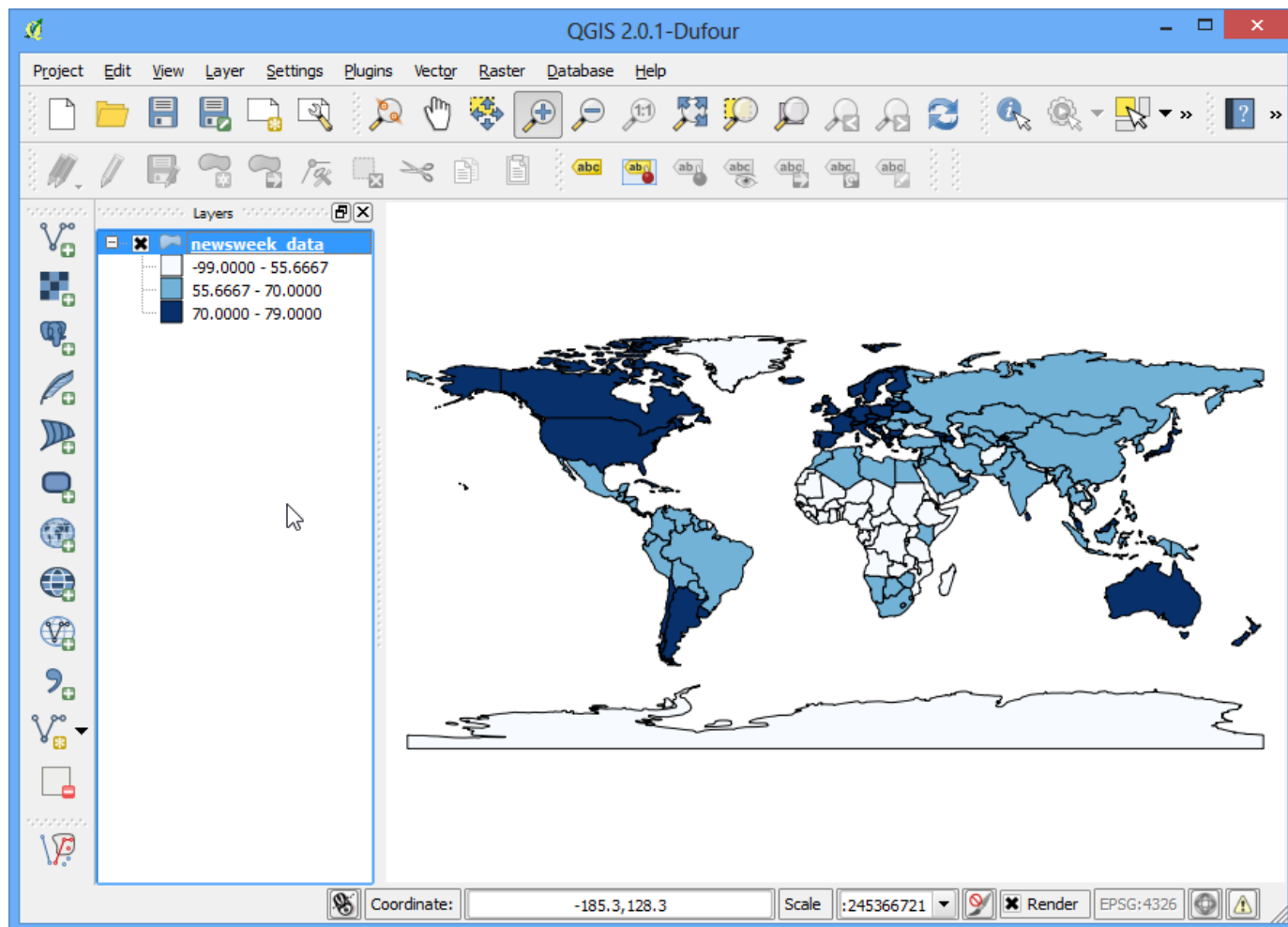
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13. Quantitative data visualization involves representing numerical data in a way that allows for comparison and analysis. This can be done using various techniques, such as bar charts, line graphs, and scatter plots. The goal is to make the data easy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



14. The following table shows the number of new weekly cases of COVID-19 in the United States by state, as of March 11, 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. The data is as follows:



18. The following table shows the results of the classification of the 'LIFEXPCT' variable. The 'HIGH' class is selected. The 'OK' button is highlighted.

