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MOJO Utility for Rendering of Maps Using Natural Breaks

Abstract

Rendering of graphs and maps is of the utmost importance in today's life with the rising availability of large amounts of data. Different types of classification methods can be used to render data such as Natural Breaks, Equal Intervals, Equal Counts, Quantiles, Standard Deviations or other statistical values. Amongst all these it has been proven that Natural breaks works best when there is non-linear distribution in order to avoid misleading renderings.

MOJO is a Java based mapping package which provides Quantiles and Equal Intervals. But it does not provide Natural Breaks, as most GIS software is prone to do. So the goal is to provide, in Java, an improved set of "graduated color" rendering tools, with a focus on Natural Breaks.

The tool allows a user to select a numeric attribute of a map layer, and by a dialog specify how the user wants the data to be rendered. One more feature has been added which is to choose a divisor for the attribute that is selected. For example if we want to render the map using population of a region as an attribute then the addition feature helps to choose the denominator for population such as population per square miles, per gender , per economy etc. As in any rendering we can also choose the number of equivalence classes the user wants the data to split into.

Unlike the Legend editor of the MOJO Utility which uses the Layer Properties of ESRI, this feature is made from the scratch and thus has the flexibility to be modified and used as needed. Also this will be of immense value to all student who are involved in Mathematics, Geography and Computer Science to use these features and learn about the different effects of using different classification methods for the rendering of map layers.

Thesis Committee

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