geoda basics and visualization

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this version: Wednesday 11th October, 2023   14:06

outline

geoda basics and visualizations

presentations

◇volunteers?

reference

◇ https://geodacenter.github.io

◇ there are tutorials and data for practice:

· https://geodacenter.github.io/documentation.html

· https://geodacenter.github.io/data-and-lab/

why another software?

$\diamond$ because geoda is unique!

$\diamond$ it's not full-fledged gis software like qgis

$\cdot$ but can have multiple maps/figures and they're linked

$\diamond$ and it can do spatial statistics

$\diamond$ let's start with visualizations

<u>outline</u>

geoda basics and visualizations

let's fire it up

◇start-search for-"geoda"

◇the main visual difference with qgis are:

· geoda has only top menu/icons

· can do many maps and figures at the same time

first, let's get some data

· https://s3.amazonaws.com/geoda/data/columbus.zip

◇ and unzip somewhere

and load to geoda

◇File-New Project-Input file-'open file icon'-ESRI Shapefile

◇and navigate to wherever you have unzipped columbus data

◇so we have neighborhoods in columbus

◇there is 'Open Table' icon, just below of 'Table' menu

◇like in qgis, can select u/a either in table or in map

Table menu

⬦ again, typical things that you have already seen in qgis

⬦ merging, variable calculator, etc

· can use those instead of those in qgis if you like...

⬦ but typical gis (what we have done so far) works little
better in qgis

⬦ here, we'll focus on what qgis cannot do:

· visualization

· spatial stats

histogram (again, always have it for your key var!)

◇ Explore-Histogram

· and select INC (income)

◇ okay, we got a histogram

· but it is a super histogram!

◇ can right-click and save-as, change num of int, etc

◇ we've got a range for each bin

· num of obs for each bin

◇ really cool: click bar to highlight features in the map!

· and can rectangle select more than 1 bin (or sel in map!)

◇ typical city: poor in the middle; rich on the fringe

thematic map–quick and easy

◇Map-Themeless Map is just another map

· note: can have several maps at the same time

◇Map-Quantile Map, do '5', 'INC'; just like qgis

◇again, note: everything is linked–click class in quantile map and it will highlight in both thematic and themeless map

◇Map-Percentile Map: good for detecting outliers/extremes

· compare it with quintile map

· even though none in top/bottom 1%, there are 5 in each top/bottom 10%

more about thematic maps

◇ Map-Unique Values Map would be good for categorical var

◇ yet, it does some clustering into bins

◇ kind of like 'categorized' (not 'graduated') ramp in qgis

more about thematic maps

◇ Map-Cartogram

◇ circle size=CRIME; circle color=INC

◇ in general hi income is low crime;

◇ but note little blue circle in top left: low inc, low crime

◇ i don't like it, i'm old fashioned

◇ try other things in map menu

· explore, use them–convince me to nonstandard maps!

· as long as it makes sense, and you can explain it, it's great!

Explore-Scatter Plot

◇like in regular, non-GIS stats package

◇do INC against CRIME, as expected negative relationship

◇note that obs with low income and crime

· rectangle-select it

  aha same place as we identified in cartogram

◇very interesting to both correlate and map

◇a great addition to your final project

◇rectangle selecting a subset gives you an idea of slope change!

· say lets just select in map western columbus—slope is flat