online mapping with google maps

adam okulicz-kozaryn

`adam.okulicz.kozaryn@gmail.com`

this version: Thursday 12th April, 2018   11:00

<u>**outline**</u>

google.com/mymaps (almost like qgis!)

other options

mmqgis

if we have time, revisit pretty.pdf

examples

◇ http://www.njspotlight.com/stories/12/12/20/
  crime-in-new-jersey/

◇ http://www.liveebolamap.com/

◇ can use for collaboration–just enable editing for anyone!

· can also enable editing for a select group of folks

· say those with special link

· great tool for collaborative mapping!

why online maps?

◇ very easy to share;

· higher quality than printout or even pdf

◇ can zoom in/out, pop up features etc

◇ especially good for low-level (hi-res) mapping

· because you have a neat basemap with all the details...

◇ can click to pop out other variables

· (like identify feature in qgis but less clunky)

why online maps?

◇ even can have your own business/service/app/etc

◇ just display something interesting on the top of a google map

◇ e.g. `http://www.trulia.com`

◇ sounds impossible?

◇ look what Straso did:

◇ `http://cure-cncs.camden.rutgers.edu/`

◇ for another local example see
  `http://camden-data.org/#body`

before we get started

◇ need to have google account

◇ why google?

◇ actually, i've been playing with online mapping a lot

◇ found google maps much better/easier than anything else

◇ but you are free to use any other service, say bing

◇ in fact, you do not have to use online mapping at all

· neither for next ps nor for final project

· (but you need to compensate with something else)

basic things in regular google maps

◇ (may not work sometimes: guess browser or OS)

◇ https://maps.google.com/maps

◇ search for 'rutgers camden'

◇ but can do polygons, too: '08102', 'university city, pa', etc

◇ can do lat/long: '38.8977 N, 77.0366 W' or '38.8977 , -77.0366'

◇ http://www.learner.org/jnorth/images/graphics/mclass/ Lat_Long.gif

◇ we'll be loading kml, which is just a bunch of coordinates

outline

google.com/mymaps (almost like qgis!)

other options

mmqgis

if we have time, revisit pretty.pdf

fire it up

◇ http://google.com/mymaps

◇ interface almost like qgis

· some rudimentary tools at the top

· layers on the left

· even data table is accesible

◇ in the future, maybe all gis will be done online like this

· for now, still need software like qgis

limitations [otherwise use fusion tables]

◇ can import kml (and others)

◇ imports csv, tsv, kml, kmz, gpx, xlsx

◇ need to be <5mb (simplify polygons useful!)

◇ <10k features per map; <2k features per layer

◇ <50 attributes per feature

◇ can print high resolution

◇ https://support.google.com/mymaps/answer/3370982?hl=en

not only display of imported kml; can create kml!

$\diamond$ as any google maps: markers, driving, cycling, etc

$\diamond$ also can draw any lines, polygons

$\diamond$ can add attributes

$\diamond$ can export as kml

$\diamond$ let's do it!

◇this is actually made for generating your own gis data

◇zoom in on Camden NJ–can just search it search box

◇select placemark from the top and put onto R and mark 'R'

◇and put placemark on patco station and call 'patco'

◇from line segment select 'Add walking route'

· and make a line to patco station (double click to end it),
  name it 'path' (and pop up distance)

◇from left menu let's 'Add layer' (cant have shapes and
  routes on one)

· from line segment menu select 'Add line or shape'

· and put a polygon on parking lot (just draw line around it)

· and call it 'parking'; then click it to pop up acres

◇now can save it as kml

kml

◇ just another vector format like shp

◇ and just one file as opposed to shp

◇ can just use qgis to turn shp into kml

◇ but kml is a popular format and can often get data in kml

· eg http://www.census.gov/geo/maps-data/data/tiger-kml.html

loading kml from goog maps to qgis

◇ first make sure each layer has a different name

· (otherwise problems when importing to qgis)

· so rename layer with points/placemarks to 'places'

· and rename layer with parking to 'areas'

◇ click main menu (three vertical lines at the top-left):

· 'Export to KML/KMZ' and check KML!! (qgis may dislike KMZ)

◇ load it to qgis as any vector layer

· make sure you click 'Select All' !

◇ and viola! we have it in qgis

· add openlayers basemap to put it in context

can get creative

◇ mark points where you think it is unsafe

◇ mark your travel destinations (in addition to that map on your wall with pins)

◇ mark your jogging route (or use one of those apps to record it and then download to qgis)

◇ etc, etc; get creative!

timeline

◇ as you imagine, google records your location

· the good thing is that you can download it :)

◇ http://google.com/maps

· click menu (3 horizontal lines on the left)

· click 'Your timeline'

· can browse it by date

· at the bottom right click cog icon and

· 'Download a copy of all your data'

· select kml instead of json

how about just displaying kml from qgis?

◇ can do that, too; though little less handy than in qgis

◇ can just export kml from qgis

◇ in fact can put the thematic map straight from qgis onto google maps!

◇ but first, simplify polygons

simplify polygons

◇ make it smaller so that it loads faster

◇ load our fav nj counties

◇ https://docs.google.com/uc?id=
  1xJDhcRCkgv7k4tNCa72Oog5bohV6dTB2&export=download

◇ Vector-Geometry Tools-Simplify Geometries

◇ and simplify polygons with tolerance of 1,000

· if you do something like 25k, you'll mutate nj too much!)

◇ really, as a rule, simplify all data before online display

export to kml

◇ before exporting, simplify:

· remember the rule of simplicity from pretty.pdf

· drop color fill first so that only the outline is left

◇ right-click layer, save as, kml

uploading to google maps

◇http://google.com/mymaps

◇from left menu: 'Add layer' and then Import

making a thematic map

◇ Individual styles-Style by data column-Copy of POPDEN2010

· (again make sure you first made it numeric with Duplicate in table)

· then you can check 'Ranges' button and pick few classes

· not too many possibly just 2 or 3, maybe 5, but not too many

· then select ramp by clicking on color ramp

◇ then the legend pops up on the left under layer name

beautify a bit

⬦ if you hover over, a bucket pops up on the right, click it

· make it less transparent, and make borders little thinner

⬦ also note when you hover over them in legend on the left, they light up in the map

ideas

◇ these ramps colors are quite lame

· may actually want to click and edit and pick some opposing colors

◇ like green and red

· especially if there are few classes, like 3

· then do say red, yellow, green

other things

· Under 'Individual styles' can also 'Set labels':
  'COUNTY_LAB'

◇ make it light so it doesn't obscure colors!

◇ finally, at top-left click 'share,' make it public and send me
  a link

add colleges

◇ load our favorite colleges into qgis

◇ `http://people.hmdc.harvard.edu/~akozaryn/myweb/hsip_colleges.zip`

◇ MMQGIS-Import/Export-Google Maps KML Export

◇ and load into google maps

◇ can change style of placemarkers to something fancy

◇ first change 'Individual styles' to 'Uniform style'

· and on the right click a 'bucket icon' and 'More icons'

that's it...

$\diamond$ please play with google maps

$\diamond$ it should be pretty straightforward and user-friendly

outline

google.com/mymaps (almost like qgis!)

other options

mmqgis

if we have time, revisit pretty.pdf

many options

◇ there are dozens of ways to make maps online

◇ even per google there are many ways to do it

◇ feel free to experiment and play around

◇ i am curious about your impressions

◇ especially if you find out something great, do let us know!

fusion tables

◇ can use Google's fusion tables

· https:
  //support.google.com/fusiontables/answer/2571232?hl=en

· more powerful in a sense that allows more data, obs, vars

· and can customize it using some java

◇ but less clear, i think

· and doesn't seem to work the way you want it to work

◇ but i am curious about your impressions

mapbox and open map

◇ mapbox and open map seems like a good alternative to google

◇ https://www.mapbox.com/about/maps/

◇ example:

· http://www.wnyc.org/story/273686-mega-commuters-take-manhattan/

outline

google.com/mymaps (almost like qgis!)

other options

mmqgis

if we have time, revisit pretty.pdf

animation

⋄http://michaelminn.com/linux/mmqgis/

combine layers

⋄ mmqgis-combine-merge layers (need to be same type:
polygon, line, point)

mmqgis more

◇there is much more !

◇just explore menu

go places

⬦ when you make maps and find things, go and visit that place–i drove through MI from TX to NJ

combining layers

◇ there was a question about how to combine layers

◇ mmqgis-combine-merge layers

· just make sure all are same type (polygon, line, point)

◇ more info on combining layers: http://gis.stackexchange.com/questions/25061/how-to-merge-multiple-layers-to-one-layer-using-qgis

· http://www.statsilk.com/maps/merge-multiple-map-layers-single-shapefile-using-quantum-gis

· http://www.igismap.com/merge-two-shapefile-qgis/

cannot convert string to numeric in kml

◇ try saving as shapefile first

◇ or use google.com/mymaps to duplicate column as numeric

__outline__

google.com/mymaps (almost like qgis!)

other options

mmqgis

if we have time, revisit pretty.pdf