

online mapping with google maps

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outline

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/>
- ◇ <https://www.google.com/maps/d/viewer?mid=1fPukcOKYdeEUigRm0uouhNx9aKY>
- ◇ 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 embed on your website, like
`http://people.hmdc.harvard.edu/~akozaryn/map1.html`
- ◇ 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-cnccs.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

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fire it up

- ◇ `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!

- ◇ as any google maps: markers, driving, cycling, etc
- ◇ also can draw any lines, polygons
- ◇ can add attributes
- ◇ can export as kml
- ◇ let's do it!

generate map (your own gis data!) in google maps

◇ google.com/mymaps

- ◇ 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 and call it 'path' (pop up distance)
- ◇ and let's 'Add layer' on the left and
 - 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

◇ google.com/mymaps to make like gis

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' and it will save it as kmz (zipped kml)
- ◇ 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 :)
- ◇ `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 use kml from qgis
- ◇ in fact can put the map straight from qgis onto google maps!
- ◇ but first, simplify polygons; again the bigger the number, the more simplification

simplify polygons

- ◇ need to make it smaller so that it loads faster
- ◇ load our favorite nj counties
- ◇ http://people.hmdc.harvard.edu/~akozaryn/myweb/bounds_nj_shp.zip
- ◇ Vector-Geometry Tools-Simplify Geometries
- ◇ and simplify polygons with tolerance of 1k
 - if you do something like 25k, you'll mutate nj too much!)
- ◇ after simplifying, don't forget to toggle editing
- ◇ really, as a rule you want to simplify all gis 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

- ◇ `google.com/mymaps`
- ◇ at top-left click 'Import'
- ◇ that's it! note you can upload and have multiple layers
- ◇ also note that when you click feature on a map it would pop up table info
- ◇ click menu next to layer (three dots vertically) and
 - 'Open data table'
 - it's all text format; click column menu (little triangle on column name)
 - and 'Duplicate' pick 'Number' as Type and close table

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...

- ◇ please play with google maps
- ◇ it should be pretty straightforward and user-friendly

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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/>

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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](https://www.google.com/mymaps) to duplicate column as numeric

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