This final project is a series of interactive maps of New Haven. They transition between each other, exposing connections between different methods of mapping the city and Yale.

Goals:

1. To expose Yale’s predatory relationship with the city (and in the last map, the world)
2. To show New Haven as expansive/diverse/vibrant/a city in its own right/etc., rejecting the metonymy that can be presumed of Yale as New Haven
3. Cartographically, to challenge the map as a static or objective representation of space, by showing how many different ways geometries, projections, and scales can be manipulated.

Maps:

1. **“Initial” or “base” map — New Haven, properties colored by owner**. Clicking reveals owner, value, transaction history, something related to taxes.
   1. Cartographic notes
      1. A “base map” is a map cartographers used to depend on heavily, as a starting plate of a space over which other features would be overlaid. A base map could include a few geographic features like hills, rivers, mountains. Cartographers would then overlay roads to make a road map, cities and town names to make a map for urban planners and administrators, hospitals and pharmacies to highlight healthcare access, and so on.
      2. This has a ton of intellectual and moral problems. See [this talk](https://www.youtube.com/watch?v=_ffKBxwmIKk) by Bill Rankin (my cartography prof from last semester), which explores what assumptions are hidden and which are made visible in casting a certain map as a “base map” over which variable features are overlaid. Our starting map is a “base” map as in it grounds the viewer and cartographer in a “normal” or “straightforward” view of New Haven just by being presented first, and in being somewhat familiar to the viewer. But it’s not a traditional base map on which other features are overlaid, because it’ll be constantly refigured and even removed — by making the background invisible, we make the assumptions and implications of the base map visible (we point out how it’s there by removing it).
   2. Substantive notes
      1. The story in this map is that Yale owns a shit ton of property at the heart of New Haven, but in terms of number of buildings New Haven is way, way bigger than Yale.
      2. We can also put in a transition or two to emphasize how Yale is buying up / bought up several parts of the city, historicizing Yale’s current ownership
      3. Finally, we can say some notes on segregation by coloring blocks or census tracts by their demographic composition, then highlighting redlined areas from the 1930s-40s
2. Redlining/segregation values
3. **Cartogram** — Properties inflated depending on property value, then by taxes gathered from them
   1. Cartograms are maps that are distorted to represent some quantity. A cartogram of US states could inflate the biggest states by population and deflate the smallest states, to show that Alaska really isn’t that populous in size despite being huge but that California is “worth” even more in terms of population than its relative size would imply. [These](https://populationeducation.org/wp-content/uploads/2019/06/world-population-map-only-768x449.jpg)  [are](https://lh3.googleusercontent.com/proxy/pKemd94AzBJjjQ6jOXvg9o1rdC2-Jul9mCcqcvrxXNqeHlC6fDqUiLBeQApfuKTHeYXSfIbECCrkdrK-HLhSWyfjZ2lzRFBqReM-XTG2zJvKAKsDBOA4GovC27shGyOtgWHmlGUFdneV9udXzQ) [some](https://sites.google.com/site/xiangyilin1309/_/rsrc/1472768169130/cartogram/USPop2007_Cartogram.png) [examples](https://www.researchgate.net/profile/Anna-Markowska/publication/282628452/figure/fig1/AS:392958202400770@1470699944754/Distance-cartogram-time-of-journey-with-the-London-underground-source.png)
   2. The message here is that despite the number of properties outside of yale, by value, Yale owns a shit ton of New Haven
4. **Grid map** — New Haven properties sorted by size, then by property value.
   1. Cartographic notes:
      1. This is intended to challenge the basic idea of what a map is. Maps usually add context and expose relationships between geographic objects to give them meaning. The grid setup removes relationships between these things and their surrounding context, just sorting them by size.
   2. Substantive notes:
      1. The message here is pretty basic (and at this point dangerously repetitive), that there are lots and lots of properties beyond Yale that people live in, find happiness in, find livelihoods in, etc
      2. at this point I feel weird about harping on the yale-new haven relationship, as if we’re glorifying yale by making it the focus of the whole project (even while we criticize it), so maybe we should try to not talk about yale at all here ?? idk
5. **Indigenous traditional/ancestral/current ownerships in Connecticut**
   1. shapefiles from native-land.ca
6. Zoom out to a **world map to examine Yale’s financial connections** 
   1. This is where I think primary resources will be most difficult to come by, so a lot of research is needed here
   2. The map will rotate and include a comment on world map projections

On the order: I think it’d be good to start with “initial” or familiar views of New Haven, then zoom out to examine “hidden” connections or premises.

Features:

* All maps are scrollable and zoomable
* All maps have at least a few geometries with tooltips

To-dos:

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Comments and notes on technical issues:

I had originally planned to make all of this in d3.js, which I can now see was a naive move. Although d3 has a ton of flexibility and can make beautiful visualizations, it doesn’t work well with larger datasets because everything has to be created by either 1) using the SVG, limiting the number of features to <~1,000 or 2) using a canvas, allowing more features to e present but losing a degree of interactivity and making everything slightly harder to code.

So the SVG doesn’t hold a candle to what we need (~27,000 features) and even the canvas will probably be unwieldy for this. Instead, I’m going to use Mapbox GL JS for the first base visualization and render only a hundred or so buildings for the transition between the first and second map, since that has to be done with d3 canvas and is thus relatively low capacity (we’re going to use d3 canvas instead of SVG because interactivity is not needed and canvas will be used for the second two steps as well). The second map (grid) and the third map (cartogram) will have to be done completely through the canvas as well, limiting interactivity.

The fourth and fifth maps don’t rely on the buildings dataset but are ones where we want to have both interactivity and animations, so d3.js will probably be the move here.

So to summarize:

1. Base buildings: Mapbox GL JS
   1. Use d3 to highlight buildings, areas (redlined or not)
   2. Transition to next map: d3 canvas
2. Grid of buildings: d3 canvas
   1. Transition to next map: still d3 canvas
   2. Not interactive, but maybe we can make the same few hundred of them “float” while others are not moved.
3. Cartogram: d3 canvas
   1. Transition to next map: still d3 canvas
   2. The more I think about it, the more the cartogram could be the most difficult piece to render. There’s so many buildings and each one of them is supposed to be inflated or deflated. At some point I guess I have to assert that it’s not worth it to inflate every single polygon, even if I pull out all performance stops
   3. An alternative could just be to transform 2) into a bubble map
4. Indigenous lands: d3 SVG
   1. Since we’re only including CT and CT-adjacent lands, zooming out has to be limited somewhat
5. World map: d3 SVG

Datasets needed:

1. Buildings (done)
2. Redlined areas (poke around datahaven website)
3. Grid by area (done)
4. Bubble map dataset of value
5. Indigenous lands shapefile (need to convert to geojson)
6. World map (not done at all)
   1. We just need a csv file with four columns (name, details, lon, lat), but it’d be good to have ~20ish rows (more is better) which could be hard to think of
      1. Investment in Puerto Rican debt
      2. India (coolie labor)
      3. African enslaved labor
      4. Yale-China, Light fellowship
      5. Eugenics connections between Yale and Nazi Germany (???? lol )
      6. Uhhh
7. Refusing the University by Sandy Grande
   1. “commit to collectivity / reciprocity => being answerable to the communities and commitment to mutuality”

**Calendar, deadlines, notes on current progress**

1. Base map
   1. Created Mapbox, need to create polygon overlays -> transition into grid (2)
   2. Sometimes the tooltips work, at other times they show “undefined” for every property. Why?
2. Grid map
   1. Able to render shapes but unable to render transition into shapes
      1. The traditional/conventional/easy way to map in d3.js is to use a Geojson or TopoJSON file, but these can only take one geometry column. I tried to use a plain .json file that had two geometry columns, but I can’t get d3 to recognize either geometry column as a featurecollection
      2. Another issue (that I haven’t even been able to get to yet) is how to transition or tween between the two geometry columns
   2. Maybe I can do this via a (simple) GIF/PNG transition
3. Cartogram bubble map
4. Indigenous lands
5. World map

**April 12th -**

* Talk to DH Lab and Marx Lab about problems in 1) and 2)
* Make 4) and 5), as well as the transition between them. Imo this shouldn’t be too hard

**April 19th -**

* Make 3)
* Finish up transition from 1) to 2)

**April 26th -**

* Transitions between everything. Assemble!
* Figure out workflow to integrate between Amy’s writing and the map — Google-Sheets-able system?

**May 3rd -**

* Aesthetics :D
* Find people to present to (send in DataHaven and AEMP slacks, maybe ask Rankin for his opinion)

**May 10th -**

* Relax

**May 17 - Due**