

Introduction to Mapping as a Digital Method

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HIST 7370: Texts, Maps, and Networks: Readings and
Methods for Digital History

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Workshop Agenda

- Consider the features and uses of maps in digital and historical scholarly contexts.
- Discuss mapping tools and their advantages and limitations.
- Discuss various digital mapping projects.

Slides, handouts, and other materials available at:

<https://bit.ly/fa22-cohen-mapping>



What is a map?

- Put simply, a map is a visualized interpretation of geospatial data.
 - Maps present the spatial relationship between localized sites in terms of distance, direction, size and (sometimes) sequence.
- Digital maps help us render and visualize these spatial relationships, as well as presenting contextual information or other forms of data. They can be searchable and layerable, and perform other functions besides.



[Hereford Mappa Mundi](#)



Maps' different uses

- Maps can convey all sorts of geospatial information that can facilitate different applications:
 - Navigational/orientational maps.
 - Geological/topographical maps.
 - Political maps.
 - Thematic maps.
 - Artistic maps.



[Subway Map from MBTA](#)



Do maps represent reality?

- Maps certainly reflect the intention of the map-maker, but that's not all they are.
- They are not presentations of objective spatial relations, but **subjective expressions** that can produce **shared interpretations**.
 - Boston, for instance, is as much a human idea as a physical space, and thus maps both *represent* and *create* reality. [Laura Herbert, "[Do Maps Create or Represent Reality?](#)"]
- The **artificial simplicity** and **clarity** of maps is therefore deceiving, but the **clarity** is necessary for the map to be **useful**.
- Because of their artificiality, maps are inherently contestable.



Questions for critiquing maps

- What is its subject?
- What's its geographic/spatial focus?
- Who is/are the map's audiences?
- What is its "message," "argument" or purpose?
- How was the map made?
- What are the map's materiality and form?
- *When* is this map?
- Who made this map? What editorial choices did they make?



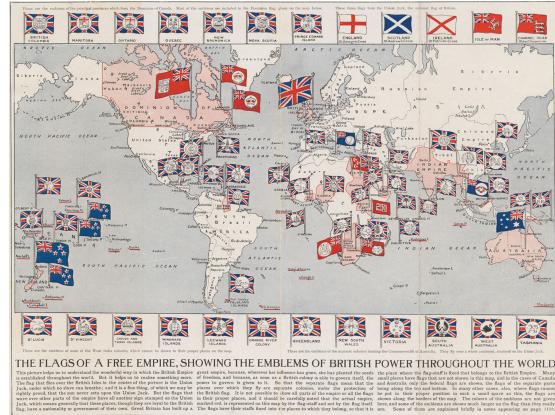
[What arrondissement is this](#), by Laura J. Lawson

From "[Critiquing Maps II](#)", by Shannon Mattern



Discussion: maps' different biases

- How might cartographers/maps present biases?



The Flags of a Free Empire, Showing the Emblems of British Power Throughout the World from Cornell University Library's Digital Collections



Saikin Sekai Zu from University of Texas's [Perry-Castañeda Library Map Collection](#)



Moral & Political Chart of the inhabited world by William Channing Woodbridge, from the [Library of Congress](#)

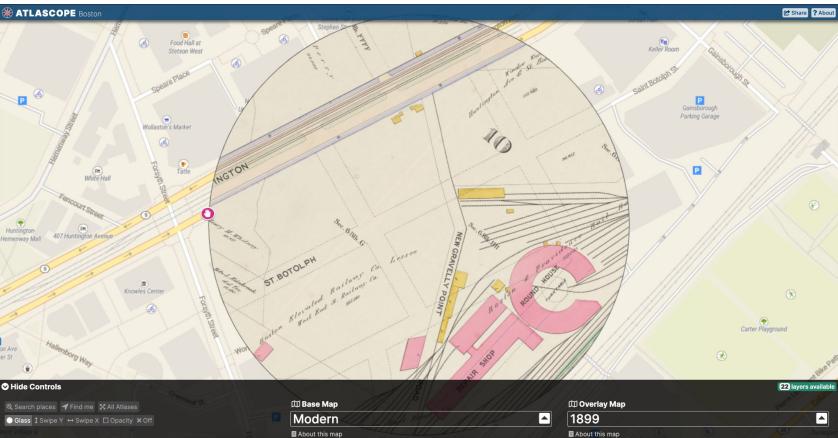
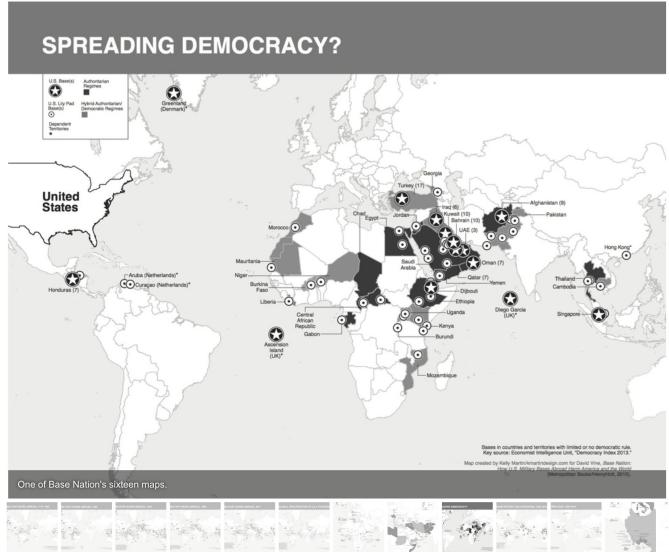
- A “better” map.



Historians' uses of maps

- As subjects of historical inquiry:
 - As primary sources/archival artefacts.
- As tools to make historical arguments about:
 - Scale.
 - Patterns/trends.
 - Change over time.
 - Comparisons.

From [Base Nation](#)
by David Vine



[Atlascope](#) from
the Norman B.
Leventhal Map
& Education
Center



Challenges in historical mapping

- Working with historical maps and data can be particularly challenging.
 - Historical information is often partial or complicated, but maps are perceived to show specific, concrete information.
 - Cartographers might reflect contemporary prejudices or priorities, or different epistemologies.
 - Historical landscapes can shift over time.
 - Territorial borders and boundaries are often contested.

Think carefully about what is **particularly difficult to represent** or how there might be complexities you need to standardize in order to map your data.



KnightLab StoryMap

Open source, good for narratives, can include images, videos, audio, as well as narrative descriptions.

knight lab

Projects Class Device Lab Posts Community About

StoryMap JS

Maps that tell stories.

Make a StoryMap

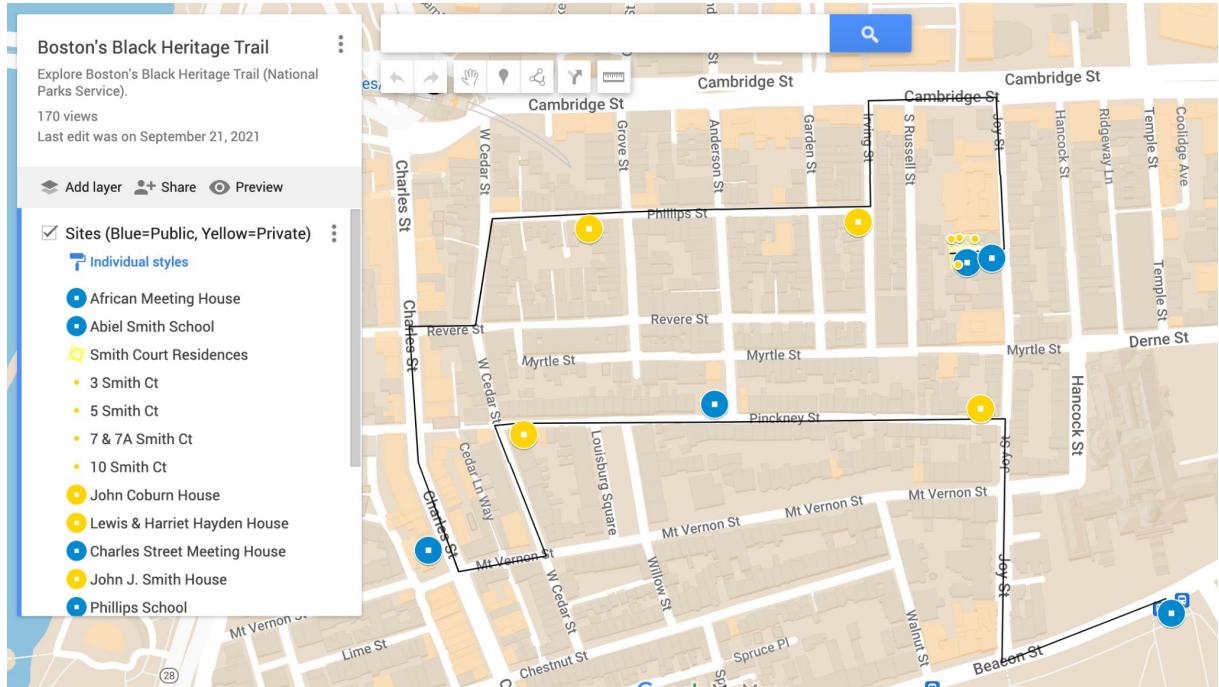
Overview Examples Make a StoryMap Advanced Help





Google My Maps

Open source, better
for non-narrative
mapping, can include
images, videos, and
descriptions.

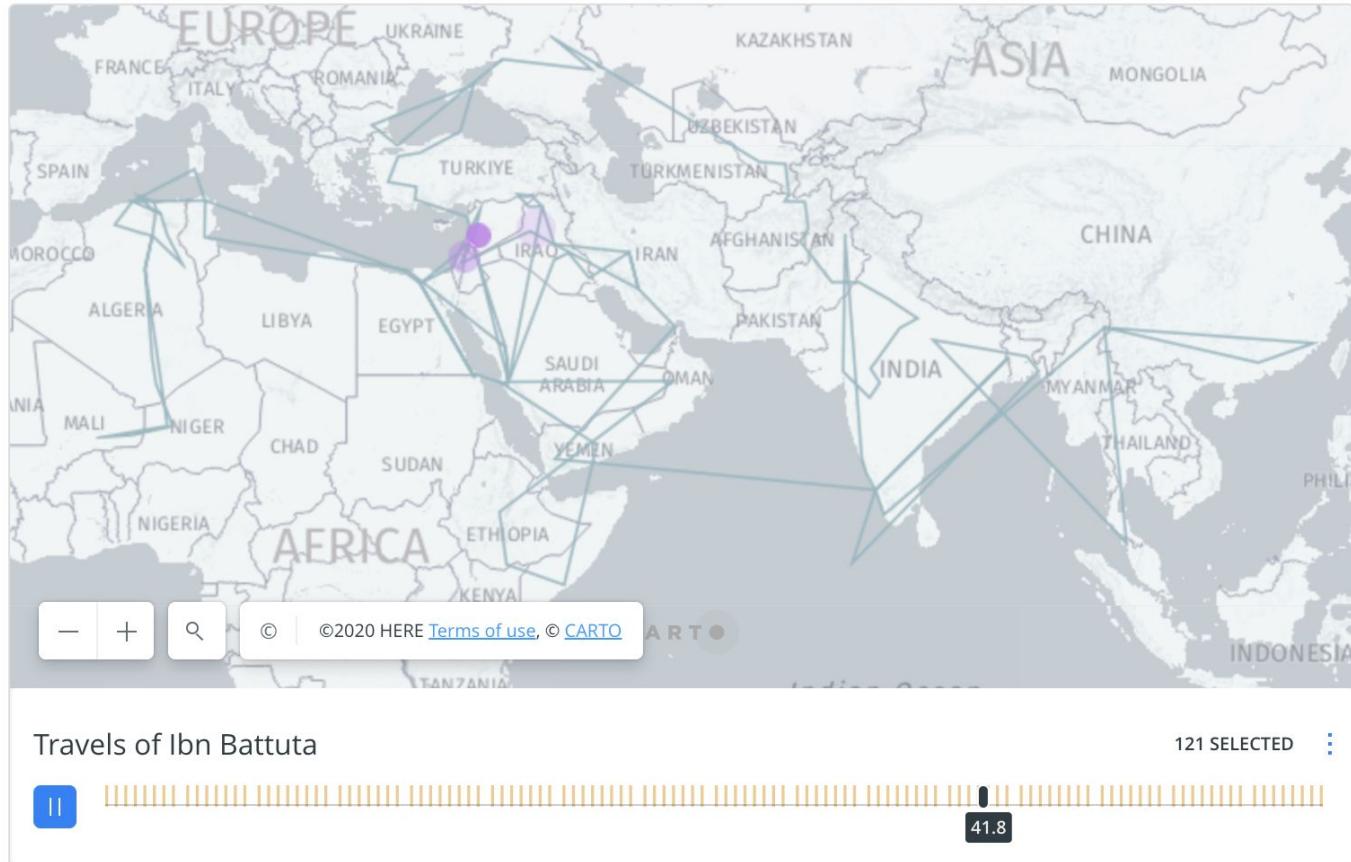


DITI-created example



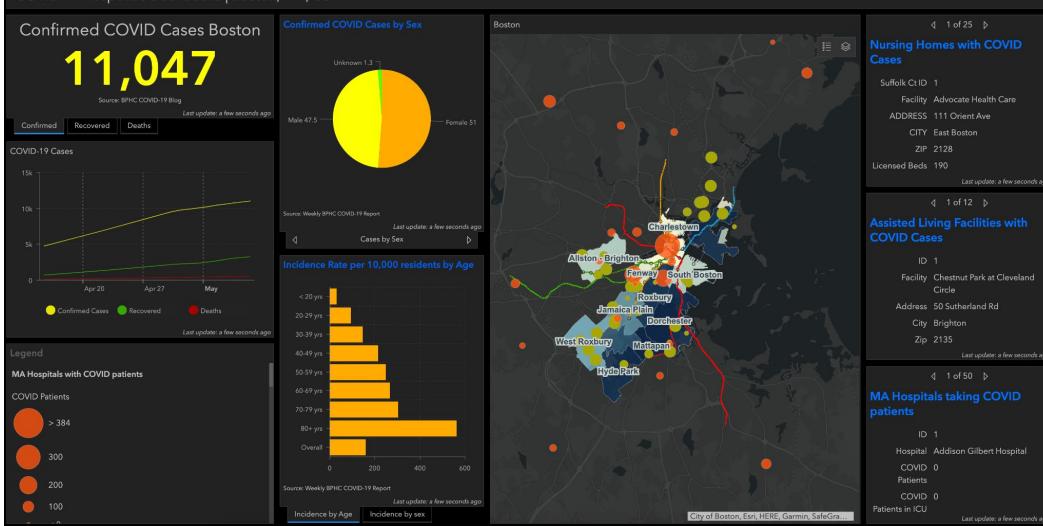
CARTO

Proprietary, can create interactive and animated maps. Does not support images. Students can create a free account using the [GitHub Student Developer Pack](#).



ArcGIS Online & ESRI Storymaps

COVID-19 Response Dashboard | Boston, MA, USA



From [Snell Library's GIS subject guide](#)

Proprietary (Northeastern has a license), the gold standard of digital mapping.

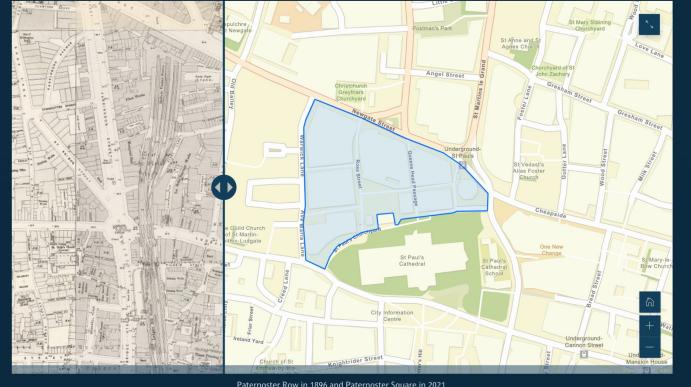


Northeastern University
NULab for Texts, Maps, and Networks

Contested space in a London POPS

Introduction Pre-Twentieth-Century History Development and Redevelopment OccupyL5X Post-Occupy Contestations About

These contests created a space that is drastically changed from a century ago, a space that has changed more in the last 70 years than in the previous 500 years.



From [Contested space in a London POPS](#) by Chris McNulty

Proprietary (Northeastern has a license), good for narratives, can embed all sorts of media, mini-mapping options.

Example projects using digital mapping methods

- “[Freedom Trail Boston](#)”: uses a mix of textual, image, and geo-location data to guide users along Boston’s Freedom Trail.
- “[Mapping Shared Spaces: A Visual History of Boston’s Black and Jewish Communities](#)”: presents the story of migration of Boston religious communities by following the changing locations of places of worship.
- “[National Library of Scotland’s Georeferenced Maps](#)”: overlays georeferenced historical maps onto modern digital maps, showing change over time.



Data Considerations



Understanding Your Data

- Where does this data come from? Who collected it? For what purpose?
- What data is contained within each column? Are all of the columns necessary to answer your research question?
- **Important data for mapping:**
 - *geocoordinates* (latitude and longitude) are necessary to produce any maps; just the names of countries and cities won't be sufficient.
 - *geocode/GeoAreaCode/M49code* are unique identifiers



Historical Mapping Projects: Different Uses of Data

What specific data is necessary for each of these projects?

- Use mapping methods on existing historical geospatial data
 - Example: [Geography of the Post](#)
- Use ArcGIS to georectify historical maps and give them geospatial components
 - Example: [Birth of Boston](#)
- Create a geospatial dataset through close reading of primary sources that reference space (such as a travel narrative)
 - Example: [Digital Adventures of Ibn Battuta — Data Set](#)



Data Example

- Identify what columns are represented in [this map](#) created with this data set.
- What other sorts of maps could be made with this data?

A	B	C	D	E	F	G	
1	cartodb_id	_order	details	location	date	longitude	latitude
2	1	1	Begins Journ	Tangier	June 1325	5.834	35.7595
3	2	2		Algiers	August 1325	3.0588	36.7538
4	3	3	Stays for 2 m	Tunis	September 1	10.1815	36.8065
5	4	4		Port of Alexa	March 1326	29.5248	31.1216
6	5	5	Stays a mont	Cairo	April 1326	31.2357	30.0444
7	6	6	Tries to reac	Aydhab	May 1326	36.2925	22.1951
8	7	7	Leaves for D	Cairo	June 1326	31.2357	30.0444
9	8	8	Stays a mont	Damascus	July 1326	36.2765	33.5138
10	9	9	4 days Medir	Medina	August 1326	39.5692	24.5247
11	10	10		Mecca	October 1326	39.8579	21.3891
12	11	11	Visits Maus	Najaf	November 1326	44.3331	32.0274
13	12	12		Wasit	December13	45.7521	32.6024



Mapping Best Practices

- Always think about your research question when determining what to include in your map.
- Keep in mind the political and/or ideological factors that shaped the base map.
- Determine whether you are mapping points, polygons, or both.
- Determine whether using multiple layers that can turn on/off is useful.
- Determine how uncertainty in the data will be handled.
- Consider the theoretical frameworks being imposed by the specific mapping tool.
- Keep accessibility in mind when choosing color schemes.
 - Tufte, [Envisioning Information](#).



Mapping Resources

- [OpenStreetMap](#) is a good source for finding base map layers to augment the historical data set.
- [Snell Library's Guide to GIS](#).
- [MassGIS](#) is a good source for Massachusetts geographic data, such as the census or infrastructure.



Demo: Google My Maps



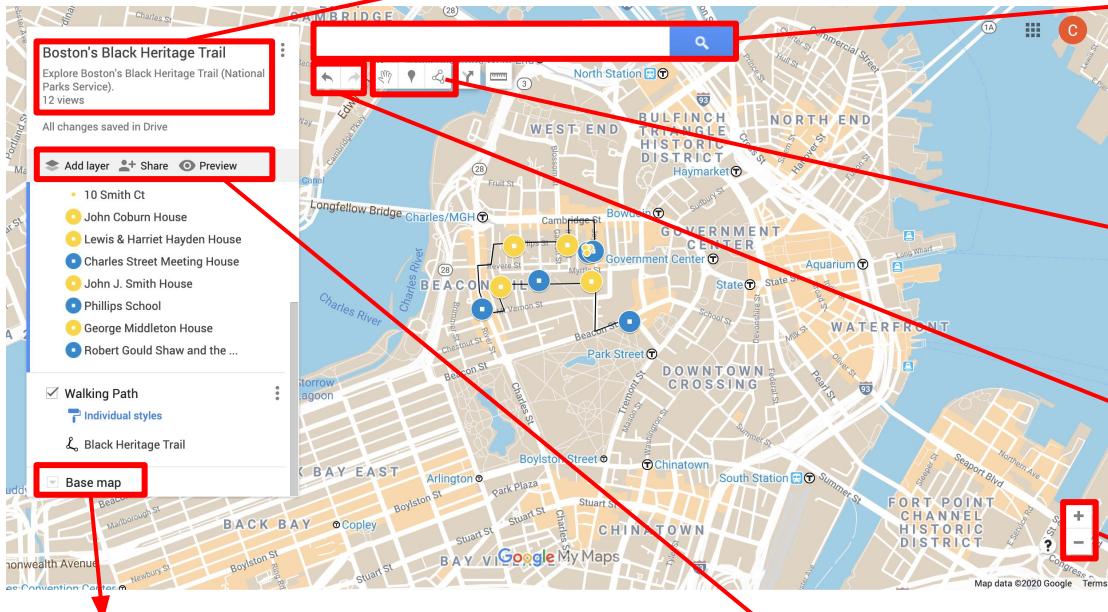
Create a map with Google My Maps

- Go to <https://www.google.com/mymaps>
- Sign in through Google
- Click “Create a New Map”
- Once you have
 - created your map, it will be there for you to work on
- Name your project and give it a description

+ CREATE A NEW MAP



Google My Maps



Map title and map description

Search for locations using their addresses

Add and move points, lines, and polygons

Undo and redo

Zoom in and out

Change basemap

Add new layers and preview the finished product



Selecting Your Basemap

To change your basemap, go to the bottom of the left-hand column and click “Base Map.” Google provides you with a variety of options to choose from.

Basemaps can help:

- Situate the map a particular context.
- Make certain content easier or more difficult to read.

What other impacts and implications of your basemap selection can you think of?



Map Markers

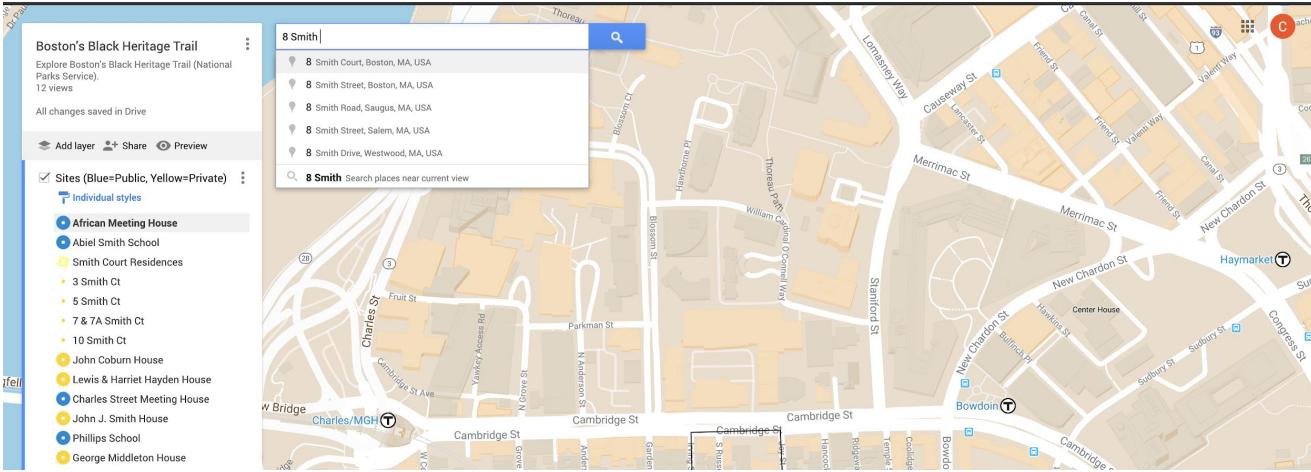
Map markers are the different points on your map. You can place markers using coordinates or addresses, or add them manually.

Each marker can contain:

- Name and description
- Street address
- Latitude/longitude geospatial coordinates
- Customizable icon and color
- Media: images, videos, and links



Add A Location



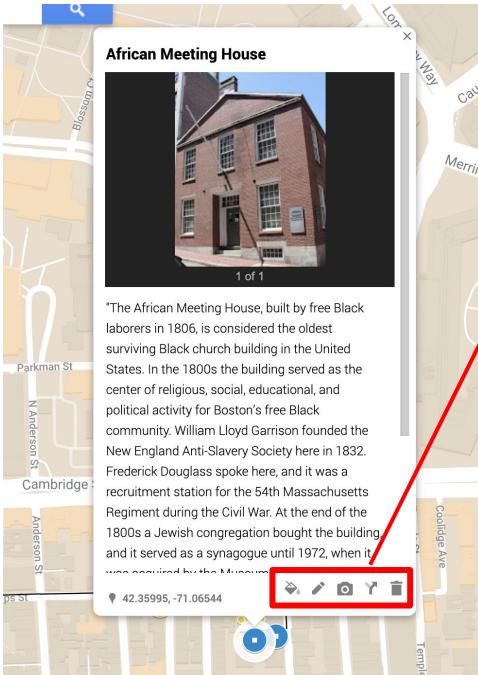
Search for the location you want and select "Add to Map."

Google My Maps does not always recognize place names; you might need to look up the address or location instead

If you cannot find the address for a location, you can select the marker icon and click on the spot where you wish to add the marker



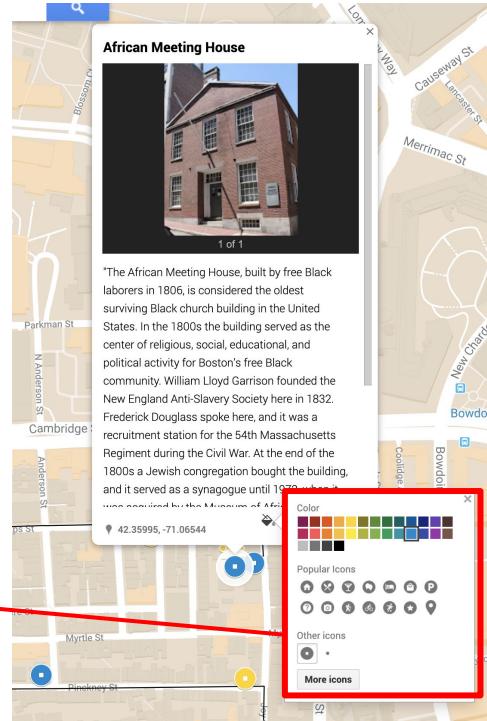
Add More Data to Markers



Tools, left to right: Style, Edit title and description, Add images/video, Delete marker line or polygon

For all markers, you can add a title, description, images, videos, links, and customizable color.

You can change the color and icon of the marker.

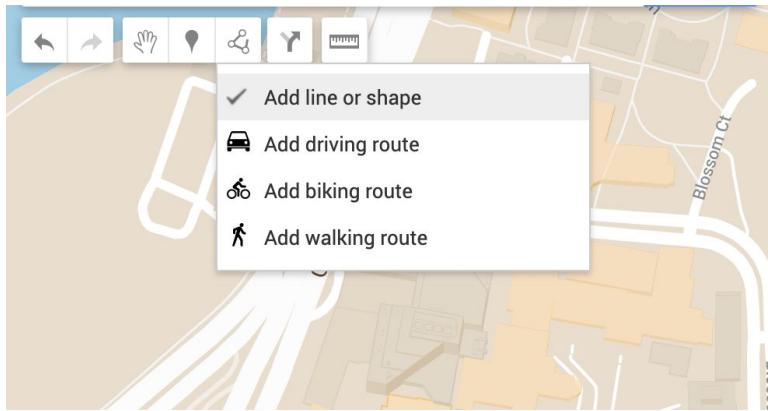


Lines and Polygons

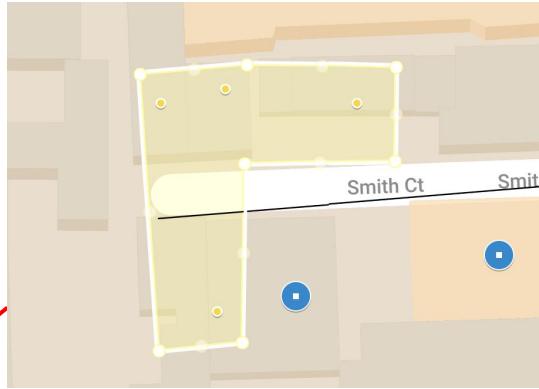
- Google My Maps can also add **lines and polygons** to your map. Lines and polygons use fixed points on the map that you select to visualize key information.
 - Lines can demonstrate routes and directions. Lines are easiest to add when you're representing the shape of a route that presently exists.
 - Polygons can demonstrate towns and neighborhoods. Polygons are best for representing the shape of a historic area whose boundaries have since changed.



Add Lines and Polygons



Click “Add line or shape”

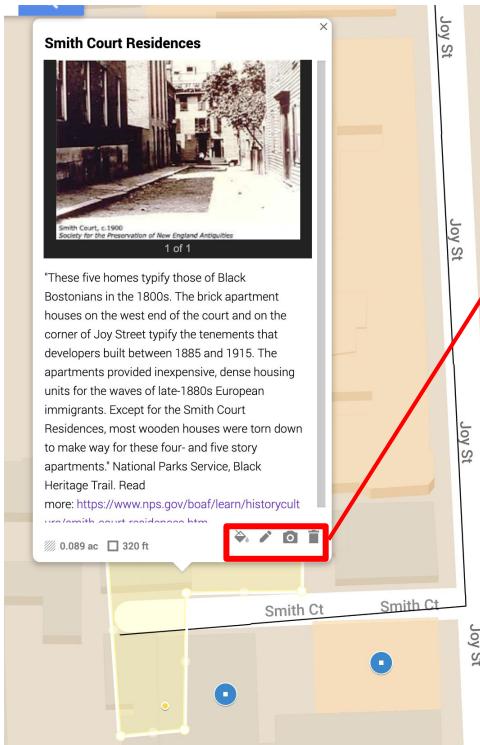


For polygons, click where you want to start drawing, click each corner or bend of the line, and click back on the first point to finish the shape.

For lines, click where you want to start drawing and then click each corner or bend of the line; double click when you are done with the line.



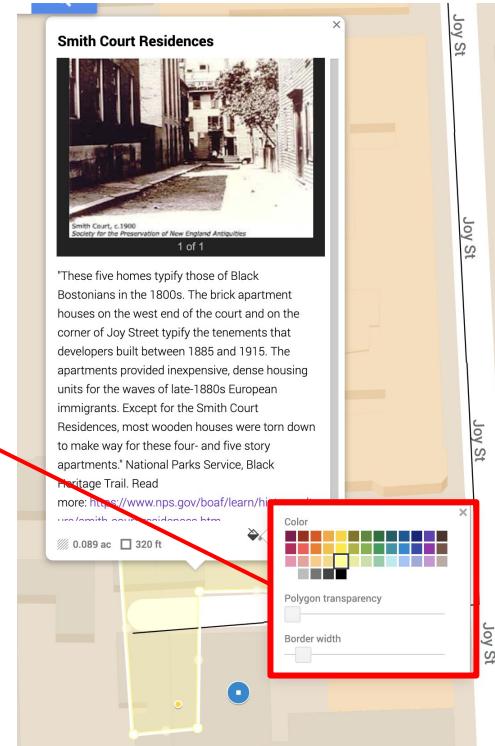
Add More Data to Lines and Polygons



Tools, left to right: Style, Edit title and description, Add images/video, Delete line or polygon

For lines and polygons the color, transparency, and width can be customized.

For all lines and polygons, you can add a title, description, images, videos, and links.



Layers

Layers allow you to sort/filter your geospatial information into different groups. All of your markers, lines, and polygons will be placed into an “Untitled Layer,” so always make sure to title the layer even if you will only have one.

- Individual layers can be turned on and off.
- Layers can be exported individually as KML (a markup language for expressing geographic annotation) to view in Google Earth.
- To add a new layer, click “Add Layer.”
- Title the layer.
- Add markers, lines, or polygons!



Import Data into Google My Maps

You can import data directly into Google My Maps, as long as there are columns for latitude and longitude. Accepted file formats are: CSV, XLSX, KML, GPX

- Select “Import.”
- Upload your file.
- Select the latitude and longitude columns.
- Select the column that contains the name of each location.

The screenshot shows the 'Import' step in Google My Maps. A red arrow points from the third bullet point to the 'Import' button. Another red arrow points from the fourth bullet point to the 'longitude (longitude)' checkbox in the column selection panel.

Untitled layer Import ⋮

Add places to this layer by drawing or importing data. [Learn more](#)

Choose columns to position your placemarks
Select the columns from your file that tell us where to put placemarks on the map, such as addresses or latitude-longitude pairs. All columns will be imported.

cartodb_id [?](#)
 _order [?](#)
 details [?](#)
 location [?](#)
 date [?](#)
 longitude (longitude) [?](#)
 latitude (latitude) [?](#)

Continue Back Cancel



Your Turn!

Use the Black Heritage Trail information from the handout and begin practicing making a map using **Google My Maps**.

Discussion prompts:

- What kind of research can digital mapping enable or augment?
- What are the limitations of this tool?
- What sort of theoretical assumptions are these tools making about maps and geographic data as a source?



Thank you!

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If you have any questions, contact us at nulab.info@gmail.com

Have questions? Schedule an appointment with us! <https://calendly.com/diti-nu>

Link to Online Materials: <https://bit.ly/fa22-cohen-mapping>

