Leaflet Storymaps with Google Sheets and Scrolling Narrative

Instructions adapted by Sasha Brown from open-access textbook *Data Visualisation for All: Tell Your Story with Free and Easy Tools* by Jack Dougherty and Ilya Ilankoy, last updated 2020. https://datavizforall.org/

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Creating your own storymap: Steps

A. Fork (copy) the code template and publish your version with GitHub Pages
B. File > Make a Copy of Google Sheet template, Share, and File > Publish
C. Paste your Google Sheet URL in two places in your GitHub repo
D. Modify your map settings in the Options tab and test your live map
E. Geocode locations in the Points tab
F. Using the Data Entry Tool
G. Adding Images

A) Fork (copy) the code template and publish your version with GitHub Pages

Before you begin, this tutorial assumes that you:

- have a free Google Drive account,
- have a free GitHub account

Note on using GitHub: GitHub (http://github.com) is a versatile tool to share, edit, and host simple code templates on the public web. It requires a free account. Although advanced coders use more powerful command-line versions of this tool, this introduction demonstrates basic steps using GitHub in the web browser.

- Pros:
  - Free and easy-to-learn tool that beginners can use in the web browser.
  - Popular tool to share, copy, and edit open-source code repositories (project folders).
  - Host simple code (such as HTML/CSS/JavaScript) on the live web with GitHub Pages.
  - Built-in support to quickly display open-data formats: CSV tables and GeoJSON geography.
  - Easy to migrate code repositories to a different web server.
- Cons:
  - By default, all work on GitHub is public. Private repositories require payment.

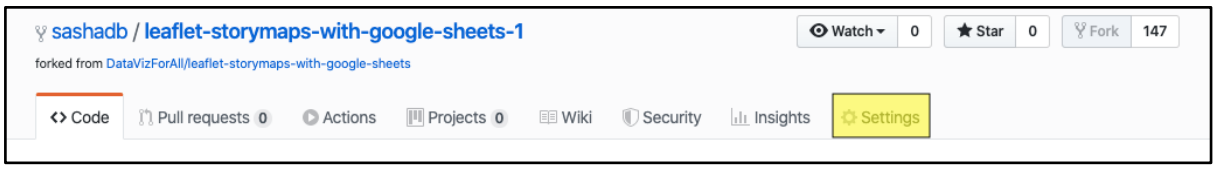
- New users often confuse web addresses for code repository versus published web page.

1. Go to github.com/datavizforall to and click on the link to 'leaflet-storymaps-with-google-sheets', or right-click the link to open this GitHub code template in a new tab: https://github.com/datavizforall/leaflet-storymaps-with-google-sheets
2. In the upper-right corner of the code template, sign in to your free GitHub account
3. In the upper-right corner, click Fork to copy the template (also called a code repository, or repo) into your own account.

The web address (URL) of the new copy in your account will follow this format:

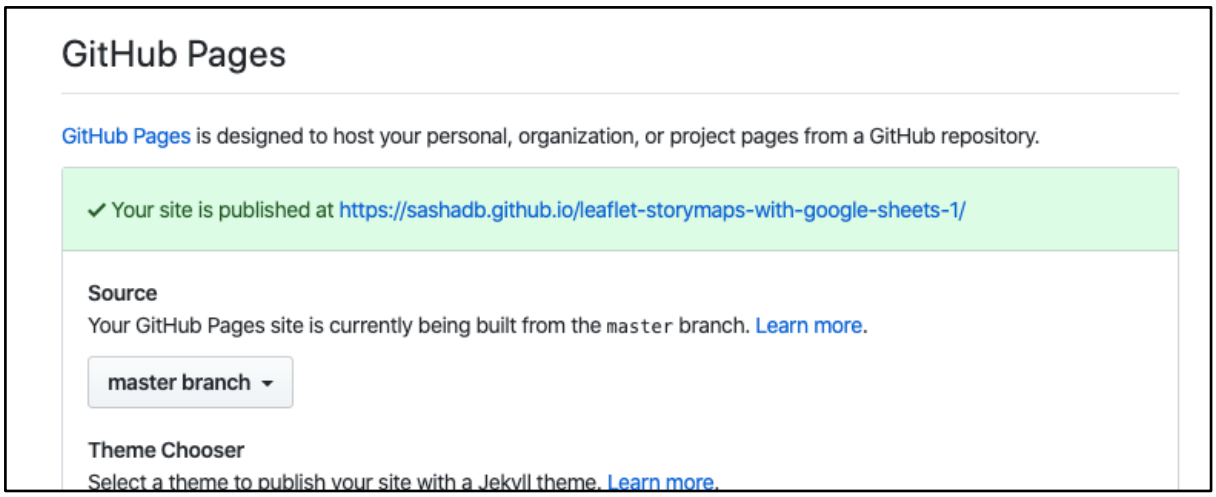
```
https://github.com/USERNAME/leaflet-storymaps-with-google-sheets
```

4. In your new copy of the code repo, click on Settings [top-right, below 'watch').



1. In Settings, scroll down to the GitHub Pages area, under Source click on None and change to Master Branch, and Save. This publishes your code to a live map on a public website that you control.
2. Scroll down again to the GitHub Pages section, and right-click and copy the link address to your published web site, which will follow this format:

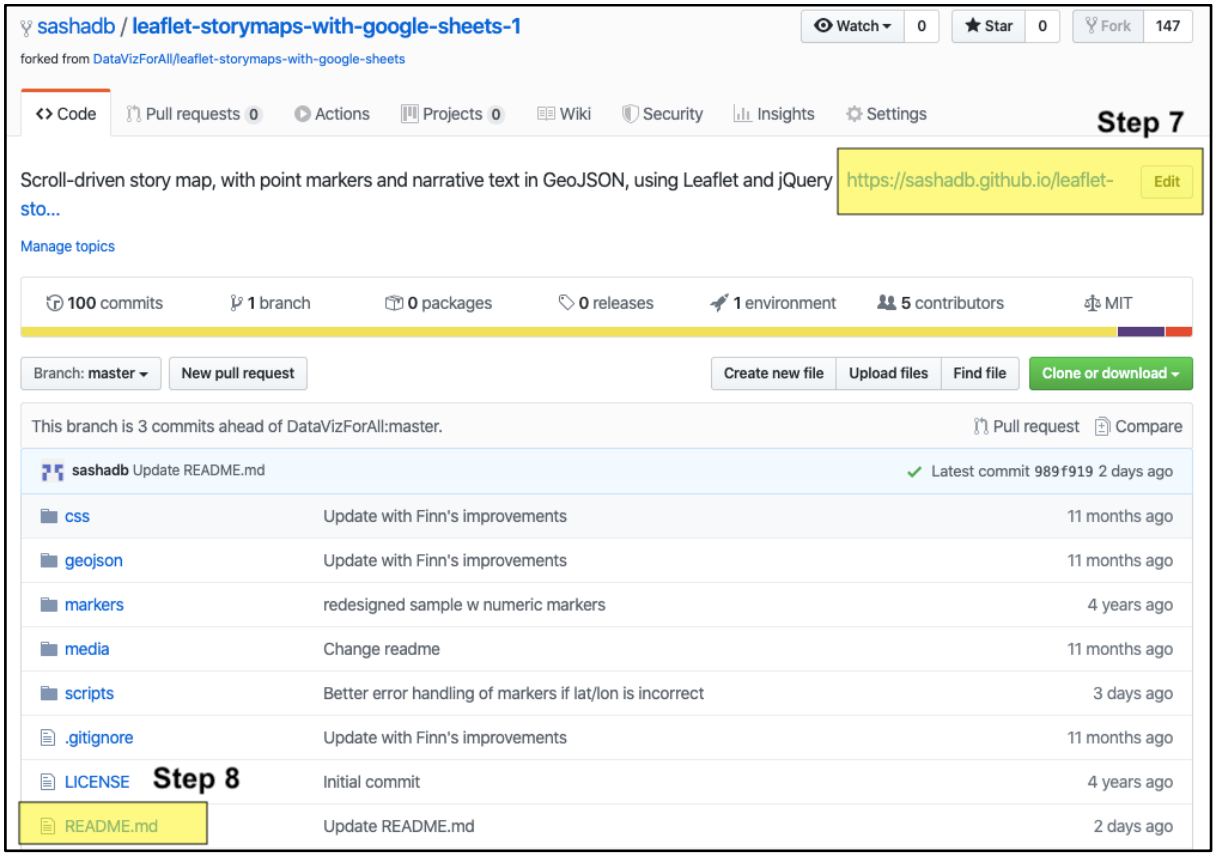
```
https://USERNAME.github.io/leaflet-storymaps-with-google-sheets
```



6. Scroll up to the top, and click on your repo name [leaflet-storymaps-with-google-sheets in blue at the top of the page] to go back to its main page.

7. At the top level of your repo main page, next to the link to the dataviz map, click Edit. Paste in the link to YOUR site.

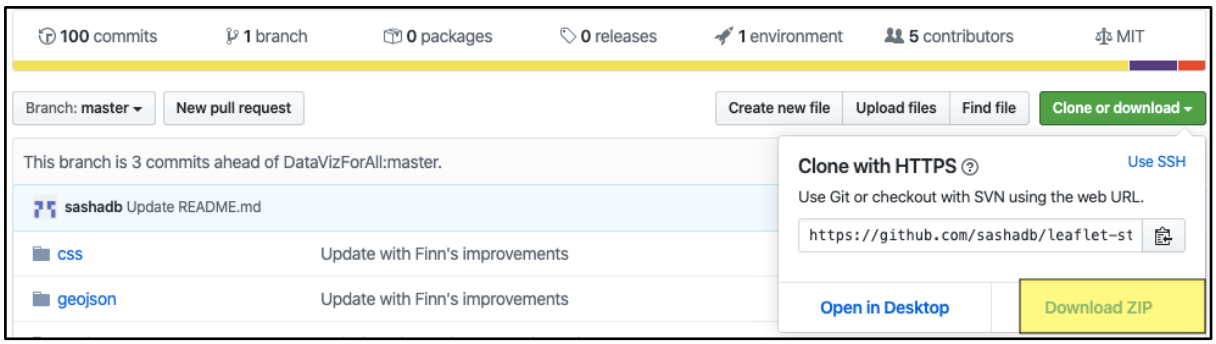
8. In the list of files that are part of your repo is a file called README.md. Click on README.md, and click the pencil icon to edit this file, written in easy-to-read Markdown code.



9. Delete the link to the current live site, and paste in the link to YOUR site. Scroll down and Commit to save your edits.

10. On your repo main page, right-click the link to your live map to open in a new tab. **Be patient** during busy periods on GitHub, when your website may take minutes to appear the first time.

11. You can also access your map without using GitHub by downloading the project to your computer. To do this click on Clone or download and Download Zip. Unzip or extract the file on your computer and open the file called 'index.html' to view the site.



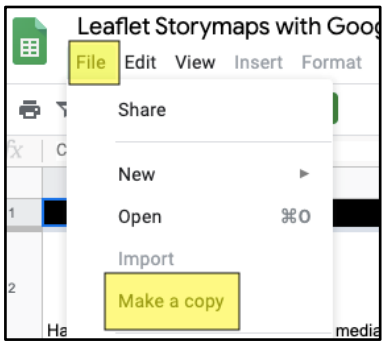
B) File > Make a Copy of Google Sheet template, Share, and File > Publish

1. Scroll down in your project to the Readme section, and to the Live Demo section. Click on the Google Sheets template link. You can also click the link below to open this Google Sheets template in a new tab: https://docs.google.com/spreadsheets/d/1AO6XHL_0JafWZF4KEejkdDNqfuZWUk3SlNlQ6MjlRFM/.

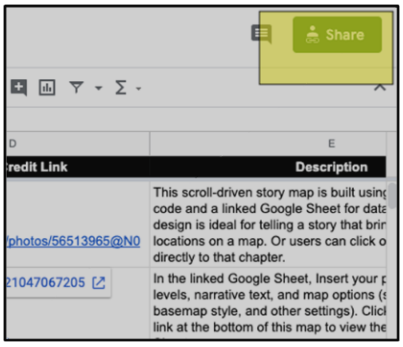
Live Demo

- The map is hosted by GitHub and can be found at https://sashadb.github.io/leaflet-storymaps-with-google-sheets-1/
- Google Sheets template https://docs.google.com/spreadsheets/d/1vx536MHdHqX-DD1f2Cvt53uTLlru1vCbHPYW7eGx7zM/edit#gid=0

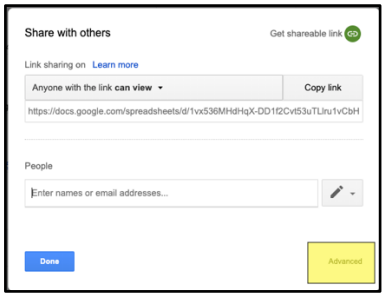
2. Sign into your Google account if you aren't already.
3. File > Make a Copy of the Google Sheet template to your Google Drive
4. Click the green Share button, click Advanced, click to change Private to Anyone with the link > Can View the Sheet. This will make your public data easier to view in your map. Click Done.
5. File > Publish and click Publish again to publish the Link to your Google Sheet to the public web, so the Leaflet map code can read it. Exit the Publish menu.



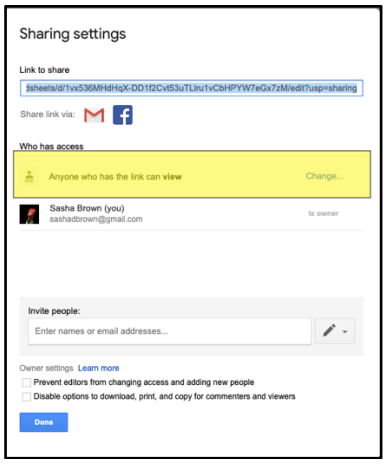
Step 3. Make a copy



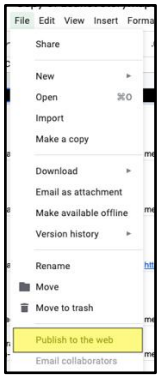
Step 4. Share

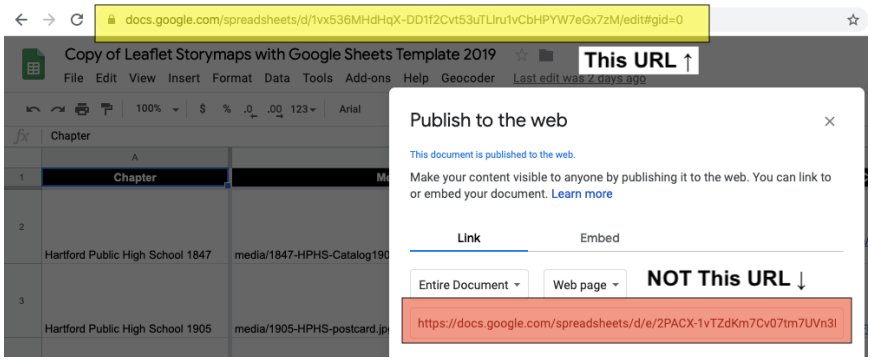


Step 4. (continued)



Step 4. (continued)





Step 5. Publish Step 6. Copy browser URL (NOT 'publish' URL)

6. At the top of your browser, copy your Google Sheet web address or URL (which usually ends in `...XYZ/edit#gid=0`). Do NOT copy the published URL (which usually ends in `...XYZ/pubhtml`).

C) Paste your Google Sheet URL in two places in your GitHub repo

1. First, connect your Google Sheet directly to your Leaflet Map code. In your Github code repo, click to open this file: `google-doc-url.js`

2. Click the pencil symbol to edit the file.

3. Paste your Google Sheet URL into the code to replace the current URL. Do not delete the single-quotation marks or semicolon.

4. Scroll to bottom of page and press Commit to save your changes. Now the Leaflet Map code can locate your published Google Sheet.

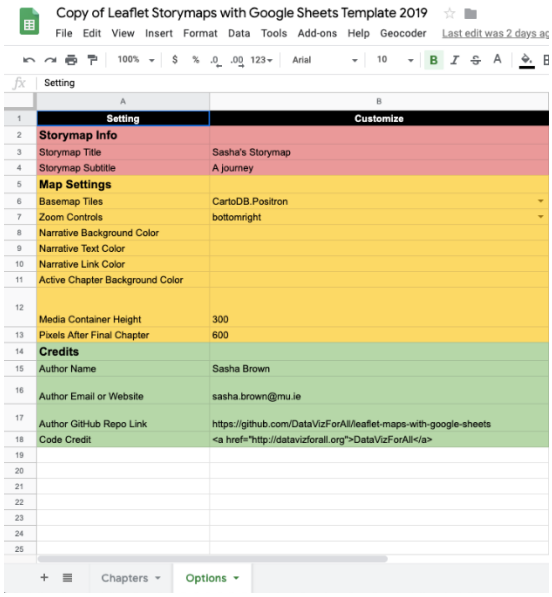
5. Next, let's paste your Google Sheet URL in a second place to keep track of it. Go to the README.md file in your GitHub repo, click to open and edit, and paste your Google Sheet web address to replace the existing link near the top. Commit to save your changes.

6. It is a good idea at this point if you haven't already to have the three tabs open that you will be using, and to close other tables. The three tabs are: 1. Your GitHub repository for the storymap; 2. Your copied Google Sheet that you will be editing;. 3. Your storymap.

D) Modify your map settings in the Options tab and test your live map

In the top-level of your GitHub repo, test the new links to your map and your Google Sheet to make sure they work and point to your versions.

In your linked Google Sheet, go to the Options Tab and modify these items:



	Setting	Customize
2	**Storymap Info**	
3	Storymap Title	Sasha's Storymap
4	Storymap Subtitle	A journey
5	**Map Settings**	
6	Basemap Tiles	CartoDB.Positron
7	Zoom Controls	bottomright
8	Narrative Background Color	
9	Narrative Text Color	
10	Narrative Link Color	
11	Active Chapter Background Color	
12	Media Container Height	300
13	Pixels After Final Chapter	600
14	**Credits**	
15	Author Name	Sasha Brown
16	Author Email or Website	sasha.brown@mu.ie
17	Author GitHub Repo Link	https://github.com/DataVizForAll/leaflet-maps-with-google-sheets
18	Code Credit	DataVizForAll

1. Map Title – insert your own title
2. Map Subtitle – insert your own version
3. Author Name – insert your own name, or first name, or initials (will be public)
4. Author Email or Website – insert your own (will be public), or delete the current name to make it blank

Open the link to your live map in a new browser tab and refresh to see your changes. If the map isn't changing, you can press Ctrl-F5 (most Windows) or Command + Shift + R (Mac) to do a 'hard refresh' to bypass any saved content.

E) Geocode locations and customize new markers in the Points tab

In your new map, our next goal is to add and modify the appearance of a new set of point markers, based on new addresses that you will enter and geocode.

In the Points tab of your Google Sheet:

1. Do NOT delete or rename any column headers. However, you have the option to add new column headers to display in your map table.
2. Geocode your new data inside your Google Sheet by dragging your cursor to select 6 columns of data: Location - Latitude - Longitude - Found - Quality - Source
3. In the Geocoder menu that appears in this Google Sheet template, select one of the geocoding services. If one service cannot locate your data, try the other. Always inspect the accuracy of the Found column.

   Open the link to your live map in a new browser tab and refresh to see your changes. If your new markers appear correctly, then delete the existing rows that came with this template.

F) Using the Data Entry Tool

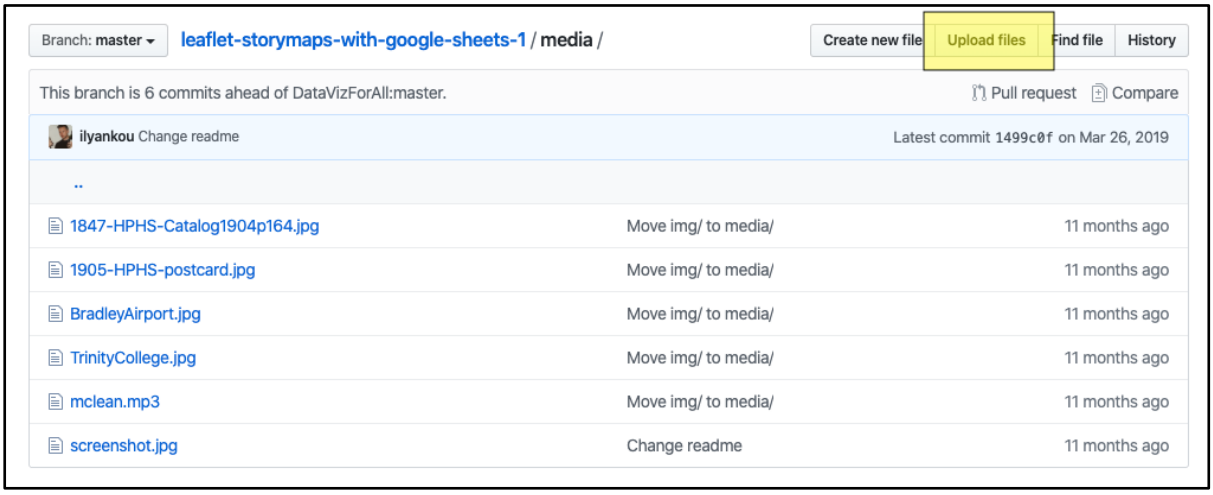
1. Find the data entry tool for storymaps by following the link below. https://sashadb.github.io/data-entry-tool/.
2. You can switch the map between Streets and Satellite images with the radio controls in the bottom right.
3. Navigate to and click on the first point on your storymap. A small white bubble with an 'x' will appear. Adjust the map zoom level to the desired zoom.
4. In the right sidebar in the textbox labelled 'Place name' enter the desired place name for your storymap.
5. Click 'Add to list'. A blue marker will appear.
6. Repeat steps 3 – 5 until you have entered all your storymap points.
7. When you are complete, click 'Copy to clipboard'.
8. Go to your Google Sheet and identify the row you would like your storymaps to start. For the beginning of the map, use Row 2. In the cell in Column A of the Row, right click and Paste. The Chapter label will be filled with the Place names and the coordinates and zoom level will be filled with the corresponding values.
9. Clear the list after copying to clipboard to continuing entering more markers

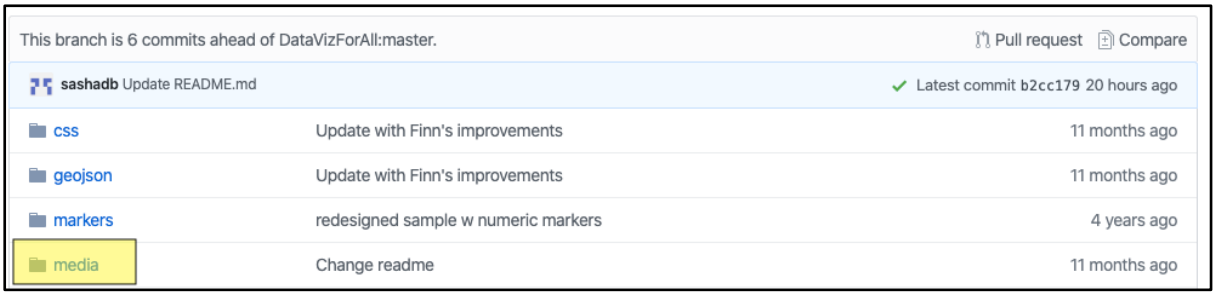
G) Adding Images

1. To add images, use the 'Media Link' column in the Google Sheet.
2. To display an image in a website, a webpage needs a link to where the image is hosted. There are 2 ways to display images in the storymap sidebar along with text.

Option 1 – Upload to GitHub

Github can host images, however in the free version of GitHub there is a limit of 25 MB for each image. To do this, go to the Media folder in your project and click on 'Upload files'.





Once the files have uploaded, go to your Google sheet. Notice in the picture below how the DataViz template references the images. The images are in the Media file, and they are referenced using the title of the image. Media credit and a URL/webpage link can dbe added in the other cells in column C and D.

Using this option, it can take a few minutes for the image to appear on your map, because GitHub is still updating the server to contain your image. Sometimes this can take a half an hour or longer.

Chapter	Media Link	Media Credit
Hartford Public High School 1847	media/1847-HPHS-Catalog1904p164.jpg	Source: HPHS Quadrennial Catalogue 1904

Option 2 – Image hosting services

If your image files are too large, you can also use an image-hosting service such as Flickr or Imgur. Navigate to the those sites, create an account if needed, and upload files publically. Both sites have a function to copy the image url, or right-click on the image and copy image address. Copy the public image URL (the URL will end in .jpg or the format of your picture if you have the correct URL) and paste the link in the cell in column B.