

Title: Developing a Web-Based Historic Places Map: A Tool for Promoting Historic Preservation and Tourism

Introduction & Objective

The practice of historic preservation allows for fresh perspectives, insights, and questions to be asked of the past. The practice of historic preservation allows for fresh perspectives, insights, and questions to be asked of the past. A historic places map helps people discover and learn about historic landmarks and monuments in a particular area. Thus, this project intends to create an interactive map that will be created using data from various sources such as historic preservation organizations, government agencies, and museums. It will include information about buildings, sites, monuments, and landscapes that are significant and registered because of their architectural, cultural, or historical value in Iowa State between 2013 till 2023. The map will be accessed through Tableau that allows users to explore and interact with the data. For example, users could click on a particular city to see detailed information about the historic places located there and click on the points from the Map to read about each individual historic property. By providing an interactive tool for discovering and learning about historic places in a particular area, the map can help foster a sense of community and identity among residents and visitors. It can also help raise awareness about the importance of preserving historic landmarks and monuments for future generations.

Tools

- ArcGIS Pro
- Tableau

Methodology

Step 1: Data collection. I got my data from the National Historic Register website, which was in an Excel format.

Step 2: Data cleaning and filtering to suit my objectives. I had 294 historic properties on my Excel document after cleaning.

AutoSave Off national-register-listed-20230119 (1).xlsx

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B23598 Warren Opera House Block and Hetherington Block

Reference number	Property Name	Status	Request Type	Restricted Address	Category of Property	State
97000651	Lassiter House	Listed	Single	FALSE	BUILDING	ALABAMA
99000150	Bell House	Listed	Single	FALSE	BUILDING	ALABAMA
84000596	Daniel Pratt Historic District	Listed	Single	FALSE	DISTRICT	ALABAMA
74000396	Montgomery-Janes-Whittaker House	Listed	Single	FALSE	BUILDING	ALABAMA
01001296	Mount Sinai School	Listed	Multiple	FALSE	BUILDING	ALABAMA
88000107	Battles Wharf Historic District	Listed	Single	FALSE	DISTRICT	ALABAMA
88001349	First Baptist Church	Listed	Multiple	FALSE	BUILDING	ALABAMA
95000556	Killcreas House	Listed	Single	FALSE	BUILDING	ALABAMA
88002809	Allen House	Listed	Multiple	FALSE	BUILDING	ALABAMA
88002811	Hamner House	Listed	Multiple	FALSE	BUILDING	ALABAMA
88002815	Orrell House	Listed	Multiple	FALSE	BUILDING	ALABAMA
16000814	Swift-Coles House	Listed	Single	FALSE	building	ALABAMA
74000397	Blakeley	Listed	Single	TRUE	SITE	ALABAMA
88002810	Captain Adams House	Listed	Multiple	FALSE	BUILDING	ALABAMA
90000930	Cullum, George W., House	Listed	Single	FALSE	BUILDING	ALABAMA
11000238	Malbis Plantation	Listed	Single	FALSE	DISTRICT	ALABAMA
100004134	Manly-Strong House	Listed	Resubmission	FALSE	building	ALABAMA
88002812	McMillan House	Listed	Multiple	FALSE	BUILDING	ALABAMA
80000679	Methodist Episcopal Church, South	Listed	Single	FALSE	BUILDING	ALABAMA
90000929	Starke, Lewis, House	Listed	Single	FALSE	BUILDING	ALABAMA
88002817	Texas, The	Listed	Multiple	FALSE	BUILDING	ALABAMA
88002818	Walker House	Listed	Multiple	FALSE	BUILDING	ALABAMA
88001353	St. Mark's Lutheran Church	Listed	Multiple	FALSE	BUILDING	ALABAMA
100002858	American Legion Post 199	Listed	Single	FALSE	building	ALABAMA
88001008	Bank of Fairhope	Listed	Multiple	FALSE	BUILDING	ALABAMA
88001007	Beckner House	Listed	Multiple	FALSE	BUILDING	ALABAMA

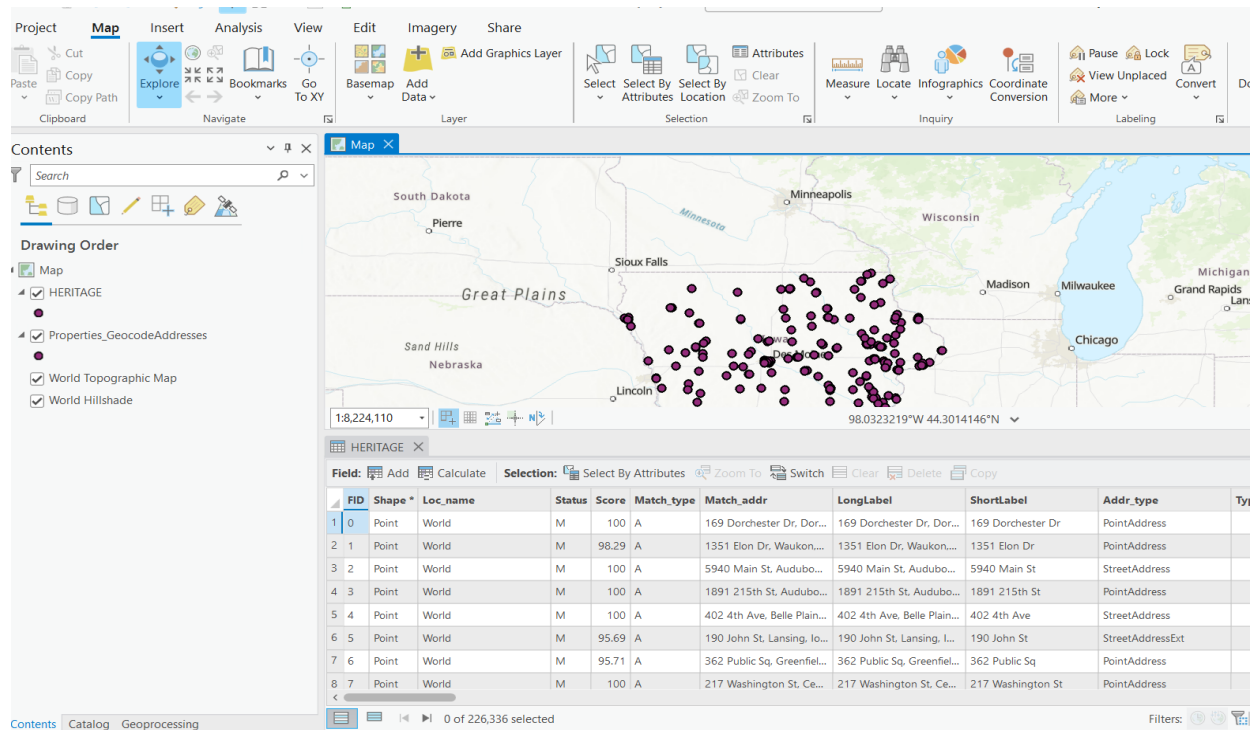
AdvSearchResults

Step 3: Geocoding. The Excel file provided the address, but we need their coordinates to visualize their spatial location on a map. To achieve this, I:

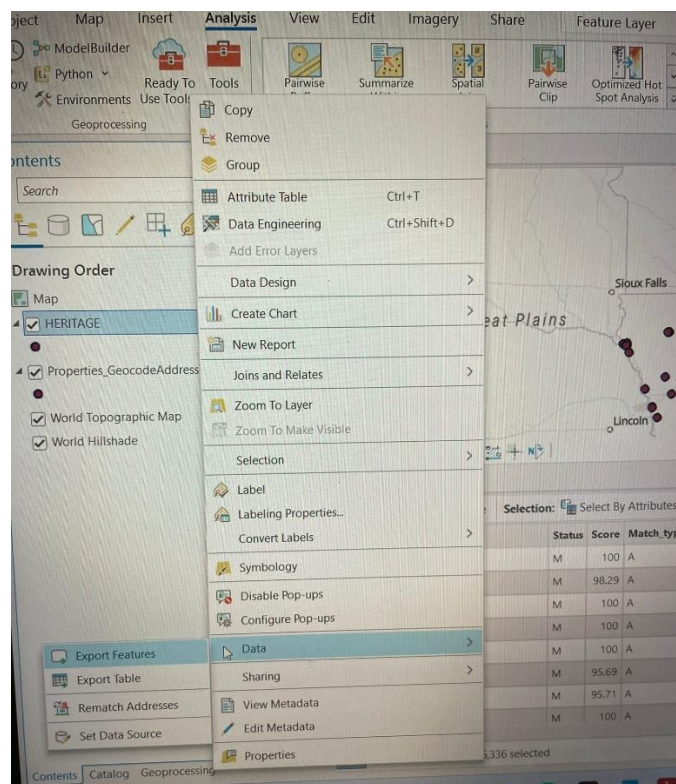
- Imported the cleaned excel document to ArcGIS Pro
- Used the Geocode Address Tool on GIS, entering the right information to generate the coordinates.

The image shows the ArcGIS Pro interface. On the left, the 'Geoprocessing' pane lists various tools. The 'Geocode Addresses' tool is highlighted with a red box. A blue arrow points from this tool to the right, where the 'Geoprocessing' pane shows the tool's parameters. The parameters are: Input Table, Input Address Locator, Input Address Fields (Multiple Field), Output Feature Class, Country, Preferred Location Type, and Routing location. The 'Run' button is visible at the bottom right of the pane.

- iii. The output is as shown below. However, there were some addresses that could not be matched, and some were tied.



Step 4: I exported my data points as a feature class, and saved as *heritage.shp*



Step 5: Back on my Excel document, the area of significance column is very distinct, which will not be helpful in visualizations. So, I needed to think of a way to classify these properties to make them understandable. I classified them according to their significance criteria (see column significance, which is explained in detail on Tableau), drawing reference from the National Historic Register.

Significance	Area of Significance
CRITERIA C & D	COMMERCE; ARCHITECTURE
CRITERIUM D	EUROPEAN
CRITERIA C & D	COMMERCE; ARCHITECTURE
CRITERIA A & C	EUROPEAN; ARCHITECTURE; SOCIAL HISTORY; ETHNIC HERITAGE
CRITERIUM A	SOCIAL HISTORY; AGRICULTURE
CRITERIA C & D	AGRICULTURE; ARCHITECTURE; COMMERCE
CRITERIA C & D	COMMERCE; ARCHITECTURE; TRANSPORTATION
CRITERIUM D	COMMERCE; ENTERTAINMENT/RECREATION
CRITERIUM A	AGRICULTURE; COMMERCE; COMMUNITY PLANNING AND DEVELOPMENT
CRITERIA A & C	POLITICS/GOVERNMENT; ARCHITECTURE
CRITERIUM D	INDUSTRY; COMMERCE
CRITERIUM C	ARCHITECTURE; INDUSTRY
CRITERIA C & D	COMMERCE; ARCHITECTURE
CRITERIUM D	COMMERCE
CRITERIA A & C	ARCHITECTURE; SOCIAL HISTORY
CRITERIUM D	COMMERCE
CRITERIA A & C	ARCHITECTURE; EDUCATION
CRITERIA A & C	ARCHITECTURE; COMMUNITY PLANNING AND DEVELOPMENT
CRITERIA C & D	ARCHITECTURE; TRANSPORTATION
CRITERIA A & C	ARCHITECTURE; COMMUNITY PLANNING AND DEVELOPMENT
CRITERIUM A	EDUCATION
CRITERIUM D	COMMERCE; SOCIAL HISTORY; POLITICS/GOVERNMENT
CRITERIA A & C	ARCHITECTURE; COMMUNITY PLANNING AND DEVELOPMENT
CRITERIUM C	ARCHITECTURE
CRITERIUM C	ARCHITECTURE
CRITERIA A & C	ARCHITECTURE; COMMERCE; COMMUNITY PLANNING AND DEVELOPMENT

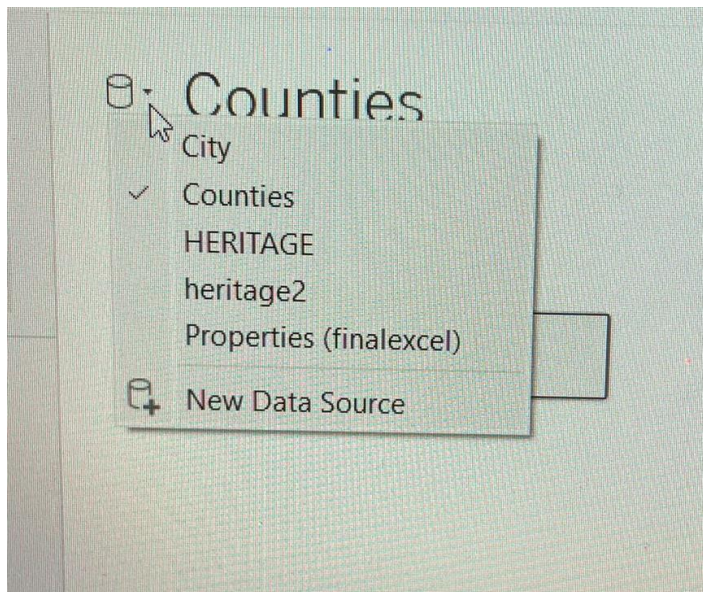
Step 6: Now, there is another problem. The historic properties that I wanted to display have no external link. This implies that I have to manually source each historic property's information.

County_count	City	Street & Number	External Link	Level of Significance - Local
Black Hawk	Cedar Falls	501 W. 1st. St.	True	F
Buchanan	Chatham	601 State St.	True	F
Buena Vista	Storm Lake	310 Cayuga St.	True	F
Carroll	Manning	620 3rd St.	True	F
Carroll	Roselle	Jade Ave. and 245th St.	True	F
Cerro Gordo	Clear Lake	10 North Lake View Dr.	True	F
Cerro Gordo	Mason City	Roughly bounded by the Winnebago R., N. Carolina, N. Kentucky & N. Virginia Aves., CPRR tracks, E. State St.	True	F
Cerro Gordo	Mason City	310 E. State St.	True	F
Cherokee	Cherokee	736 W. Cedar St.	True	F
Cherokee	Cherokee	400 Magnetic Ave.	True	F
Dallas	Minburn	210 4th St.	True	F
Des Moines	Burlington	2043 Sunnyside Ave.	True	F
Des Moines	Burlington	713 N. Main	True	F
Dubuque	Dubuque	Roughly bounded by 7th, Locust, 4th, Bissel, Jones, Bluff, Emmett & St. Mary's Sts.	True	F
Dubuque	Dubuque	2238 Queen St	True	F
Dubuque	Dubuque	Clarke Dr., N. Main & Madison Sts., Madison Park	True	F
Dubuque	Dubuque	Iowa St. between W. 11th & 12th Sts.	True	F
Henry	Salem	1735 Salem Rd.	True	F
Johnson	Iowa City	416 Reno St.	True	F
Johnson	Iowa City	715 W. Park Rd.	True	F
Johnson	Iowa City	10 S Gilbert St.	True	F
Johnson	Iowa City	3112 IA 1	True	F
Lee	Denmark	1452 280th Ave.	True	F
Linn	Cedar Rapids	616 4th Ave. SE.	True	F
Linn	Cedar Rapids	B Ave., NE. from 15th to 21st Sts.	True	F
Linn	Cedar Rapids	1330 Elmhurst Dr., NE.	True	F



County	County_count	City	Street & Number	External Link
Adair	Adair	Greenfield	102-362 Public Square	Greenfield Public Square Historic District - Wikipedia
Allamakee	Allamakee	Dorchester	169 Dorchester Ave.	Waterloo Ridge Lutheran Church - Wikipedia
Allamakee	Allamakee	Lansing	100-401 Main St.	Lansing Main Street Historic District - Wikipedia
Allamakee	Allamakee	Waterville	1351 Elon Dr.	West Paint Creek Synod Evangelical Lutheran Church - Wikipedia
Audubon	Audubon	Audubon	1891 215th St.	Audubon County Home Historic District - Wikipedia
Audubon	Audubon	Audubon	5940 Main St.	Ross Grain Elevator - Wikipedia
Benton	Benton	Belle Plaine	Roughly bounded by	Belle Plaine Main Street Historic District - Wikipedia
Benton	Benton	Belle Plaine	402 4th Ave.	Preston's Station Historic District - Wikipedia
Black Hawk	Black Hawk	Cedar Falls	102-422 Main St.	Cedar Falls Downtown Historic District - Wikipedia
Black Hawk	Black Hawk	Cedar Falls	217 Washington St.	Cedar Falls Post Office - Wikipedia
Black Hawk	Black Hawk	Cedar Falls	423, 501 & 503 W. 1st St.	American School of Wild Life Protection Historic District - Wikipedia
Black Hawk	Black Hawk	Cedar Falls	501 W. 1st St.	Daniel and Margaret Wild House - Wikipedia
Black Hawk	Black Hawk	Waterloo	500 Sycamore St.	Hotel President (Waterloo, Iowa) - Wikipedia
Black Hawk	Black Hawk	Waterloo	500 E. 4th St.	Overland Waterloo Company Building - Wikipedia
Black Hawk	Black Hawk	Waterloo	325 E. Park Ave.	Waterloo Masonic Temple - Wikipedia
Black Hawk	Black Hawk	Waterloo	217-333 W. 4th St.	Waterloo West Commercial Historic District - Wikipedia
Boone	Boone	Boone	843 R Ave.	Des Moines Township No. 7 - Wikipedia
Bremer	Bremer	Waverly	Roughly bounded by	Harmon and LeValley Northwest Historic District - Wikipedia
Bremer	Bremer	Waverly	Roughly bounded by	Old Fourth Ward Southeast Historic District - Wikipedia
Bremer	Bremer	Waverly	Roughly bounded by	Sturdevant Southwest Historic District - Wikipedia
Bremer	Bremer	Waverly	100 Wartburg St.	Old Main (Wartburg College) - Wikipedia
Bremer	Bremer	Waverly	Roughly E. Bremer Ave.	Waverly East Bremer Avenue Commercial Historic District - Wikipedia
Bremer	Bremer	Waverly	121 1st St., NW	Waverly Municipal Hydroelectric Powerhouse - Wikipedia
Buchanan	Buchanan	Chatham	601 State St.	Pleasant Grove Presbyterian Church - Wikipedia
Buena Vista	Buena Vista	Storm Lake	310 Cayuga St.	Old Storm Lake High School - Wikipedia
Butler	Butler	Parkersburg	401 Coates St.	Renke and Wubke Renken House - Wikipedia

Step 7: Adding data to Tableau. In this step, I added my Excel file. Based on my selection, I figured that not all 99 counties had historic properties, so I needed to get my counties' shapefile for better visualization. I added the city shapefile in case it might be useful. I downloaded the data from the Iowa geodatabase.

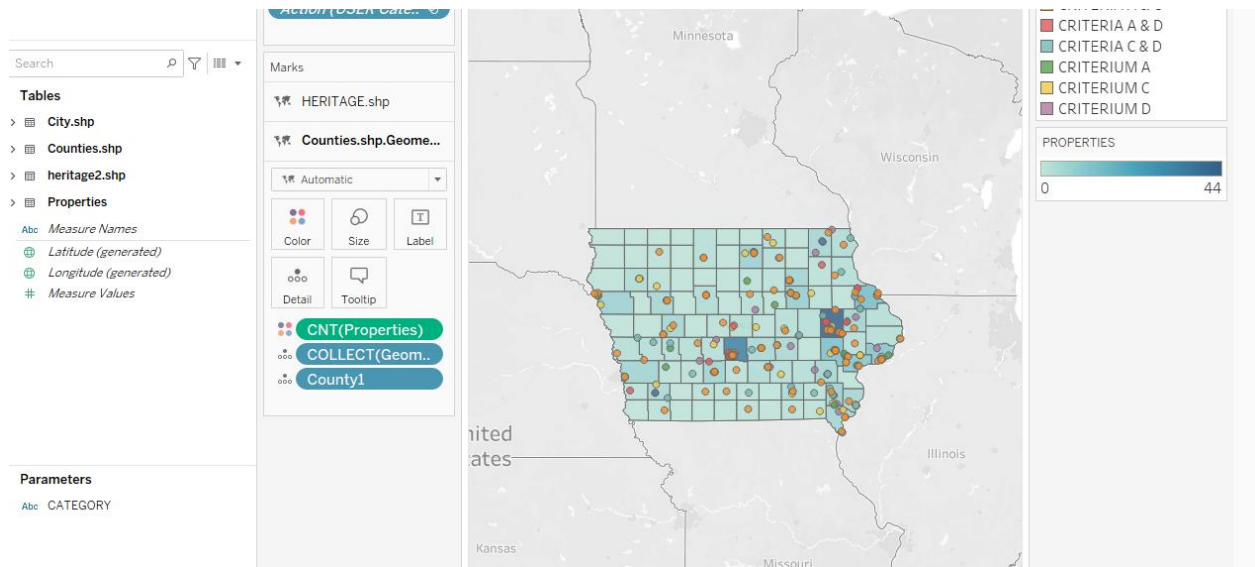


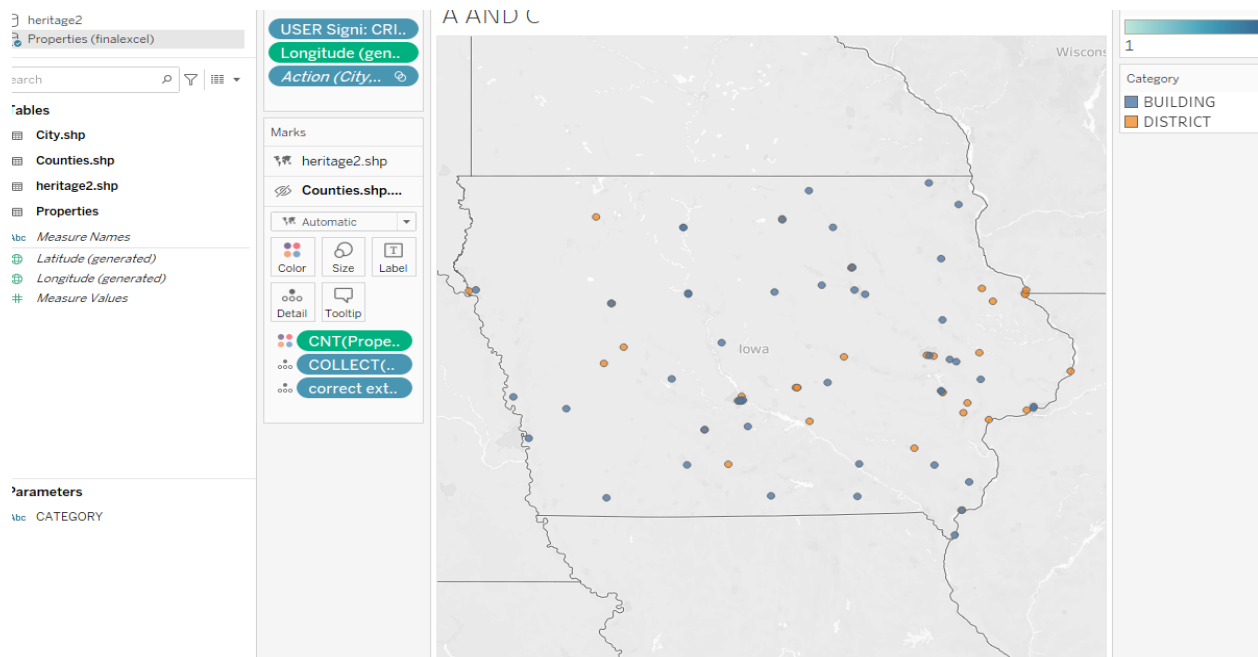
Step 8: I joined the data to form a connection.

The screenshot shows the Tableau Desktop interface. On the left, the 'Connections' pane lists 'finalexcel' (Microsoft Excel), 'heritageshapefile' (Spatial file), 'Counties' (Spatial file), 'City' (Spatial file), and 'HERITAGE' (Spatial file). The 'Sheets' pane shows 'Properties' selected. The main view displays the 'Properties (finalexcel)' connection diagram, which shows a central 'Properties' box connected to three other boxes: 'City.shp', 'Counties.shp', and 'heritage2.shp'. Below the diagram, a table shows the data fields for the 'Properties' connection.

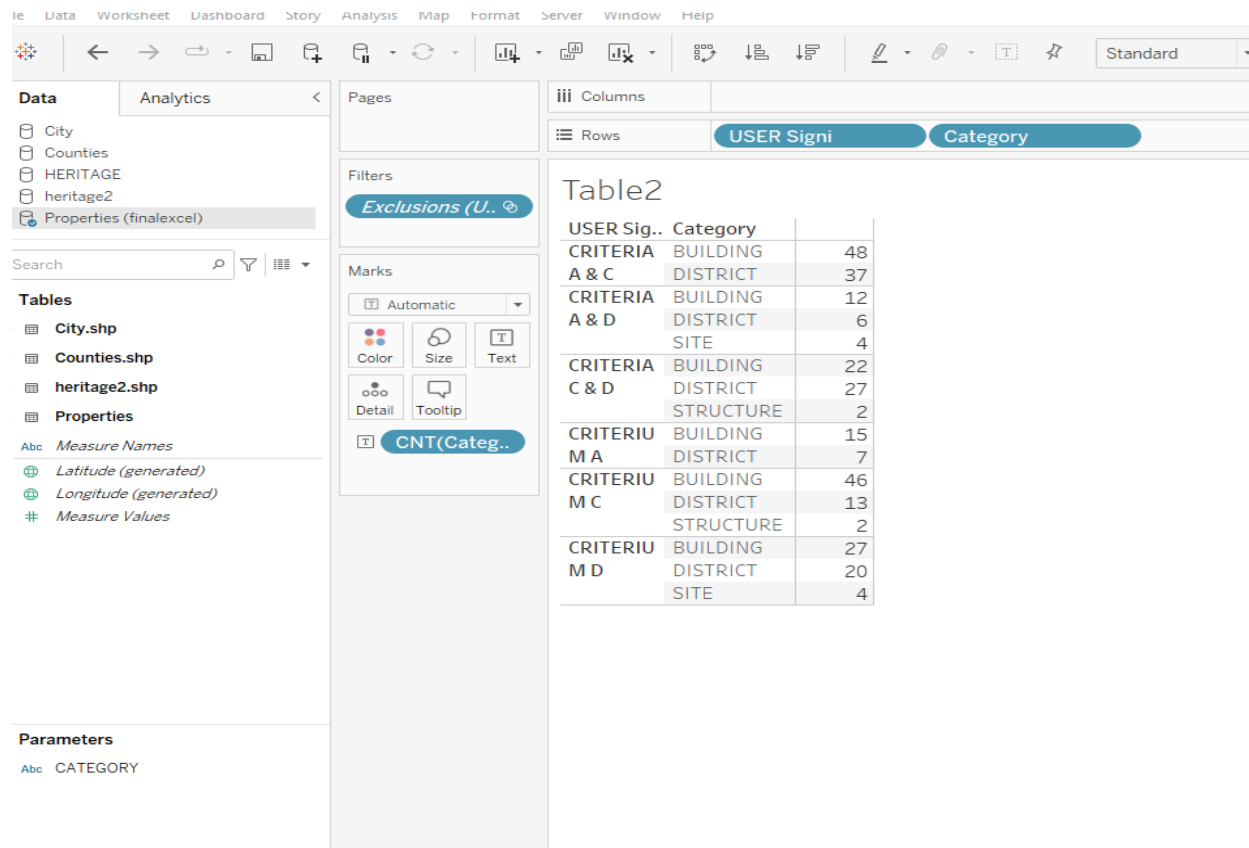
Name	Type	Field Name	Physical Table	Remote Field Na...
Properties	Calculation...	Calculation1	Calculation	Calculation_1258...
	Reference...	Reference number	Properties	Reference number
	Property ...	Property Name	Properties	Property Name

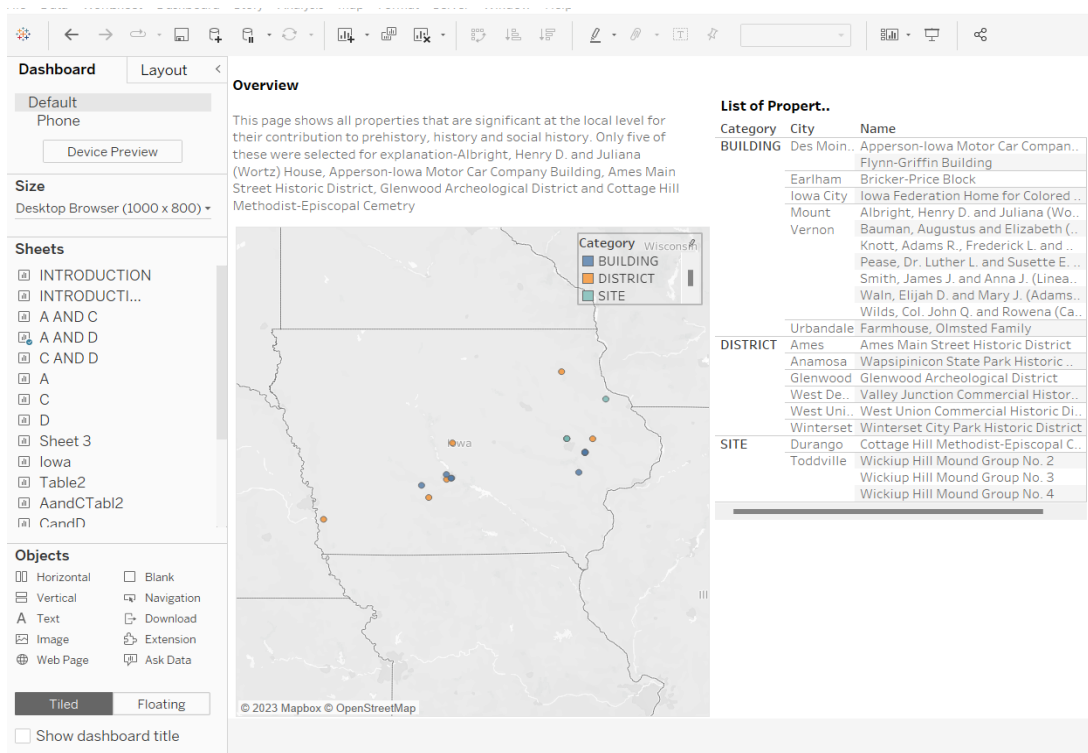
Step 9: Data Visualizations on Tableau. In this step, I created my desired visualizations based on my classifications on several sheets using the color and detail tools and the tooltip. Some examples are shown below:



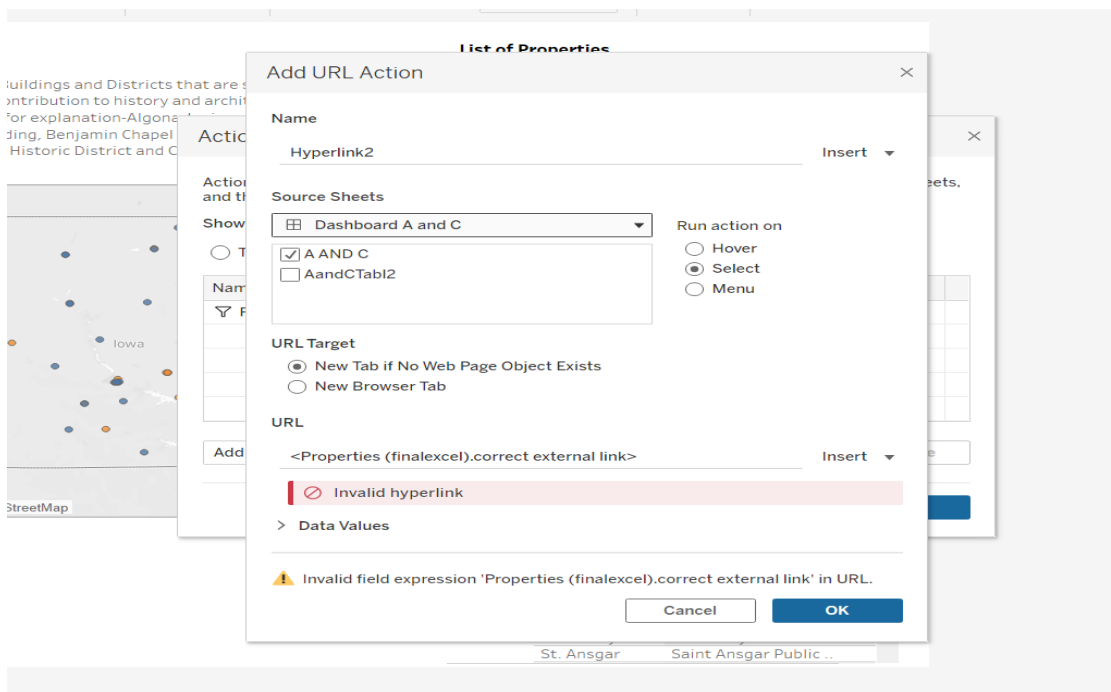


I also created tables for summary statistics, and to make the map more interactive.





Step 11: Adding Links. This step was a little tricky for me. I initially used the action tool from the worksheet and followed the instructions, but it did not work. Then, I was advised to add my URL as a detail in the sheet and rerun the process, but it still did not work.

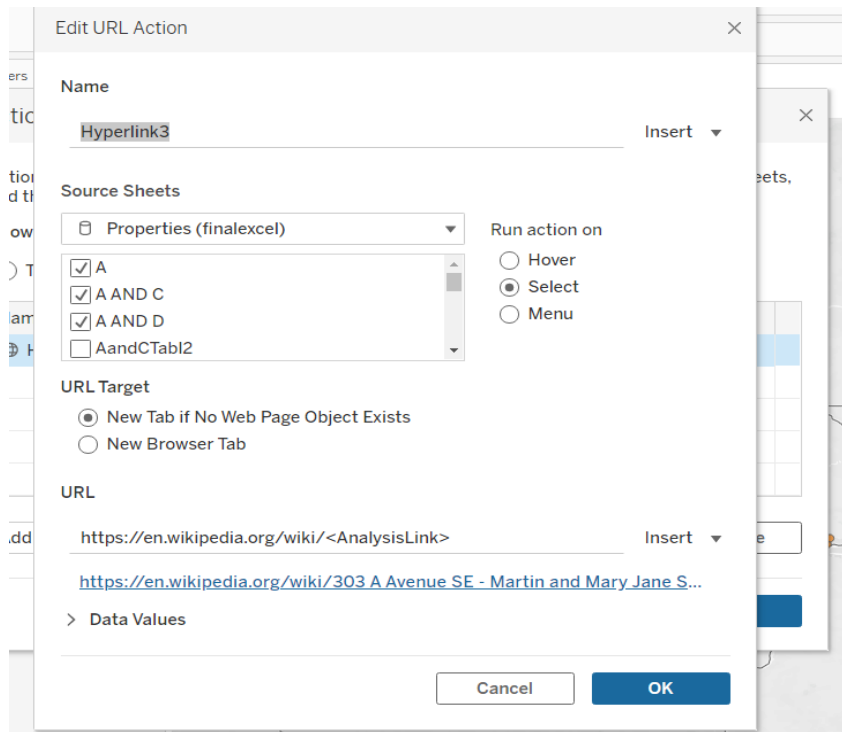


In the process, I got another piece of information to ensure that my Excel columns are in this format—<https://en.wikipedia.org/wiki/.....>It still did not work.

So, I figured I needed to remove the “- Wikipedia” at the end of the links and the https://.....from the beginning, too, to make it look like this:

AnalysisLink
Greenfield Public Square Historic District
Waterloo Ridge Lutheran Church
Lansing Main Street Historic District
West Paint Creek Synod Evangelical Lutheran Church and Cemetery
Audubon County Home Historic District
Ross Grain Elevator
Belle Plaine Main Street Historic District
Preston's Station Historic District
Cedar Falls Downtown Historic District
Cedar Falls Post Office
American School of Wild Life Protection Historic District
Daniel and Margaret Wild House
Hotel President (Waterloo, Iowa)
Overland Waterloo Company Building
Waterloo Masonic Temple
Waterloo West Commercial Historic District
Des Moines Township No. 7
Harmon and LeValley Northwest Historic District
Old Fourth Ward Southeast Historic District
Sturdevant Southwest Historic District
Old Main (Wartburg College)
Waverly East Bremer Avenue Commercial Historic District
Waverly Municipal Hydroelectric Powerhouse
Pleasant Grove Presbyterian Church
Old Storm Lake High School
Renke and Wubke Renken House
https://en.wikipedia.org/wiki/Carroll City%E2%80%93Mount Olivet Cemetery
Manning Commercial Historic District (Manning, Iowa)
Manning Milwaukee Railroad Trestle

Step 12: Back to Tableau. Here, I refreshed my data source again to reflect the changes. I removed the previous link from the detail on my worksheet and added my new links as detail. On my worksheet from the menu bar, I selected my worksheet>Actions>Add actions, which opens a new interface. I selected my source sheets and changed *the run action on* to select. For the URL, I now entered https://en.wikipedia.org/wiki and clicked on *Insert* to the right to add the column that contained my links (in this case, AnalysisLink), and it worked!



Step 13: Creating a Story. In this step, I put my dashboards together to form a story, which is the final output of this document.

Step 14: Cleaning. I returned to my sheets and cleaned maps and tables to be visually appealing.