

Advanced Web Mapping and Visualization

Class Page

<http://guides.lib.virginia.edu/gis>

Click **Teaching Resources > Spring 2020 Workshops**

ArcGIS Online

<https://uvalibrary.maps.arcgis.com/home/>

Create or Login to ArcGIS Online Account

***If you're not a UVA affiliate, or don't have an Eservices login, please stop here and await further instructions.

Go to: <https://uvalibrary.maps.arcgis.com/home/signin.html>

- Click **University of Virginia**
- Sign in using your NetBadge credentials.



Open the Map

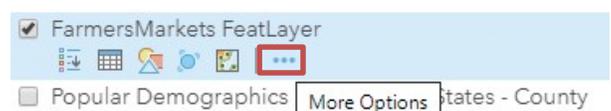
1. Click the search icon in the top bar and enter "Advanced Mapping Workshop".
2. Find the "Advanced Mapping Workshop" map and open it by clicking the three dots in the bottom right corner of the panel and clicking **Open in Map Viewer**.
3. Save map to your content with appropriate name and tags.



Symbology

1. Click **Basemap** and select **Light Gray Canvas**.
2. Click the checkbox next to the Farmers Markets layer to make it visible.

Notice that when you hover over a layer, you're given some options to customize the layer. We're going to be working with these options today. When **More Options** is mentioned, it's referencing the button with the three dots icon.



3. Click **More Options** on the Farmers Market layer, click Rename, and name the layer “Virginia Farmers Markets”.
4. Click **Cluster Points** on Farmers Markets to enable clustering. Move the slider to change the clusters. Uncheck **Enable Clustering** when done. Click **OK**. 
5. Click **Change Style** on Farmers Markets. For the display attribute, select “Organic”. On the **Types (Unique Symbols)** panel, click **Options**. 
6. Click the point symbol next to “Y” to Change Style. Select the **Shape** tab and choose the star shape. Increase the size to 24. Click **OK > OK > Done**.

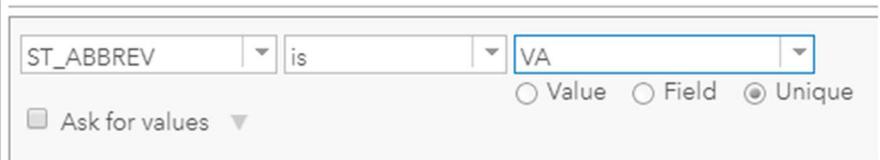
You’ve now symbolized the layer on a categorical attribute. Is it easier to identify the markets with organic items? This is a yes or no field, why are there three symbols?

7. Click **Change Style** Farmers Markets again. Change the attribute to “Show location only”. Click **Select** on the Heat Map panel.
8. Click the **Options** button on the Heat Map panel. Move the sliders to change the visualization. Set the **Transparency** to 0%. Click **OK > Done**.
9. Turn on the Popular Demographics County layer.

You’ll notice two things. 1) The layer draws over the Heat Map, despite being under it in the layer list. This is a known behavior. 2) The layer shows counties for the entire country. Let’s fix those issues.

10. Click the **Filter** button on the County layer. 

11. Set up the filter as shown in the image. Select the **Unique** radio button to enable a pull-down list of distinct values. Click **Apply Filter**.



ST_ABBREV is VA
 Ask for values
 Value Field Unique

12. Click **Change Style** on the County layer. Select “2010 Total Population” as the attribute. On the **Counts and Amounts (Color)** panel, click **Select** then **Options**.
13. Set the transparency to a level that allows you to see the heat map better. Check the box to **Classify Data**. Select the different classifications and notice the difference in the map. Click **Symbols** and choose a different fill option. Click **OK > OK > Done**.

Feel free to play around with the different style options. Once you’ve chosen an attribute to visualize, the **Add attribute** button becomes available. Try adding multiple attributes, such as the generation demographics, to see more symbolization options.

With the right tweaks, it's possible to see the differences between the counties, but the county outlines get a little lost. We can fix that by copying the county layer and just displaying the outlines in the copied layer.

14. Click **More Options** on the County layer and select **Copy**. Click **Change Style** on the newly created layer. Change the attribute to "Show location only". On the **Location (Single symbol)** panel, click **Options**.
15. Click **Symbols**. On the **Fill** tab, select the **No Color** swatch. 
16. Select the **Outline** tab. Choose a black outline and set the **Transparency** to 0%. Click **OK > OK > Done**.

Labels and Pop-ups

1. Click the **Bookmarks** on the toolbar, and click **UVA Grounds**.
2. Click the checkbox next to the **100 Objects** layer to make it visible.
3. Click **Change Style** on the 100 Objects layer. Select "SiteType" from the attribute list, then click **Done**.
4. Click **More Options > Create Labels** on the 100 Objects layer.
5. Select "name_" from the **Text** pull-down. Check the box to enable the **Halo** option.

From this zoom level, our labels are a bit bunched together and difficult to read. Let's set the visible range so that the labels aren't visible until we zoom in a couple of levels.

6. Move the left pointer on the visible range slider until it reads "Buildings". The image shows a horizontal slider labeled "Visible Range:". Below the slider, there are two dropdown menus: "Buildings" on the left and "Room" on the right. The slider has a vertical line indicating a range, with a small triangle marker positioned towards the right side.
7. Click **OK**. Zoom in on the map until the labels appear.
8. Click on a 100 Objects point on the map to trigger the pop-up. Take a look at the attributes and style. What should we keep and what should we delete?
9. Click **More Options > Configure Pop-up** on the 100 Objects layer.
10. Delete the text in **Pop-up Title**. Click the + and select "name_" from the list.
11. Under **Pop-up Contents**, select **Configure Attributes**. Uncheck the attributes that aren't helpful or useful to viewers of your map. Click **OK > OK**. Click a point on the map to see the changes.

One of the attributes in this layer is a URL for an image. Let's configure the pop-up to display that image with a title and caption.

12. Click **More Options > Configure Pop-up** on the 100 Objects layer.
13. Under **Pop-up Contents**, select "No attribute information" in the **Display** pull-down.'
14. Scroll down to **Pop-up Media** and click **Add > Image**.
15. Using the + symbols, add the appropriate attributes as shown to the right. When done, click **OK > OK**.
16. Click a point on the map to view the new pop-up configuration.

Configure Image ×

Specify the title, caption and URL for this image. Insert field names to derive the display from attribute values.

Title:

Caption

URL

Link (optional)

Refresh Interval

Refresh image every minutes.

OK

CANCEL

Extra Credit – Time Aware Layers

1. Click **Add > Search for Layers**.
2. Choose **My Organization** and enter "building history" into the search bar.
3. Click the + for "UVA_BuildingHistory" to add the layer to your map.
4. Click **More Options > Enable Time Animation**.

Notice that a time slider appears on the bottom of the map.

5. Click the **Play** button to start the time animation.

The time slider is configured by build date, and only shows buildings within a moving window. Let's configure it to show the cumulative growth as they were built.

6. Click **Configure** on the time slider, then click **Show advanced options**. F
7. For the **As time passes option**, choose **progressively display all the data** then Click **OK**. Play the animation again to see the difference.
8. Click **More Options** on the Buildings layer and click **Disable Time Animation**. Notice that the time slider disappears, and all buildings are displayed.
9. Click **More Options** on the Buildings layer, and click **Show Item Details**.
10. Click **Time Settings** on the UVA_BuildingHistory layer.

Any layer with a date field can be time enabled. When a time enabled layer is added to the map, the time slider will automatically appear.