Week 11 -Tutorial 8a & 8b (Part 1)

Data Collection and Web Map

Create a data collection app to collect data and create web mapping applications for the data visualization

Part 1: Prepare System and Download DEM data

1. Log in to your lab computer
2. Create a folder called **Labs**
3. Create a folder called **Week11** within the **Labs** folder
4. Create a folder called **Data.** Now you have a folder in the directory **Week11.** We will keep all the data, related files and documentations in the **Data** folder, and the Mxd files or PDF maps or image maps as a result of your class will be kept directly under **WeekX** folder in future.

Data: Download the geodatabase from the blackboard under **course materials** page. It is called **Week11lab8a8b**. Data contains following layers:

a. Study Area

Part 1 (8a)

Preparing data on desktop:

Goal of the tutorial is to build a collector based app that can be used to record pot holes around the UTSC campus. We will build a simple app, if you have smartphones, you can test it using the smart phones, if not we will create an online version so that you can test it using the web platform alone.
You need to have your ArcGIS online (referred as AGOL hereafter) account (at least publisher level privilege) set up before staring the project. We will follow these steps:

1. Create your geodatabase and domain
2. Create feature class and add correct field types
3. Publish the feature service to your organizational account
4. Start collecting data

1. Create your geodatabase and domain

I. Start ArcMap and open the **Catalog** window.

II. Right-click the file folder in the Catalog tree where you want to create the file geodatabase.

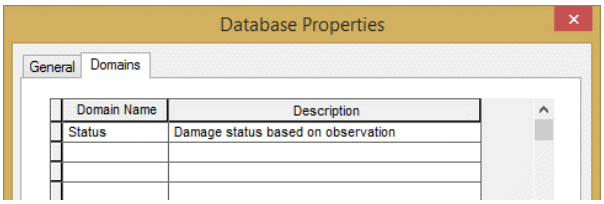
III. Point to **New**.

IV. Click **File Geodatabase** to create a new file geodatabase in the location you selected. Name your geodatabase **lab8a8b.**

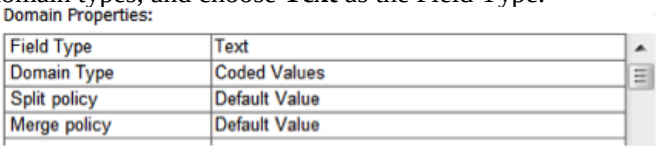
V. We are now going to create the multiple choices for some fields. In order to do that we need to create domains in your geodatabase. The users can select from the list while collecting data. In order to do that, in the **Catalog tree**, right-click the geodatabase and click **Properties**.

VI. Click the **Domains** tab.

VII. Click the first empty field under **Domain Name** and type **Status** for the new domain. Press the Tab key or click the new domain's description field, and type a description for the domain.

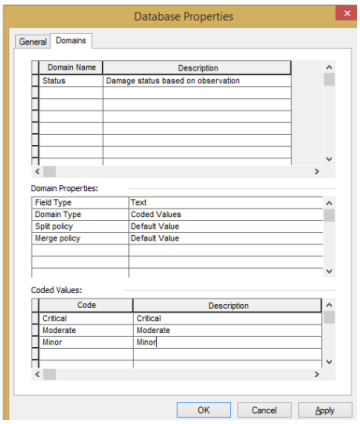


VIII. Click the field next to Domain Type, click the drop-down arrow, click **Coded Values** from the list of domain types, and choose **Text** as the Field Type.



IX. Click the first empty field under Coded values and type **Critical** for the first valid code.

X. Click the new coded value's Description field. Type **Critical** as the user-friendly description for this coded value. Make sure the other coded values match the image below:



XI. Click **OK** to create the new domain in the geodatabase and close the dialog box.

XII. Your domain is created. Now, you are going to create a feature class (a collection of feature that share the same geometry type and information model) and use the domains-

2. Create feature class and add correct field types

I. In order to do that **Right-click** the geodatabase, point to **New** and click **Feature Class.**

II. Type Pothole_inspection as the name, Pothole Inspection as alias, and "point feature" as the feature type, and click **next**.

III. Choose a coordinate system. Coordinate systems allow your features to be projected properly and accurately on a map, making the features appear in the correct locations. We are going to use our usual NAD 83 Zone 17 for this tutorial.

IV. Click Next, and accept all default until you get to the Field Name.

V. Under field name type Inspector and data type text. Under length below, change it to 100. This field will be filled out by you, the inspector. Normally, we will have the "users" automatically picked out. If an organization has limited user account (due to fees/cost) and they need to share the same device for data collection, it might be advisable to the field staff to use an empty field and fill out by the users who collects the data.

Questions to fill out the form:

1. What do you think will be the problem in the future if we leave people to enter information freely without using dropdowns (or selection options)? Would you recommend it to all type of data collection, why or why not?

VI. On the next row, add a field called "PotholeStatus". Use the dropdown below next to "domain" and select "status" domain you created earlier.

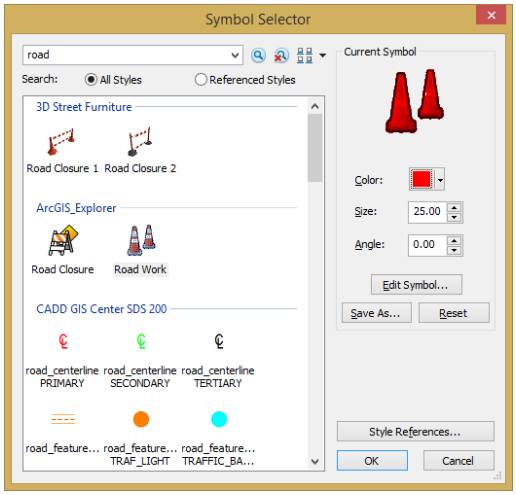
VII. Click finish to complete this section. A layer will be added to your map with the fields you created. *If you were to edit the file, you could use the domain you created.* We are not going to edit at this point, but if you are interested in it, feel free to do so.

VIII. To allow users to take pictures in the field and attach them to their assessment reports, enable attachments on the feature class you just created. To do so, right-click the feature class in the Catalog window, choose **Manage**, and click **Create Attachments**.

Questions to fill out the form:

2. What happens if you try to do the step from above, but you are in the editing mode? Why does that happen?

IX. Find the symbology of the layer you created and choose unique values. Select following symbology for Critical, Moderate and Minor status. Search for "road" under the symbology search area. Change the colours to Mars Red for Critical, Solar Yellow for Moderate and Yogo Blue for Minor symbology.

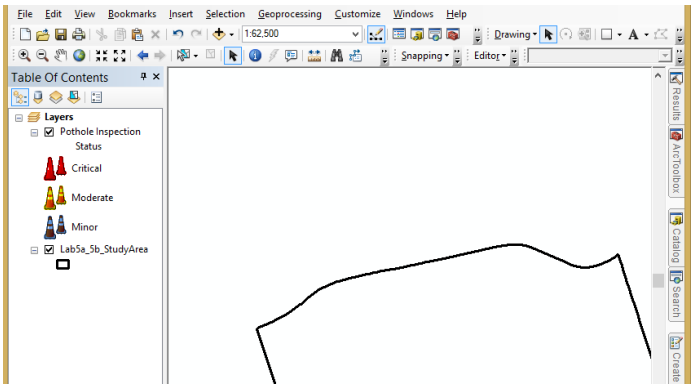


3. Publish the feature service to your organizational account

I. If you have not accepted the invitation to join GGRC30H3_Fall2017 group on ArcGIS online yet. Log into ArcGIS online, under group, there should be a notification waiting for you. Click on the notification and accept the invitation to join the group called "GGRC30H3_Fall2017".

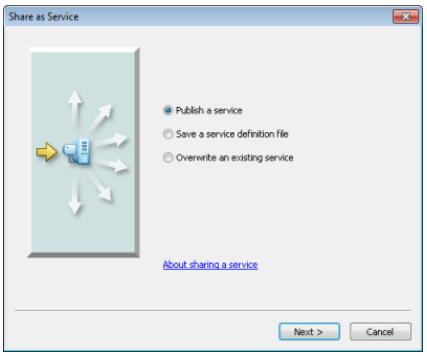
II. Sign in to AGOL >>File>>sign in using your AGOL account that starts with GGRC.

III. Add the study area layer and colour it with a black outline. The desktop at this point should look something like this:

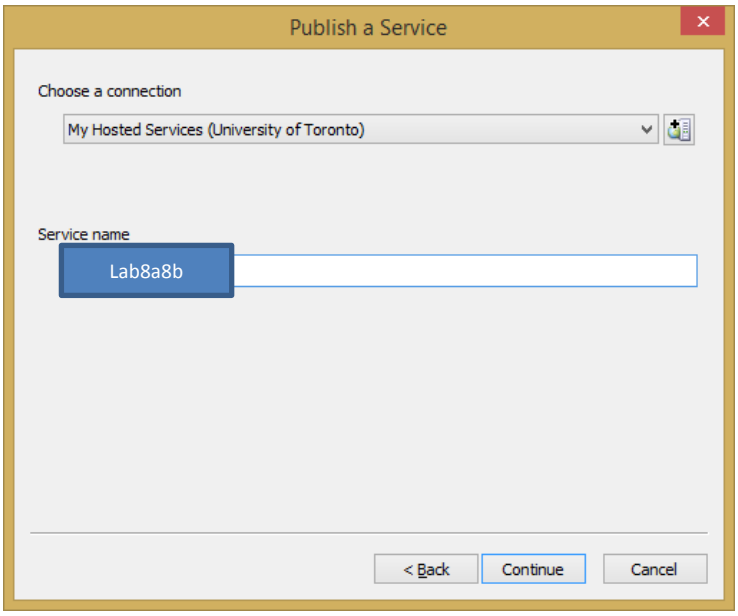


IV. We need to put this data for the web map and to collect data. We are going to publish it to AGOL.

V. Click the File menu, choose **Share As,** and click **Service**. The Share as Service panel opens.



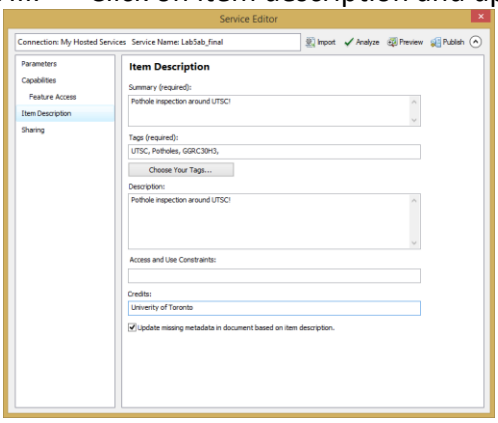
VI. On the Share as Service panel, confirm the option **Publish a service** is selected. Leave the service name as is. Click **Next** and make sure your window matches the one from below, and click continue.



VI. Click on the **capabilities** tab on the left and **select** "Feature Access" and uncheck Tiled mapping on the right.

VII. Under feature access: check Create**, Query, Sync, Update**

VIII. Click on item description and update the text to match the window from below:

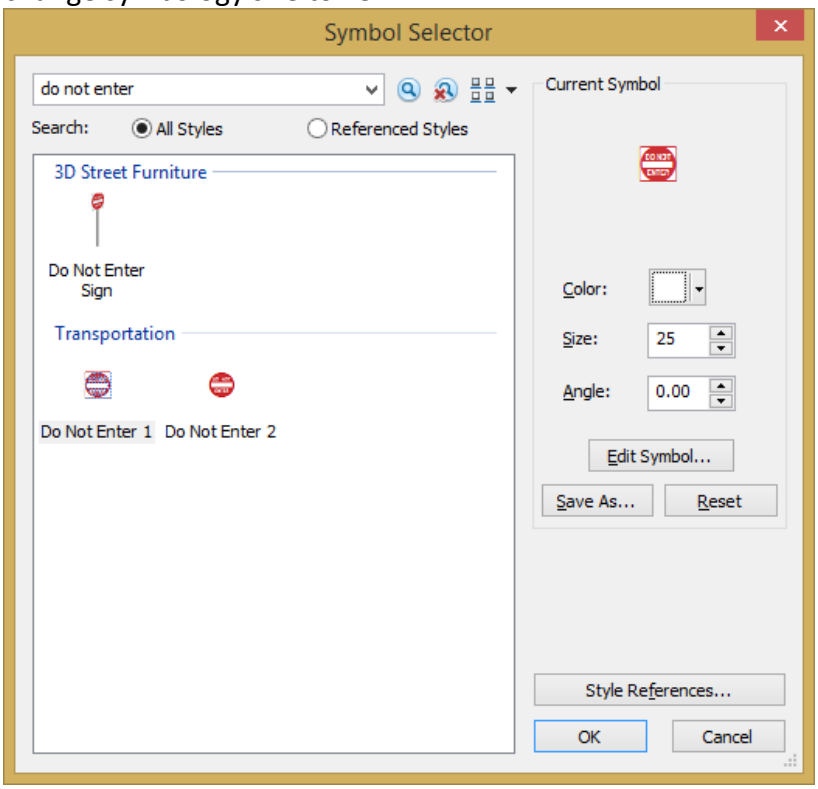


IX. Click on **Sharing** on the left and select **GGRC30H3_Fall2017** on the right. Click publish. There might be some error messages. Find out what the errors are and what they mean.

Questions to fill out the form:

3. **What are the things we need to pay attention? What does the red x mean and what does the yellow warning sign mean before publishing? What might cause other errors?**

X. Since you cannot publish with the existing symbology, you are going to use the symbology to match following (search for “do not enter” and select do not enter 1. Leave default colour for critical, Solar Yellow for moderate and Yogo Blue for minor) and change symbology size to 25:



XI. Repeat the steps from above and publish the service. You have the right symbology this time, it will publish the layer. It will take a couple of minutes. You will see a message notifying you of the published service.

Fill out the participation form below:

https://goo.gl/forms/VfWqAXiWFBwWTYa63

Reference:

ESRI tutorials and references, 2017.