ArcGIS Online: GIS for Everyone

Spring 2016
Exercises

Description: These exercises introduce GIS through an easy to understand and practical tool using only a web browser. ArcGIS Online can be used to create stylish, fully interactive maps that can be embedded in websites and presentations or used to create simple and quick standalone web map applications.

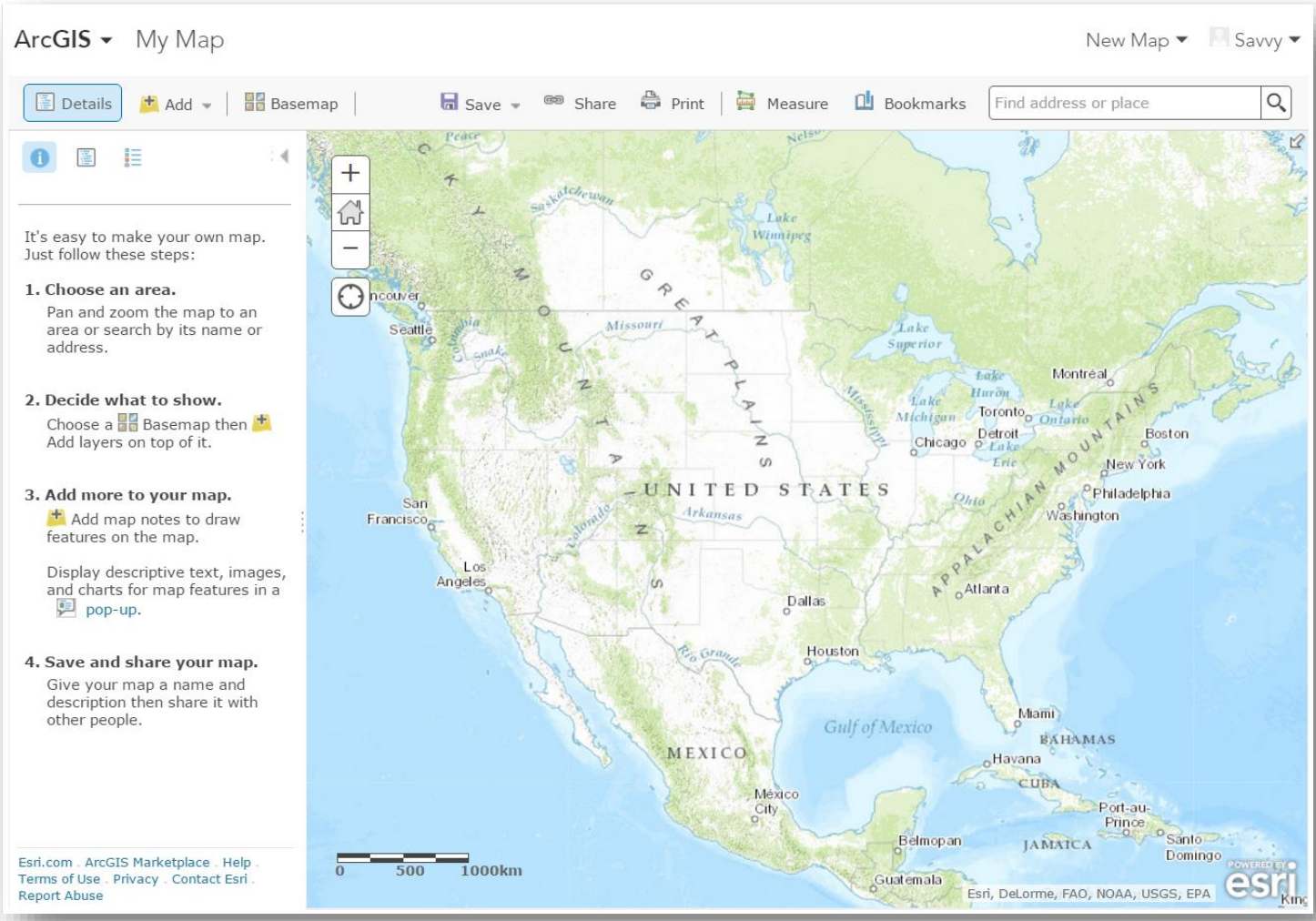
Exercise 1: Explore the ArcGIS Online Web Interface

Step 1. Sign In to ArcGIS Online

A. Go to https://www.arcgis.com/home/signin.html
B. Sign In: Username: **SavvyResearcherUIUC** Password: **savvy2016**

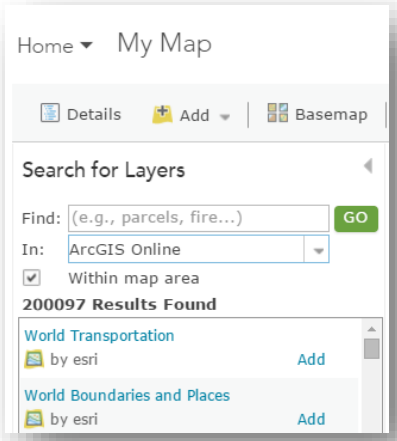
Step 2. Start a New Map

A. On the landing page, **click Map** and a new, blank map will be loaded
B. Note the different elements of the web map window
C. **Click Basemap** to see what types of basemaps are available. Click on a few different ones to see how the basemap changes.



Step 3. Add Ready to Use Content to the Map

A. **Click** the **Add** button and choose **Search for Layers**
B. In the **Find** box, enter **World Countries** and ensure the **In:** box is **ArcGIS Online**
C. Scroll down until you find **World Countries (Generalized)**
D. **Click Add** to add the data to the map.
E. Explore the data by **clicking on a country**. What happens?



Step 4. Save Web Map and Explore My Content

A. **Click** **Save** with the title **World *Your NetID***, add the tag **world**, and the summary **The World**, then click **Save Map**
B. **Click** the **ArcGIS** drop-down in the upper left, and **click My Content** to view where your map is saved

Exercise 2: Adding GIS Data to the Web Map

Step 1. Download the Exercise Data

A. Navigate to https://uofi.box.com/ArcGISOnline in a web browser and go to the **Data** folder
B. **Download the Excel and compressed Zip (.zip) files to a folder on your computer** – the desktop is ok
C. In **Windows Explorer (of Mac equivalent)**, **navigate** to the folder and explore the data
   1. Notice that there are **two Excel files (.xlsx) and one compressed (.zip) file**
   2. **DO NOT EXTRACT THE ZIP FILE!**
      a. It contains all the files that make a shapefile and will be added to the web map
      b. Double click the file to see how many files are included

Step 2. Reopen the Web Map 'World *Your NetID*' from Exercise 1 in My Contents

Step 3. Add a shapefile

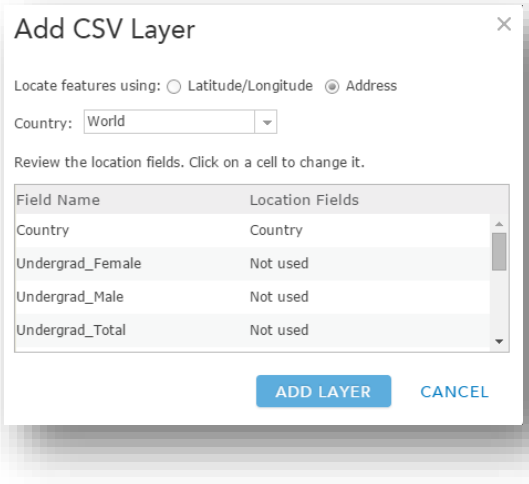
A. **Click** the **Add** button and choose **Add Layer from File**
B. On the window, **click Choose File** and **navigate to the exercise data**
C. **Click** on **US_States.zip** and **click Open**
D. Two radio buttons will appear; select **Keep original features**
E. **Click Import Layer** and you will see all the US states appear over the Income layer

Step 4. Explore Data in Microsoft Excel and Convert to CSV format

A. Open the excel file you just downloaded
B. Note any **fields that identify location**, such as a **Country field** or a **series of Address fields**. These will be used to **geocode the data**. **What location field(s) do you see?**
C. Note the other fields and the types of data. Do you see **text**, **integer** or **decimal numbers**, or **date** fields?
D. Save the **Excel file** as a **CSV file**
   1. In Excel, **click the File tab** in the upper left
   2. In the menus on the left, **click Export**
   3. Under the Export options, **click Change File Type** and then **click CSV (Comma delimited) (*.csv)** near the bottom right – if you are unable to complete this step, a copy of the CSV file is in the **Answers** Box folder
   4. **Save the file** with the **default name** and in the **same folder** as the original excel file
   5. **Two warnings** will popup; **click OK** and **Yes** respectively – these are warning letting you know that CSV has limited functionality in Excel

E. This data came from http://www.dmi.illinois.edu/stuenr/#foreign
   1. Navigate to this page in a web browser
   2. Download the original dataset for **Spring 2015**, and open it in Excel.
   3. How has the data been modified? Note the differences between the two files.
   4. To save time, the data is already modified for use in ArcGIS Online.

F. Close all Excel files



Step 5. Add CSV file to the Web Map

A. **Click** the **Add** button and choose **Add Layer from File**
B. On the window, **click Choose File** and **navigate to the exercise data folder**
C. **Select the CSV (*.csv) file created** and **click Open** – Note the tip about drag and drop
D. **Click Import Layer**
E. The **Add CSV Layer** window will appear
   1. Ensure that **Locate feature using:** has **Address** selected – Note that we are not using full addresses, but this technique still works
   2. For the **Country:** box, select **World**
   3. Ensure that for the **Field Name 'Country'** as the corresponding **Location Fields** set to **'Country'** also
   4. **Click Add Layer**
F. What happens? Did you get a warning? If so **Click Ok.**
G. **Click Done** on the **Change Style** pane…we will come back to this in the next exercise.

Step 6. Troubleshoot Data Issues

A. Open the **CSV Layer table** in the **Contents pane** by **clicking the table icon of the CSV layer**
B. Now we must manually search for any country that not found during the geocoding process. To do this, we must compare the table in ArcGIS Online to the original in Excel.
   1. Can you find the missing countries?
   2. How do we make sure the country can be geocoded?
   3. **Edit the CSV file as needed and resave it.**
C. **Remove** the **existing CSV layer**
D. **Add the CSV file again** to ArcGIS Online (see Step 4)
E. **Edit** the location and attributes of **features**
   1. Sometimes features are not placed exactly where they should be or they contain incorrect attribute information
   2. Follow the instructor's demonstration to learn how to edit feature and attribute information

Step 7. Optional: Add a CSV file with latitude and longitude

A. **Open** the **IL_CollegesUniversities_EnrollmentCost.xlsx** file in Microsoft Excel
   1. Review the data – This data was downloaded from the National Center for Education Statistics IPEDS Data Center: http://nces.ed.gov/ipeds/datacenter/Default.aspx
   2. Notice the **address fields and the Latitude and Longitude fields**
   3. Notice that some field have long complicated names
      a. We **don't want to cause an error with the file names**, so to save time…
      b. The **fields have already been fixed** in the worksheet named **IL_CollegesUniversities GIS**
B. Save the **IL_CollegesUniversities GIS** worksheet as a CSV file
C. **Add the CSV file** to ArcGIS Online (see **Step 4**)

Demonstration 1: Web Map Design

Step 1. Rename Layers
Step 2. Change Style/Symbology
Step 3. Configure Pop-ups
A. Custom Attribute display
B. Add a graph
C. Note: Adding pictures
Step 4. Create Labels
Step 5. Save the Feature Layer
Step 6. Save Map

Demonstration 2: Sharing Maps and Creating Apps

Step 1. Sharing maps
Step 2. Embedding in a website
Step 3. Explore web map apps
A. Previewing your map as an app
B. Publish your web map app

Helpful Resources

ArcGIS Online Help: http://doc.arcgis.com/en/arcgis-online/index.html

ArcGIS Online Blog: http://blogs.esri.com/esri/arcgis/category/arcgis-online/

Story Maps: http://storymaps.arcgis.com/en/

Esri Apps for Smartphones and Tablets: http://doc.arcgis.com/en/arcgis-app/

University of Minnesota U-Spatial ArcGIS Online Training: https://uspatial.umn.edu/training

Esri Training: http://www.esri.com/training/main

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