**Getting to know ArcGIS Pro**

In lab this week you are going to complete a tutorial created by ESRI that is designed to introduce people to ArcPro for the first time. For you it will be a refresher from last semester I like this tutorial because not only does it walk you gently through the software, it also demonstrates what a GIS is capable of. You will work with the different forms of data we discussed in lecture. This is also related to the same content and material I covered in lecture.

**Lab Instructions**

Open the Tutorial

* Let’s start by opening the tutorial. <https://learn.arcgis.com/en/projects/get-started-with-arcgis-pro/>
  + Note the name for this tutorial may have changed to ‘Predict Deforestation in the Amazon Rain Forest’
* With that link open, sign in using your enterprise account login.
* At this point you are asked to download the data from the Get Started with ArcGIS Pro Group.
  + Click on the link and attempt to download the data into a folder you created in the C:\ temp folder.
  + Note: If you cannot do this, I have already downloaded the data for you and placed it into the class data folder.
    - T:\AT319\AT319ClassData\GetStartedWithArcPro

Arc Pro

Note: Make your answers in purple. Also label all screen shots as figures and provide a figure caption. Points will be deducted for any images without a figure label and caption.

* After you open the software, follow the tutorial instructions, but also answer the questions below that related to the section in the tutorial
* Section: Find the study area
  + What is a basemap? How might different basemaps relate to different ways of examining the data?
    - A basemap provides reference information such as national boundaries and water bodies. Different referenced information on a custom basemap may be beneficial to different uses of GIS.
  + How might the locate function help in UAS mission planning?
    - You can navigate to a specific area, down to the street and building number
  + What types of data are you working with?
    - GDB extension database files: specifically Singapore’s Rail Lines, Tourist Stations, and Rail Stations
* Section: Add and Symbolize the Roads layer
  + What does it mean to Select by Attributes? How does this relate to the definition of a GIS?
    - They’re basically specific points of interest. GIS, or Geographic Information System, relies on spatial and geographic data, while this attribute feature ties a description to a geographic location. It also enables users to further tag a point of interest.
  + How do attributes relate to symbolization?
    - Symbols are the icons that enable attributes to be seen
  + What type of a dataset is the roads layer?
    - Streets
  + Add a screen shot of your selection.
* Section: Find Deforestation near existing roadsThe buffer tool creates an offset at a specified distance from the input features.
  + What is the buffer tool?
    - A tool that creates an offset at a specified distance from the input feature.
  + How might this tool relate to UAS mission planning, or with the types of data UAS can gather?
    - It might be useful for planning a path that circles a place of interest, and would be advantageous for when using the gimbal
  + How might UAS imagery change the detail of analysis done?
    - Depending on the methods taken for the UAS to capture the image, the procedure can either go quickly or slowly, and depending on the gimbal angle, there can be side-shots from an aerial POV as well.
  + Provide some screen shot images of your buffers.
* Section: Predict the impact of the proposed road.
  + What type of dataset is the Proposed road file?
    - Four geodatabases and one raster dataset
  + When you create Proposed road feature, what type of data are you creating?
    - Rasterized dataset
* Section: Digitize the road
  + When you digitize in the road, are you merely drawing a line on the screen? What makes what you are creating unique? Proposed road feature, what type of data are you creating?
    - No- you’re rasterizing the image and connecting the road together by vertices. You’re creating an attribute.
  + Provide a screen shot of your digitized road
* Section: Finish and Print the map
  + What elements did you add to your layout to turn this image/drawing into a true map?
    - Title and Legend
  + Why is an inset map important? How are these useful for the geographically large-scale (high detail/small) area data sets that are produced by UAS?
    - Shows the geographic location of the area the map is focused on. Useful for reference if an individual does not know where the specific location is.
  + **Place a jpeg of your finished map in this report.**

* **GIS Concepts review questions: Provide critical thought perspectives on each of the questions below. They are meant to refresh concepts learned in the Fall 309 course.**
* *What makes data geospatial? That is, what makes the data you worked with today geospatial in nature (think coordinates)?*
  + *The data is geospatial due to the geographic spatial ties it has. As it has coordinates and is geographic information, the data itself is geospatial.*
* *What makes data in a GIS different than a digital map?*
  + *GIS is geographic information systems. It’s not only a map - it enables geospatial data to be input and leveraged*
* *Why is having an understanding of geospatial concepts and geospatial data so fundamental to working with UAS data?*
  + *UAS data is reliant on an understanding of geography;without a core competency of geography, someone with UASexperience is simply a pilot and not capable of effectively interpreting the information they set out to capture.*
* *What are some of the key geospatial concepts and fundamentals that this lab addresses?*
  + *GIS use, creating a map, interpreting databases and datasets, a high-level understanding of how to use ArcPro (and other systems assumed to be similar).*