# Egeo350 • **Lab-1** • 20 pts

1) What do you do with ***ArcCatalog*** (2 pts)?

Browse, organize, distribute, and document your GIS data
(Pre-)view geographic databases, maps, and metadata

2) What are ***attributes*** (2 pts)?

Tabular data that corresponds to the spatial entities/features.
"Descriptive information associated with geographic features"

For example, attributes of a *river* might include its name, length, and average depth, while attributes for a *city* might include population, total area and the name of the current mayor…

3) According to ESRI, what are the six "fundamental operations" (types of things) that a GIS can perform (do) (1 pt)?

1. Capture Data
2. Store Data
3. Query Data
4. Analyze Data
5. Display Data
6. Present Data (Output)

4) According to ESRI, what are the 4 primary types of spatial relationships (1 pt)?

1. Distance
2. Containment
3. Intersection
4. Adjacency

5) If the location of sample site was stored as an X-Y coordinate pair, how would it appear on a map (1 pt)?

As a point feature (vector data)

6) Desktop ArcGIS includes *ArcMap*, *ArcCatalog* and *ArcToolbox*. What are the three separate software **products** (or **levels**, based on licensing or cost) available for ArcGIS (1 pt)?

1. ArcView
2. ArcEditor
3. ArcInfo

7) Give a brief definition of **metadata** including an example of the sort of thing that might be included in metadata (2 pts).

'Data about data' – documentation about a particular dataset

Details as to the who, how, when & why the data was created

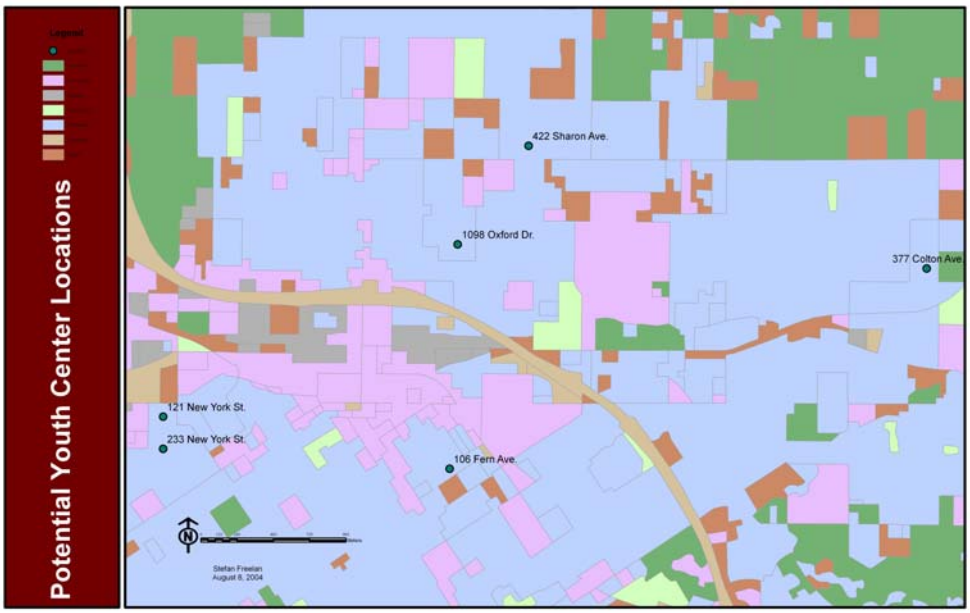
Metadata provides an essential tool for assessing the applicability of a potential dataset for use in a GIS project as well as for actually understanding and using the data.

Examples: Coordinate System, Spatial Extent, Attribute descriptions, contact person for more information about the dataset.

8) Reynolds (see Readings list), states that the algorithms and storage techniques that a GIS uses are usually analogous to human thought. If this is so, how are GIS an improvement over human-powered spatial analysis (according to Reynolds) (2 pts)?

*The GIS can perform operations that would take humans a long time to do, and that would be error prone – in other words, the GIS is faster and more accurate than humans.*

9) Print and hand in your map from the 3rd Exercise of Module 1 (*Potential Youth Center Locations*). Black and White is fine. Put your W-3 number on the map (you can write it on the page by hand) and *attach it* to the print out of this lab. Maps not attached by a staple (or at least a paper clip or scotch tape) ***will not be credited*** (2 pts).



Open a new ArcMap map document (if ArcMap is already open you can use the *New Map File* icon, or *File* | *New*). Click the *Add Data* icon (or choose *File* | *Add Data*) and browse to the **C:\GISdata\BHAM** folder (note, since you don't need to edit these files you do not need to copy them to **C:\temp**, though you can if you wish). Add the following layers:

**BHstreets**
**Pipeline**
**Schools**
**Streams**

10) What type of file (point, line or polygon) is the *Schools* layer (1 pt)?

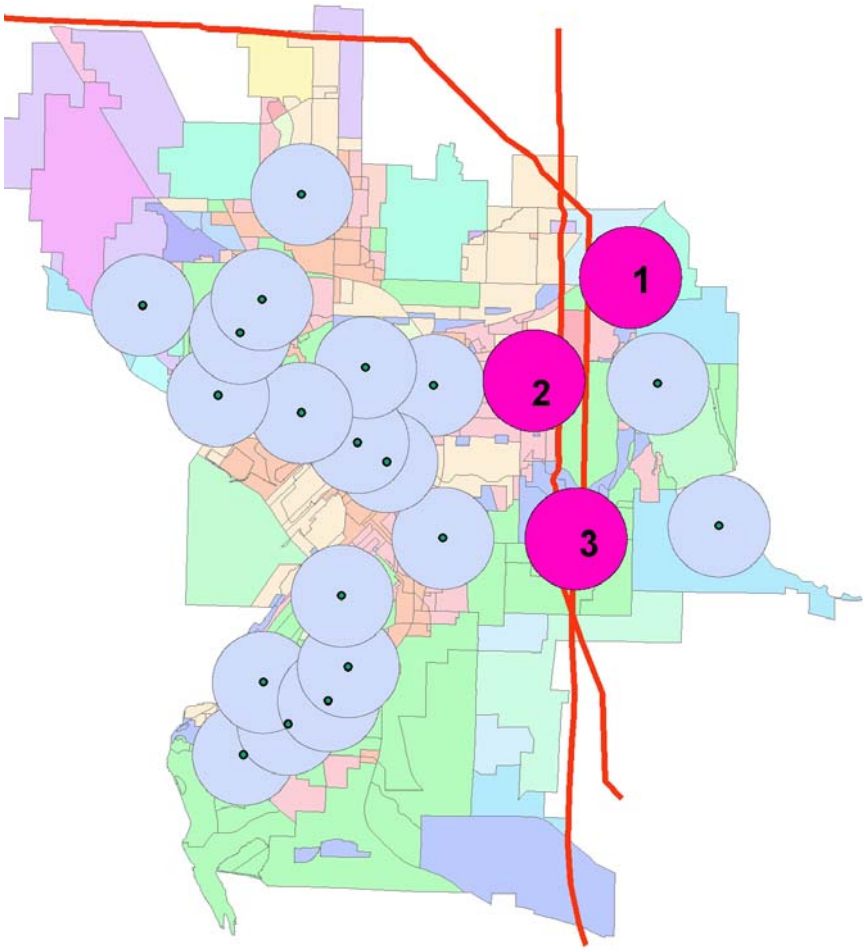
Point

11) What type of file (point, line or polygon) is the *Streams* layer (1 pt)?

Line

12) Using the Buffer tool (from ArcToolbox):

Create a ½ mile buffer around the features of the **SCHOOLS** layer
For the *Input Features*. Browse to or select **SCHOOLS**
For the *Output Feature Class*, browse to and/or enter:
**C:\temp\Lab1\SCHOOLS_Buffer.shp**
(or whatever your Working folder name is)
Make sure Linear Unit is checked and enter **.5** for the distance
Change the units type box to **Miles**
Accept the other default settings and click ***OK***
Turn your **SCHOOLS_Buffer** layer on (change the color if you like)
Make sure your **SCHOOLS** layer is above your **PIPELINE** layer and your **PIPELINE** layer is above your **SCHOOLS_BUFFER** layer so that all of the relevant data are visible on your map
Save this map project as ***Lab1.mxd*** in your **C:\temp\Lab1** folder
**Print this 'map'** (*Zoom/Pan* as needed & choose *Print* from the *File* menu)
Don't worry about a north arrow, etc, just a print of your Data View
Add your W-number to this map print out by hand
***Attach*** this Black & White map print with this lab to **hand in** (2 pts)




**15)** Using your buffered School data (from above): Use the pan and/or zoom tools to determine (visually) how many schools are within .5 miles of a Pipeline (2 pts)?

There are 3 schools that are within .5 miles of a Pipeline