

Assignment - Basic Queries

Assignment 5 - Basic Queries

Format: Text or PDF document. Place on Student Work Zone section of the wiki.

The purpose of this assignment is for you to learn and practice some of the basic queries you can perform with GIS.

In this assignment, you need to perform an analysis in which you use all of the following, in any order or in combination - there are tip sheets for each of these functions on our [Tufts GIS Tips and Tutorials](#)

- Select by attribute (see the tip sheet for [Using the Selection Tools](#))
- Select by location (same as above)
- View statistics for selected features (see the tip sheet for [Viewing Statistics and Summarizing Data](#))
- Summarize by an attribute field value (same as above)
- Field Calculator *OR* Geometry Calculator (see the tip sheet for [Adding a Field to a Table and using the Field Calculator](#) or for [Calculating Area, Perimeter, and Length](#))

For example, you could use these tools to analyze parcels in Somerville which meet certain conditions for redevelopment based on their attributes and their location relative to other features. Or using MassGIS data you might look for potential land acquisition areas based on criteria you define. Or you may want to look at what sections of a community may be most vulnerable to a natural or man-made disaster based on census demographics, living/working in hazardous areas, and distance from emergency response facilities and evacuation routes.

It would be ideal to do this assignment as a mini-test of a project idea or at least using data you are likely to use in your project. If more applicable, use data we have in-house or that you can download online. But keep it VERY SIMPLE for this assignment! If you have trouble thinking of something, talk to the instructor or TA - we are brimming with ideas.

What to turn in:

Turn in a brief report that includes the following:

- The goal of your analysis
- The steps you went through (i.e., the queries you performed, in order) - you may use graphics to show your steps in place of, or in addition to, text
- A map or maps that show the results along with summary table(s) you create. The maps do **not** have to be formal finished maps as in earlier assignments. You can use Snag-it for both the maps and the summary table if you like and simply paste them into your document.
- A note on why the results of your analysis are or might be incorrect (e.g., a caveat to someone reading or wanting to use these results) - you will definitely see problems as you do the analysis, many of which you can't correct because they are inherent to the data sources, so just say what you think is wrong.

Tips for the assignment

You can use Snag-It to "snag" graphics of your map or maps and put them in your write up with an explanation of what they are showing - you don't need to do a full-blown stand-alone map of the same quality as earlier assignments. Same with tables showing the results of summarizing, or showing statistics - just use Snag-It or the Print Screen function on your computer (press CTRL and PRNT SCR on the same time, then paste into a Word document).

If the selection tools aren't working as they should

1. make sure you are using the correct method - e.g., select new set, or select from currently selected set
2. Click on the redraw icon at the bottom of the screen - we are seeing that sometimes the new selection set doesn't appear until you redraw
3. Try shutting down ArcMap and restarting with a new map file and only loading the layers from which you are selecting. ArcGIS seems to sometimes just get tired or to run out of memory or something, especially if you have a lot of layers up. Start fresh with just the layers you need for the assignment and it should work.

The biggest problem students have with this assignment is using the **Summarize** function. You can only use the *Summarize* function on a category value, e.g., type of land use, openspace owner type, openspace public access (yes, no, etc.). You will then summarize *numeric* information by this type (e.g., acres of open space that are publicly accessible, or acres of open space by owner type). **Do NOT summarize on a numeric field!**

The second biggest problem students have is making this assignment **too complicated**. Keep it simple - it's simply a way for you to get familiar with these basic tools.

E-mail the instructor and TA if you have problems!