

Cookbook 9 October 2013 *GIS Analysis (Part 6)*

Overview

1. Tuition @ WSU
2. Proximity Analysis
3. Homework Assignment #3

Tuition and Fees: 2013-2014 Academic Year	
Application Fee for Massachusetts residents	\$50.00
Application fee for out-of-state residents	\$50.00
Tuition Deposit	\$150.00
Residence Hall Deposit - new student	\$150.00
Residence Hall Deposit - returning student	\$200.00
Yearly costs:	
Tuition for Massachusetts residents	\$970.00
Tuition for out-of-state residents	\$7050.00
Tuition under proximity clause of New England Regional Program	\$1455.00
Mandatory fees	\$7724.00
Nursing Fee - (Nursing Students Only)	\$1000.00
Residence Hall	\$5620.00 - \$8320.00
Food (19 meals per week)	\$3563.00
Food (14 meals per week)	\$3478.00
Food (10 meals per week)	\$3394.00
Food (5 meals per week) - Commuters & Apartment Residents Only	\$1288.00

1) Tuition @ WSU

Proximity-Based Tuition

In New England, students qualify for a tuition break when they attend an out-of-state college is closer to their home than the in-state college offering the same program.

See <http://www.nebhe.org/programs-overview/rsp-tuition-break/eligibilityfaqs/> or http://www.nebhe.org/wp-content/uploads/2013-14_RSP_TuitionBreak_Policies.pdf for background information and details.

For us, the question is simple: which cities and towns in Connecticut are *closer* to Westfield State than to any of the Connecticut State University or University of Connecticut campuses?

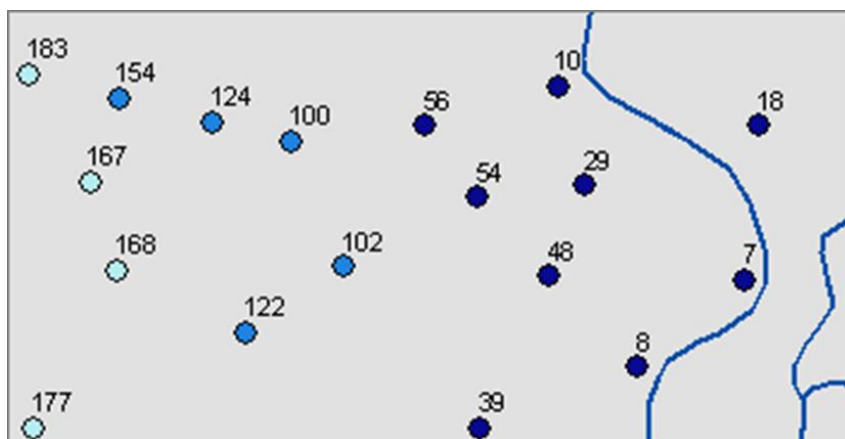
This is a perfect example of a proximity analysis and perfect application for map!

2) Proximity Analysis

= *how far is something from something?*

- How close is this well to a landfill?
- Do any roads pass within 1,000 meters of a stream?
- What is the distance between two locations?
- What is the nearest or farthest feature from something?
- What is the distance between each feature in a layer and the features in another layer?
- What is the shortest street network route from some location to another?

More at <http://resources.arcgis.com/en/help/main/10.1/index.html#//018p00000007000000>



Above is an example showing points near river features. The points are symbolized using graduated colors based on distance to a river, and they're labeled with the distance.

2.1) The Proximity Toolset in ArcGIS

These tools can be used for proximity analysis using features (i.e. vectors):

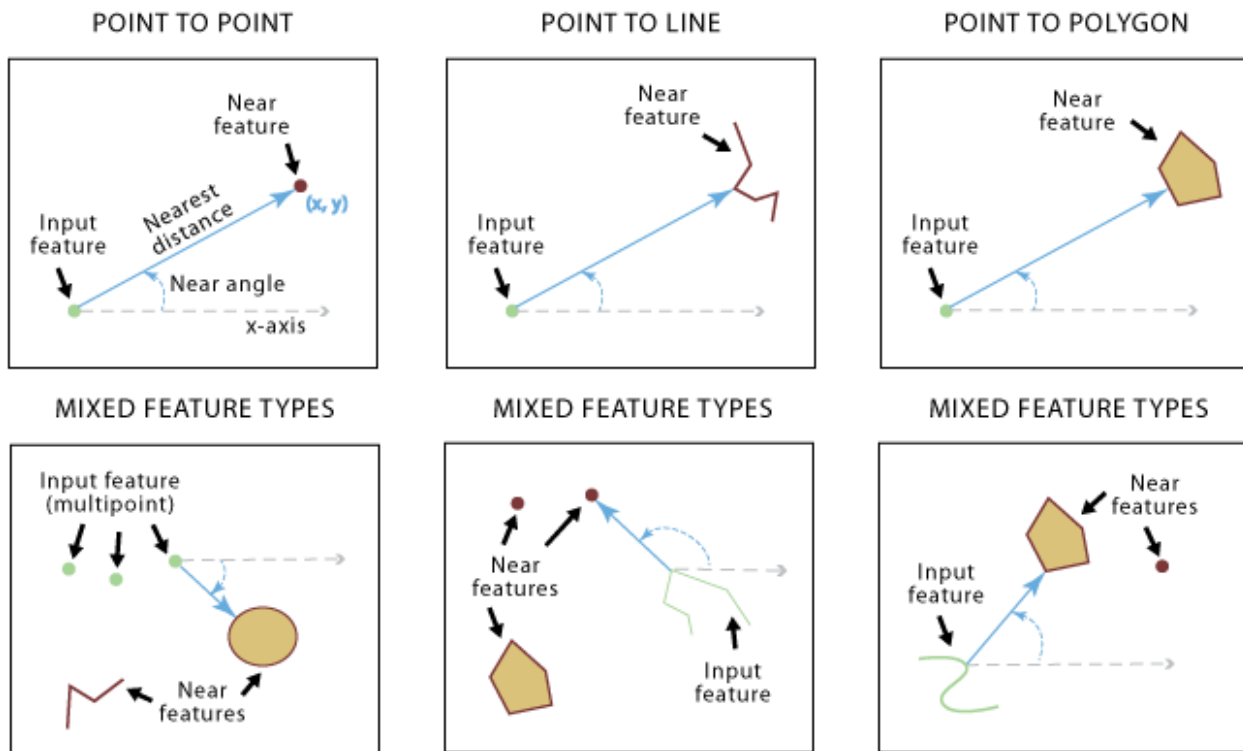
<http://resources.arcgis.com/en/help/main/10.1/index.html#//000800000018000000>

- Buffer
- Create Thiessen Polygons
- Multiple Ring Buffer
- Generate Near Table
- Near
- Point Distance

2.2) The Near Tool

This tool determines the distance from each feature in the input features to the nearest feature in the near features, within the search radius.

<http://resources.arcgis.com/en/help/main/10.1/index.html#/Near/00080000001q000000/>

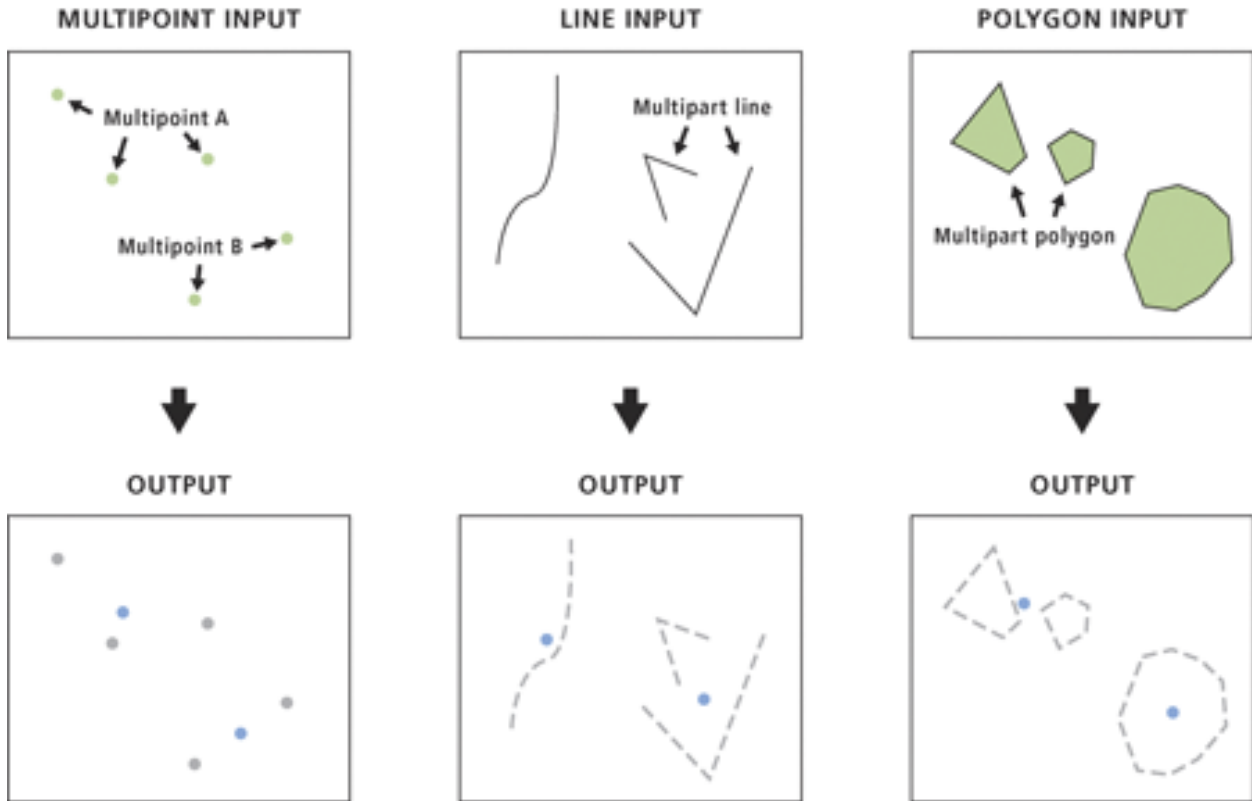


2.3) Feature To Point Tool

This tool creates a feature class containing points generated from the representative locations of input features.

For an input polygon feature: the output point will be located at the center of gravity (centroid) of the polygon.

<http://resources.arcgis.com/en/help/main/10.1/index.html#//00170000003m000000>



3) Homework Assignment #3

Let's get ready for raster data!

Part 1: Watch This!

Visualizing and Analyzing Imagery with ArcGIS 10 (1 hour)

This free online seminar demonstrates how to dynamically process, analyze, and classify images and digital elevation models. The main focus is on image processing and analysis.

<http://training.esri.com/gateway/index.cfm?fa=catalog.webCourseDetail&courseid=1949>

Part 2: Read This!

What is raster data?

http://resources.arcgis.com/en/help/main/10.1/index.html#/What_is_raster_data/009t00000002000000/

A quick tour of displaying image and raster data in ArcMap

http://resources.arcgis.com/en/help/main/10.1/index.html#/A_quick_tour_of_displaying_image_and_raster_data_in_ArcMap/009t00000208000000/

Essential raster data vocabulary

http://resources.arcgis.com/en/help/main/10.1/index.html#/Essential_raster_data_vocabulary/009t00000003000000/

How features are represented in a raster

http://resources.arcgis.com/en/help/main/10.1/index.html#/How_features_are_represented_in_a_raster/009t00000006000000/

Discrete and continuous data

http://resources.arcgis.com/en/help/main/10.1/index.html#/Discrete_and_continuous_data/009t00000007000000/

Raster dataset attribute tables

http://resources.arcgis.com/en/help/main/10.1/index.html#/Raster_dataset_attribute_tables/009t00000009000000/

Deliverables

Question 1: After watching the free Esri Training: what are the 3 most useful things you learned and what are the three things you already knew about raster data and images in ArcGIS?

Question 2: Okay – *in plain language* – what are the differences between discrete and continuous data?

Question 3: Okay – *in plain language* – how are features represented in a raster?

Question 4: Okay – *in plain language* – how is a raster attribute table different from a vector attribute table?

I would expect about half a page per question for a total of about 2 pages.

Please submit professional report using proper English language and professional formatting and layout. Think in terms of using it as a sample of your work for a job interview. Please include a cover page and page numbers in the page footer of all pages.

- Due Date: Tuesday 15 October 2013 at the beginning of class.

➔ ***Contact me for help or clarification of this assignment or my expectations as needed.***