Test 3 Applied Portion

Due: Nov 16 by 3:30pm to Sakai

For the applied portion of Test 3, you will explore fire incidents responded to by Chapel Hill Fire Department from 2011-2016 in relation to the location of fire departments. You will submit a one .png map to Sakai. You will also submit a word document or PDF with answers to the following questions.

Directions:

1. Using two different geoprocessing techniques, identify how many fire incidents were within one mile, within two miles, or greater than two miles away from fire department locations.
2. Using a third geoprocessing technique, identify how many fire incidents were greater than one mile but less than two miles away from fire department locations. You must use a geoprocessing technique for this, not just map symbology.

Map Requirements:

1. You must add fire department locations to the map using an appropriate symbology.
2. You must add all fire incidents to the map using three different colors—one color for all incidents within one mile, one color for all incidents greater than one mile away but less than two miles away, and one color for all incidents greater than two miles away.
3. You must use a basemap and add appropriate map features (title, name, legend, north arrow). Your legend should not have default layer names.

Questions to Answer:

1. Name the three different geoprocessing tools that you utilized, and why you selected those three.

The geoprocessing tools I utilized was buffer, intersection, dissolve, and union. I selected these tools in order to first identify the location surrounding the fire stations, both 1 and 2 miles away. This was achieved by using a buffer around each of the fire stations. I then used the dissolve tool to create a combined area for each zone. This was done to ensure that the individual fires would not be double counted for zones that overlapped. Once as this was achieved I used the intersection tool with the dissolved mile zones to get points that were within each of the mile zones. The final tool I used was the union tool to combine the 1 and 2 mile zones. This was to isolate the fires outside of the 2 mile zone. I used the intersection tool again to get the final points outside of 2 miles from a fire station.

1. How many fire incidents were located less than one mile away fire department locations?

7562 fires

1. How many fire incidents were located less than two miles away from fire department locations?

11657 fires

1. How many fire incidents were located greater than one mile away from current fire department locations, but less than two miles away?

4095 fires

1. How many fire incidents were located greater than two miles away?

522 fires