Assignment 6: Mapping GPS Points with QGIS and Adding Attribute Data

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1. Intro-fossgis-umass

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1.2. Module Licensing Information

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2. Assignment: Mapping GPS points with QGIS and adding attribute data

2.1. Assignment

This assignment focuses on the integration of information from a GPS machine with QGIS. You will create a delimited text file with coordinates given to you that you will overlay on a USGS Topographic Quad map of part of the City of Boston Massachusetts. You will leave one column blank for information to be filled in later. If you have entered the coordinates correctly, the map on which you overlay the points will reveal to you what to enter in the remaining blank columns in the attribute table.

2.2. To be handed in

- A screenshot or saved image of your completed map in QGIS

- The delimited text file that you created with all of the columns filled in.

Introduction

For this assignment, we will provide you with coordinates for the points, and the topographic map image. Pretend that you are touring the city of Boston for the first time. You are walking around the city, and you want to note important or interesting locations, to distribute to someone else later. You have collected your points, but were not able input the location name associated with the point onto your GPS machine at the time. So you have a series of points around the city of Boston, but no way of knowing what locations they represent.

What you will do in this assignment is create your GPS point layer in a text file, leaving a column blank for the location that point indicates. Then you will overlay this onto a topographic map of the city of Boston, and read the map to see what important location your point references. Finally, you will input this location name derived from the map into the attribute table of your point layer.

Getting Started

Here are the points that you have obtained with your GPS machine. Note that they are in UTM coordinates (zone 18), but the map you will use is in State Plane (NAD 27/Massachusetts Mainland). Northing is listed first, then easting:

- 1.)4696586.329, 824000.131

- 2.)4697321.827, 824636.503

- 3.)4696094.567, 823254.414

- 4.)4696135.565, 824119.786

- 5.)4694915.531, 821794.095

- 6.)4695615.868, 821836.151

You'll also need a USGS topographic map of Boston. To save time, we've provided the particular one for you to download [here [http://linuxlab.sbs.umass.edu/introFossgisUmass/datasets/boston_topo.zip]] (it's number q237898), but you could get it off of MassGIS [http://www.mass.gov/mgis/] as well.

You'll need the two conversion websites. Here is the first that will convert from UTM to Geographic coordinates:

http://jeeep.com/details/coord/

And here's the next site that will convert Geographic Coordinates to the state plane system:

http://www.ngs.noaa.gov/cgi-bin/spc_getpc.prl

What to do

- Convert the points--use the two websites to figure out the conversions of the points from UTM to State Plane system.

- Create a text file--create a file with three columns: "x", "y", and "location". Fill in the coordinates for x and y, but leave location blank, as you'll be filling it in when you look at the map.

- Load the topo map--be sure to set the projection information (NAD83/Massachusetts Mainland)

- Import the point layer using the "Add delimited text" plugin, then save the imported layer as a shapefile, load that shapefile, and remove the text point layer.

- Look at where the points are on the map, and use the text on the scanned map to identify what locations the points are referencing. Make a note of each of these.

- Edit the attribute table of the shape file and input the location names for each point. Do the same in the text file (use a text editor such as notepad).

- Turn on "labelling" and save your map as an image to turn in, along with the text file with coordinates and location names.

All of this material was taught in the previous exercise, so if you get stuck, just take a look at that exercise for guidance:

[Mapping GPS points exercise [http://linuxlab.sbs.umass.edu/beginning-fossgis-umass/index.php?title=Mapping_GPS_points_with_QGIS_and_adding_attribute_data

Good luck!

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