

July 14, 2021

Module 9 Independent Exercise

The TOL_CT.shp shapefile in the NRE5585/Data directory comes from the National Geodetic Survey. Please open the shapefile in arcpro and have a look at it. It contains all the survey markers in Tolland county, Connecticut.

Looking at the attribute table reveals a lot of columns, including these, which we use to create our Station objects.

Name in shp	Our name	What it's for
DEC_LAT	Latitude in DD	Create Latitude objects
DEC_LONG	Longitude in DD	Create Longitude objects
PID	PID	PID field for Station objects
NAME	Designation	Designation field for Station objects
POS_DATUM	Coordinate system name, part 1	nm is the concatenation of POS_DATUM and DATUM_TAG
DATUM_TAG	Coordinate system name, part 2	
ELLIP_HT	Ellipsoid height (meters)	<i>h</i> coordinate for lon/lat/h

Using the subtraction operator for our objects, answer these questions.

1. Which is the south-most, north-most, east-most, and west-most? Print the stations and indicate which is which.
2. In terms of geodetic distance, which stations are closest? Don't consider stations with zero distance, such as distance from a station to itself, or a reset marker with identical coordinates to an older marker. Print the stations and the distance.
3. In terms of geodetic distance, which stations are furthest apart? Print the station pairs and the distance.