Procedure Log for Assignment 6 – Database Cardinality Issues in ArcGIS

Problem: NC Senators and Representatives have requested the exact number of NC jobs created in their district based on the results of a recent industrial extensions jobs survey.

Procedure Log:

Data: Survey data provided by GIS 520. NC House districts, Senate districts, and zip code information provided by NCSU Libraries GIS Data Services.

NC_Job_creation_Survey_Results.xls: jobs survey results (tabular)
house.shp: NC House of Representatives districts (polygon)
senate.shp: NC Senate districts (polygon)
zip_usa.sdc: US zip codes (points)

Projection: The House and Senate district shapefiles are projected in NAD 1983 StatePlane North Carolina FIPS 3200 (meters). The zip code feature class is projected in GCS WGS 1984.

Limit zip code data to NC only.
Layer: zip_usa
Select by attributes
Method: Create a new selection
Expression: "STATE" = 'NC'
Data > Export Data > Export: Selected features, Use the same coordinate system as: the data frame
Output feature class/Result: zip_nc.shp

Summarize number of new NC jobs by zip code.
Table: Survey ReusltsAllCompaniesRepli$
Field: ZIP_Text
Summarize: EMPLOY_SUM > Sum
Specify output table: Sum_EmployZip

Join tabular and NC zip code data.
Target Layer: zip_nc
Joins and Relates > Join > Join attributes from a table

1. Choose the field in this layer that the join will be based on: ZIP
2. Choose the table to join to this layer, or load the table from disk: Sum_EmployZip
3. Choose the field in the table to base the join on: ZIP_Text

Join Options: Keep only matching records
Result: 1150 new jobs matched to zip codes (1188 total new jobs, 38 out of state)

Limit data points to those with > 0 new jobs.
Layer: zip_nc
Select by attributes

Method: Create a new selection
Expression: "Sum_EmployZip.Sum_EMPLOY" > 0
Data > Export Data > Export: Selected features, Use the same coordinate system as: the data frame
Output feature class/Result: zip_nc_newjobs.shp

Spatially join zip code points to senate polygons.
Target layer: senate
Joins and Relates > Join > Join data from another layer based on spatial location

1. Choose the layer to join to this layer, or load spatial data from disk: zip_nc_newjobs
2. You are joining: Points to Polygons
   Each polygon will be given a summary … Sum

Output shapefile: Senate_Jobs.shp

Spatially join zip code points to house polygons.
Target layer: house
Joins and Relates > Join > Join data from another layer based on spatial location

1. Choose the layer to join to this layer, or load spatial data from disk: zip_nc_newjobs
2. You are joining: Points to Polygons
   Each polygon will be given a summary … Sum

Output shapefile: House_Jobs.shp