Creating an Intersection Tool with ArcObjects

By Robert Chappell

Objectives

- Create a program to analyze intersections of one (or two) line layers.
- Create a point layer for these intersections and display it on the map.
- Design the interface.

Code by Outside Sources

- AddPointsatCrossings code by Michele Lundeen (ArcScripts)
- Create New Shapefile by ESRI

Initialization

- Adds existing map layers to the list boxes on the form.
- Interfaces include IEnumLayer, IMxDocument, and IFeatureLayer.
- AddItem is used with EnumLayer to add layers to the list boxes.
- Verify the layers are line or polyline.

Location and Creation of the Output Layer

- GxDialog .DoModalSave for selecting the location of the new file.
- Use IFeatureWorkspace and IWorkspaceFactory. Set the new workspace path to the location of the new file using PGxDataFile.Path.
- Create the new shapefile as a point layer.

Generation of Intersection Points

- Interfaces used include IApplication, IMxDocument, IFeatureCursor, IFeatureClass, IFeatureLayer, and ICommandItem
- Set layer variables to refer to the selected layers from the listbox in the initialization subroutine.

The Process

- Set layers to the selected listbox layers.
- Open Editor and start editing using Arcid.
- Set the feature cursor to store each feature in both line layers.
- Spatial filter for finding any crossing lines.
- Get all of the points found and open the created point .shapefile using the outputpath global variable and workspacefactory.
- In a loop step through each feature in the points found (pGeoCol) and add them to the new shapefile. Then save the feature to the shapefile.
- Add the new point layer to the map, stop editing (Arcid), save edits(Arcid), refreshmap, and unload the form.

The Challenges

- Trying to decide on list boxes or combo boxes.
- Getting the GxDialog and Create Shapefile functions to operate in sync.
- Getting the intersect function to open and save to the new shapefile.

Potential Uses

- Author describes the tool as being useful for finding crossing points of gas and water lines.
- Finding intersections of one way streets and arterials (select by attribute) for potential high collision areas.

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