GEO-PROCESSING

The fundamental purpose of geo-processing is to provide tools and a framework for performing analysis and managing your geographic data.

Geo-processing provides a large suite of tools for performing GIS tasks that range from simple buffers and polygon overlays to complex regression analysis and image classification. The kinds of tasks to be automated can be mundane - for example, to wrangle herds of data from one format to another. Or the tasks can be quite creative, using a sequence of operations to model and analyze complex spatial relationships—for example, calculating optimum paths through a transportation network, predicting the path of wildfire, analyzing and finding patterns in crime locations, predicting which areas are prone to landslides, or predicting flooding effects of a storm event.

Geo-processing is based on a framework of data transformation. A typical geo-processing tool performs an operation on an ArcGIS dataset (such as a feature class, raster, or table) and produces a new dataset as the result of the tool. Each geo-processing tool performs a small yet essential operation on geographic data.

Geo-processing allows you to chain together sequences of tools, feeding the output of one tool into another. You can use this ability to compose an infinite number of geo-processing models (tool sequences) that help you automate your work and solve complex problems. You can share your work with others by packaging your workflow into an easily shared geo-processing package. You can also create web services from your geo-processing workflows.