




ArcGIS Desktop Tutorial

ArcGIS Desktop version 9.2 ArcInfo™ functional level (includes ArcView® and ArcEditor™ functionality) tutorial.

This tutorial was designed for ArcGIS Desktop version 9.2 ArcInfo™ Functional Level (includes ArcView® and ArcEditor™ functionality). It has adapted some of the concepts present within ESRI's *Getting to Know ArcGIS Desktop* book in order to allow a user to quickly get started with ArcGIS™ applications without actually having to go through the ESRI tutorial exercises. Instead, this tutorial is designed to help the user bring in their own spatial data of interest and manipulate it in a variety of ways. There are six sections that describe some of the common operations a user may need to know in order to manipulate and/or analyze their spatial datasets.

The tutorial was created by Stephan Pollard, M.A. Geography (University of Arkansas, 1997) and Ph.D.. Environmental Dynamics (University of Arkansas, 2006) and Sohayla Hamon, M.A. Geography (University of Arkansas, 2002).

New! For ease of consultation and printing, tutorial sections are now in PDF format. 

The following describes the content of each section contained within this introductory ArcGIS tutorial:

Section 1: Getting Started with ArcGIS: ArcCatalog, ArcMap, and ArcToolbox

- ArcGIS Applications Description:
 - Gives a brief description of the common uses and functions that each ArcGIS application (ArcCatalog™, ArcMap, and ArcToolbox™) has to offer.
- Data Retrieval:
 - Describes some of the sources of spatial data along with some of the types of spatial data that can be found. The Geospatial Data and Attributes webpage should be further consulted if the user wishes to acquire links to United States and international data resources (free, governmental, and proprietary).
- ArcGIS Supported Data Formats:
 - Describes the data formats that may be used within any of the ArcGIS applications. Some data types may be automatically brought in, and others may need to be brought in using an import utility. Explains how to open data.
- Viewing Data in ArcCatalog:
 - Familiarizes the user to the ArcCatalog interface. Explains how to open data within the ArcCatalog application and view the data in spatial and/or tabular format.
- Viewing Data in ArcMap:
 - Familiarizes the user to the ArcMap interface. Explains the various ways in which a user can open and view their spatial data set. Describes the concept of overlaying spatial data sets with the same coordinate system information, and the process of arranging a data set so that it can be made visible. It also describes what is contained within a data set's attribute table, and the many ways in which the user may view and/or manipulate the attribute layer's contents.

- Using ArcToolbox:
 - Describes the ArcToolbox interface and the variety of tools available to the user.

Section 2: Manipulating Display Parameters in ArcMap

- Symbolizing Features and Rasters:
 - Describes how the user may quickly change a feature's or a raster's symbology. In more detail, it describes how to change a feature's symbology using categorical attributes.
- Classifying Features and Rasters:
 - Describes the process of classifying features and rasters using one of the four scaled symbology methods: Graduated Color, Graduated Symbol, Proportional Symbol, and Dot Density.
- Labeling Features:
 - Describes the two main types of labels (dynamic and interactive) and how each can be created and manipulated.

Section 3: Querying Data in ArcMap

- Identifying, Selecting, and Finding Features:
 - Describes how to quickly retrieve information about features through the processes of identifying, selecting, and/or finding.
- Selecting Features by Attributes:
 - Describes how to perform an attribute query that will automatically select features within the map display that meet specified criteria.
- Selecting Features by Location:
 - Describes how to perform queries that will select features within the map display that meet a particular location and/or spatial relationship requirement.
- Creating ArcMap Layers from Selected Features:
 - Describes how to create a layer that contains only features that have been selected by one of the many selection methods.

Section 4: Preparing Data for Analysis

- Selecting Features:
 - Describes the steps taken to clip multiple features from a data layer using the features of another data layer, using ArcToolbox.
- Clipping Features:
 - Describes the steps taken to clip features within one layer based on the features within another, using ArcToolbox.
- Dissolving Features:
 - Describes the steps taken to dissolve multiple features within a data set into one feature, using ArcToolbox.
- Exporting Data:
 - Describes a way in which the user can create a NEW DATASET that contains ONLY selected features within an existing data set.
- Projecting Data for Display in ArcMap:
 - Describes the necessity of changing data layer's coordinate system information (if they will be used within the same GIS) so that they match each other. It describes what ArcMap does by default if they do not match.
- Projecting and Defining the Coordinate System or Spatial Reference:
 - Describes the process of ACTUALLY creating a new data layer of identical features but with a different coordinate system. ArcToolbox is used to describe this process.

Section 5: Analyzing Spatial Data

- Buffering Features:
 - Describes how to create a distance buffer using the Buffer Wizard in ArcMap.
- Overlaying Features:
 - Describes the concept of GIS overlay operations. Explains how to perform a union overlay as well as an intersect overlay, using ArcMap's GeoProcessing Wizard.

- Calculating Attribute Values:
 - Explains how new values may be created within a layer's attribute table, and gives examples as to why this operation may be useful.

Section 6: Making and Printing Maps Using ArcMap

- Using a Map Template to Create a Map:
 - Explains what map templates are, how they can be used, and what types of templates are available. Describes the process of adding all map elements to a map template.
- Creating Maps Without Using a Map Template:
 - Describes the process of creating a map without using a map template. Explains how to add map data, a map title, a north arrow, a scale bar, and a legend to the map layout and manipulate their properties.
- Selecting Print Options:
 - Describes how to select the appropriate parameters in order to print the size and shape map preferred.

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