

Building Geodatabases

Three days

Overview

This course provides an overview of the structure and capabilities of the geodatabase. Students learn how to create a geodatabase, migrate existing GIS data to a geodatabase, and edit and maintain data stored in a geodatabase. The course covers some advanced geodatabase topics including how to build a geodatabase topology; maintain data integrity using subtypes, attribute domains, and relationship classes; and create a geodatabase schema. In course exercises, students work with the file geodatabase and learn how to migrate personal geodatabase data to a file geodatabase and create various geodatabase components.

Audience

This course is designed for experienced ArcGIS users who want to store data in a geodatabase and take advantage of advanced geodatabase functionality. Data managers will find this course of particular benefit. Those who will be working with a multiuser geodatabase may also wish to enroll in Introduction to the Multiuser Geodatabase, which pairs well with this course.

Prerequisites and recommendations

Students should have completed ArcGIS Desktop II: Tools and Functionality or Learning ArcGIS Desktop or have equivalent knowledge.

Goals

- Understand the geodatabase structure.
- Explain advantages of a file geodatabase.
- Understand advantages of geodatabase validation rules.
- Load vector and raster data into a geodatabase.
- Create and apply attribute domains, subtypes, and relationship classes.
- Edit data using attribute domains, subtypes, and relationship classes.
- Create and edit geodatabase annotation.
- Create geodatabase topology and apply topology rules.
- Edit topological data.
- Perform geometric network editing and tracing.

Topics covered

Introduction to the geodatabase: Advantages of the geodatabase; Focusing on the file geodatabase; Overview of elements within the geodatabase; Geodatabase tables in a database management system (DBMS).

Attribute validation rules: Subtypes and domains; Creating subtypes; Editing subtypes in ArcMap; Creating domains; Editing with domains in ArcMap; Coded value vs. range domains; Subtypes and relationship rules.

Relationship classes: Creating relationship classes; Setting relationship class properties; Using relationships in ArcMap; Relationship rules; Validation; Simple vs. composite relationships.

Annotation: Creating, editing, and managing annotation features in the geodatabase.

Geodatabase topology: Topology management in the geodatabase; Building a topology; Setting the properties of a topology; Setting appropriate topological rules; Fixing topological errors; Editing topological data.

Geometric networks: Creating and editing geometric networks; Performing analysis; Setting and using connectivity rules.

Building geodatabase schema: Different ways to define geodatabase schema; Creating tables, feature classes, and feature datasets.

XML data interchange: Understanding XML schemas of the geodatabase; Exporting the contents of a geodatabase to XML; Importing an XML file into a geodatabase to define its schema.

Vector data in the geodatabase: Loading data from shapefiles, CAD files, coverages, and Excel spreadsheets; Using ArcGIS vector data loading tools.

Raster data in the geodatabase: Storing raster datasets, raster catalogs, and raster attributes in the geodatabase.