

Geodatabase Design Basics

Topic Overview

Creating Geodatabases

- Three Primary Ways to Create
 - Design, create a new, empty geodatabase
 - Define the schema and load datasets into it
 - Copy and modify an existing geodatabase schema
 - Load datasets into the copied geodatabase
 - Create and copy both schema and contents from existing geodatabase

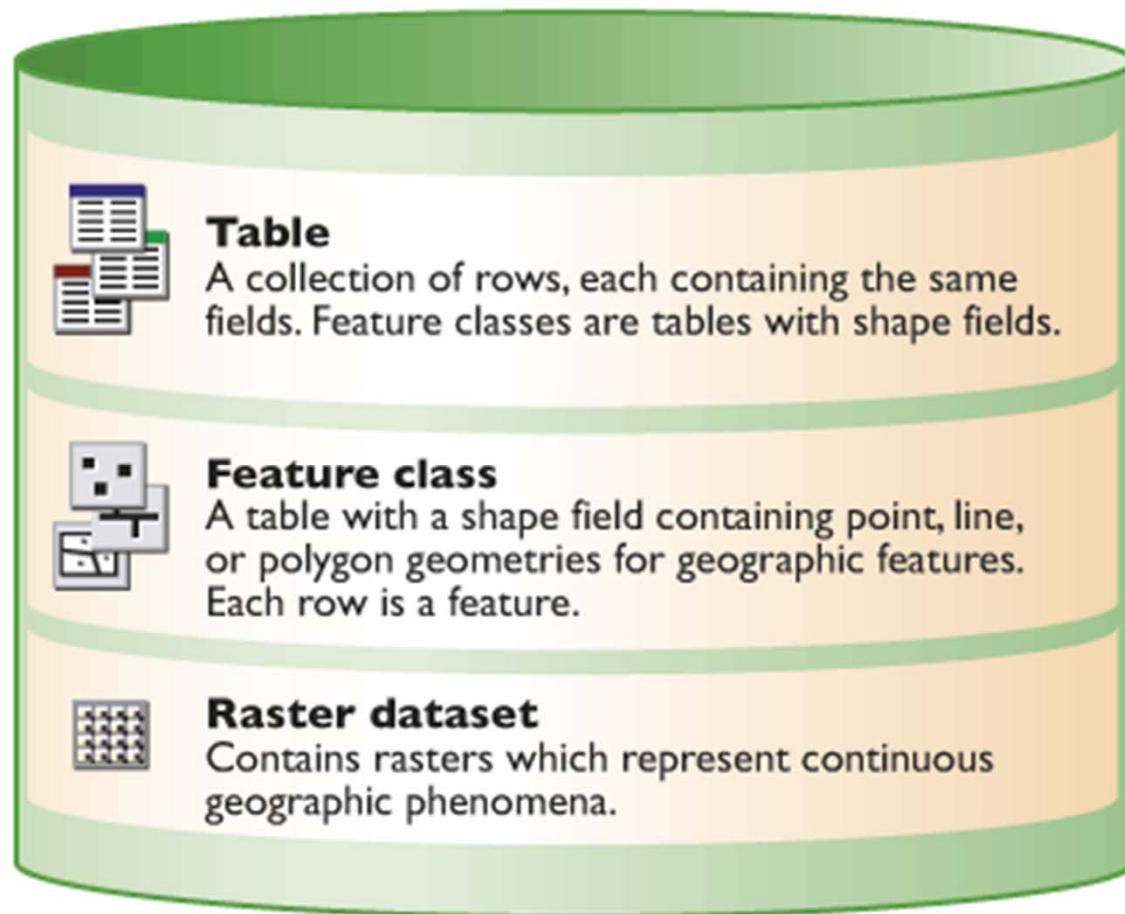
Types of Geodatabases

- File geodatabase
 - *good selection for default choice*
- Personal geodatabase
 - Stores in Microsoft Access format, note limitations
- ArcSDE geodatabase
 - Database Management System (DBMS) for relational database. Options include:
 - IBM DB2, IBM Informix, MS SQL Server, Oracle, PostgreSQL

Fundamental Datasets

- Dataset is the mechanism to organize and use geographic information in ArcGIS
- Three primary dataset types:
 - Feature classes
 - Raster datasets
 - Tables
- More advanced capabilities can extend these base types
 - topologies, networks, subtypes

Geodatabase Elements



How Data Converts on Import

- ArcGIS automatically converts data from original format to one used by the geodatabase
- Be aware of how the data converts so you know where to make checks and evaluate results
- ARC-INFO Coverage, Shapefiles, dBASE, CAD

dBASE – tabular datasets

Each shapefile and dBASE field type converts to a single geodatabase field type, except for the Number type field. The following table summarizes how shapefile and dBASE field types convert.

Field type	Field width	Geodatabase field type
Date	NA	Date
String	1-255	Text
Boolean	NA	Short integer
Number	1-4 (decimals=0)	Short integer
Number	5-9 (decimals=0)	Long integer
Number	10-19 (decimals=0)	Double
Float	1-13	Float
Float	14-19	Double
Number	1-8 (decimals>0)	Float
Number	9-19 (decimals>0)	Double

This table summarizes how shapefile and dBASE field types convert.

Think about how some of the tabular Census data converted on previous exercises

AutoCAD Files

- Two Options
 - Entire drawing: CAD to Geodatabase
 - Certain Features: use the feature class to feature class tool
- ArcGIS Desktop 9.3 Help provides helpful information about the composition of CAD files

How import from CAD (conversion) works

<http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm?topicname=how%20import%20from%20cad%20%28conversion%29%20works>

Thank You

For more information refer to the following resources in the
ArcGIS Resource Center for Desktop 10

Geodatabase Design Steps:

http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#/Geodatabase_design_steps/003n00000010000000/

Creating a File geodatabase:

http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#/Creating_a_file_geodatabase/003n0000000260000000/