

# GEODATABASE

A stylized, low-poly illustration of a computer workstation. The monitor displays a line graph with a blue line showing an overall upward trend with some fluctuations. The keyboard is shown in a perspective view with various colored keys. A mouse is connected to the computer by a cord. The background consists of soft, overlapping shapes in shades of blue, green, and brown.

# What is a Geodatabase?

- **Native data format for ArcGIS**
- **Stores vector and attribution in a single relational database management system**

# Types of Geodatabase

- **Personal**
- **File**
- **ArcSDE (“Enterprise”)**

# Personal Geodatabase

- **Designed for smaller-scale data sets**
- **Stored in a Microsoft Access**

# ArcSDE Geodatabase

- **Designed for larger organizations**
- **Stored in an enterprise RDBMS**
  - Oracle
  - SQL Server
  - DB2
  - Informix
- **Purchase the RDBMS separately**

# Special Features

The background of the slide features a stylized illustration of a laptop. The screen displays a line graph with a blue line that fluctuates, showing an overall upward trend. Below the screen, the keyboard is depicted with various colored keys in shades of blue, green, and brown. The entire scene is set against a background of overlapping, semi-transparent shapes in muted colors like blue, green, and brown.

- **Subtype**
- **Domain**
- **Versioning**
- **Relationships**
- **Topology**
- **Annotation**
- **Geometric Networks**
- **Modeling**

# Subtype

- **Group features of a feature class into subsets based on an attribute value**
  - Ex: Water mains – Material subtype
- **Can only be created with ArcEditor and ArcInfo**
- **Set up to automatically enter correct value based on subtype selected**
- **Requires integer values (cross-ref to description)**

# Domain

- **Defined “acceptable” values for a field or a subtype**
- **Can be created in ArcView**
- **Helps prevent data entry error**
- **2 Types:**
  - **Range (numeric values)**
  - **Coded Value (unique categories)**



# Subtype & Domain Usage

**Feature Class**



**Subtypes**



**Domains**



# Versioning

- **Multi-user editing**
- **ArcSDE Geodatabase only**
- **What-If scenarios for designing**
- **Tracking workflow of a continuous project**

# Relationships

- Store relationships between objects in the GDB in a **RELATIONSHIP CLASS**
- “Messages” can be sent to related objects if a feature changes (e.g., deleted)
- Types of relationships:
  - Simple (peer-to-peer)
  - Composite (existence of an object depends on existence of related object)
- Can establish relationship **RULES**

# Topology

**Set of rules establishing the physical relationship between features of one or more feature classes in a dataset**

These Rules Define:

- Whether features can overlap
- If arcs can dangle (i.e., not connect at both ends)
- How to handle shared borders
- What features should connect
- Range (“tolerance”) where features snap

# Annotation

- **Descriptive text associated with a feature**
- **Feature-linked: as Feature Class in GDB**
- **Convert ArcInfo coverage annotation to a GDB Annotation Feature Class**
- **Managing Annotation (new toolbar in 9.0)**
- **Dimensioning (dynamic length & distance measurements of features)**

# Modeling

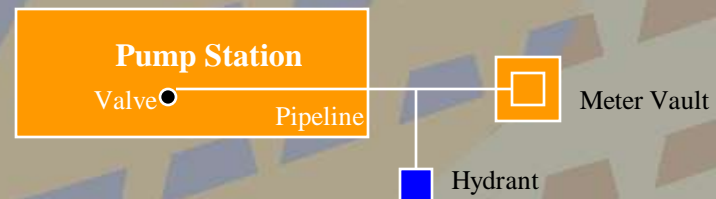
- Created using CASE tools (Computer-Aided Software Engineering)
- Must use ArcEditor or ArcInfo to develop



# Geometric Networks

- **Connecting edges and junctions into a network**
- **Created and Edited with ArcEditor or ArcInfo**
- **View network only with ArcView**

Example: Water Network



# **Additional Notes**

- **Cannot be used in ArcView 3.x**

