GEODATABASE

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

- 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 be 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

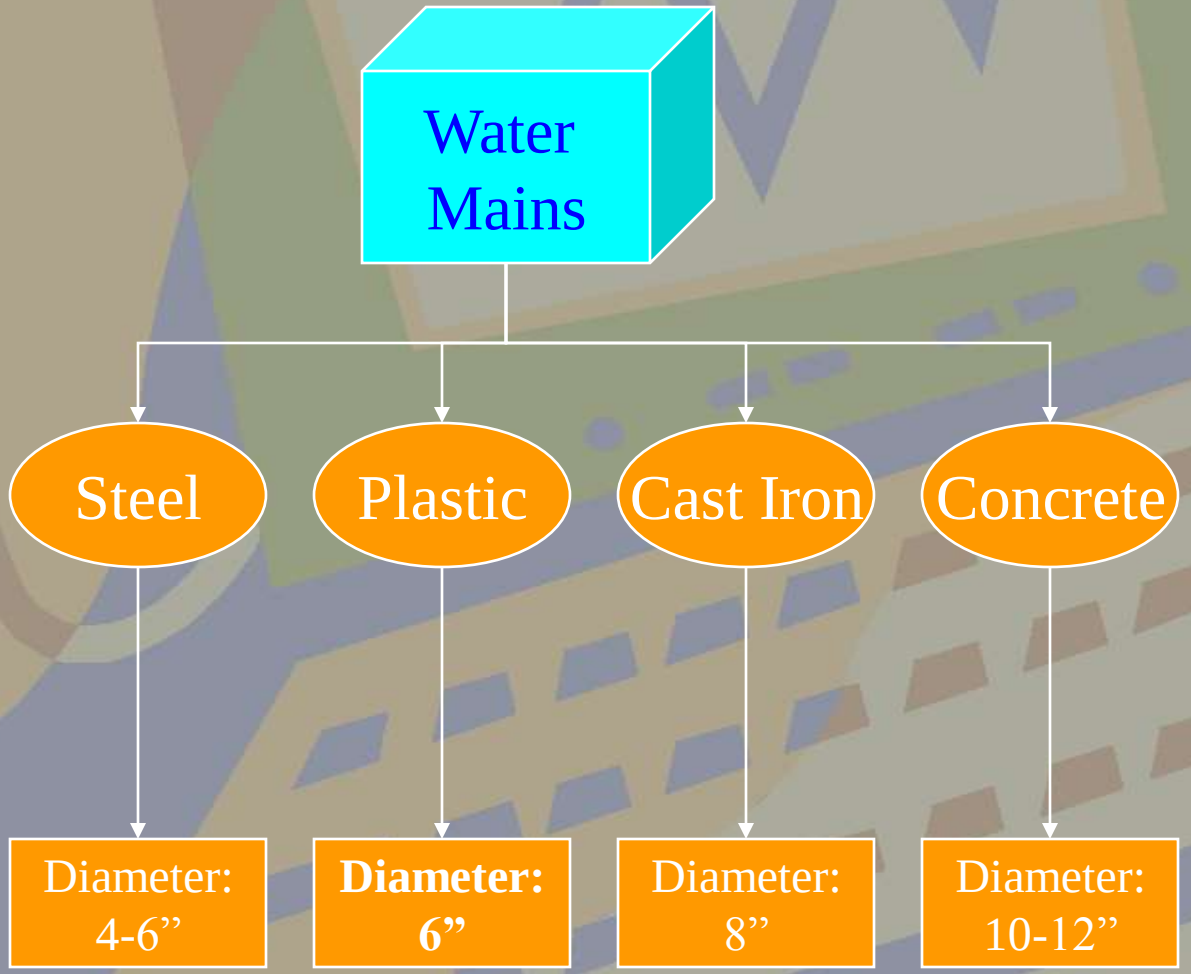
- Defined “acceptable” values for a field or a subtype
- Can be created in ArcView
- Helps prevent data entry error
- 2 Types:
  - Range (numeric values)
  - Coded Value (unique categories)

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)

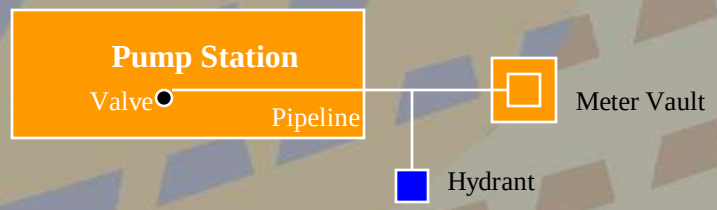
Modeling

- 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