GTECH 709 Rules and behavior

Attribute domains
Subtypes
Behavior in the Geodatabase

- ..is what makes geodatabase features smart
- Enforcing integrity with attribute domains
- Grouping features using subtypes
- Table relationships
  - Between feature classes
  - Between feature classes and non-spatial tables
Attribute Domains

- Define what values are allowed for a field in a feature or a non-spatial table
- Created and edited in ArcCatalog
Attribute Domains

• Are a specialization of well-known data types
  – ValveTypeDomain is a Long Integer with a permissible value range from 1..10
Enforcing Data Integrity

- Preventing errors during data entry
- Checking validity after the fact
Types of Attribute Domains

- Range domains

- Coded value domains
Subtypes

• The closest we get to object-orientation in the geodatabase

• To group similar features without creating a new feature class
  – Group parcels into residential, commercial, and agricultural subtypes and associate different attribute domains with each group

• Faster than many feature classes
Example of a Subtypes

- Subtypes of feature class country_lanes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dirt</td>
</tr>
<tr>
<td>2</td>
<td>Gravel</td>
</tr>
<tr>
<td>3</td>
<td>Grass</td>
</tr>
</tbody>
</table>

Default Values and Domains:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Default Value</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape_Length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potholes</td>
<td>50</td>
<td>Few</td>
</tr>
<tr>
<td>Cows</td>
<td></td>
<td>GrassHerdSize</td>
</tr>
</tbody>
</table>
Example of a Subtypes

- Subtypes encoding and decoding
  - Feature class table
  - ArcMap Table of Contents
Creating a Subtype

- Based on an existing attribute, or
- A new field containing subtype values
  - Values have to be short or long integer
- For each subtype, you can associate default field values and domains
- You have to define one default type
- Once defined the new subtype can become target of an ArcMap edit operation
Using Subtypes with Features

- Task: Create New Feature
- Target: Watershed: Second Order
- Attributes:
  - Property: FID, SHAPE Length, St. Order, Velocity, Contaminants
  - Value: 1, 4993.92, First Order, First Order, Second Order, Third Order

Diagram showing a watershed with subtypes and attributes.