



Leveraging Relationship Classes in the Geodatabase

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Presentation Outline

- **What is a relationship class?**
- **How to create a relationship class**
- **Navigating between related objects**
- **Editing with a relationship class**

What is a Relationship Class?

- An item in the Geodatabase that stores information about a relationship between two feature classes and/or tables.
- Example:


 Parcel	OID	Zone	Area
	28	Commercial	10000
	794	Residential	5000
	858	Residential	6050


 Buildings	OID	Parcel_ID	Building Type
	1	28	Office Building
	2	794	Townhouse
	3	794	Townhouse
	4	858	Condo
	5	858	Condo

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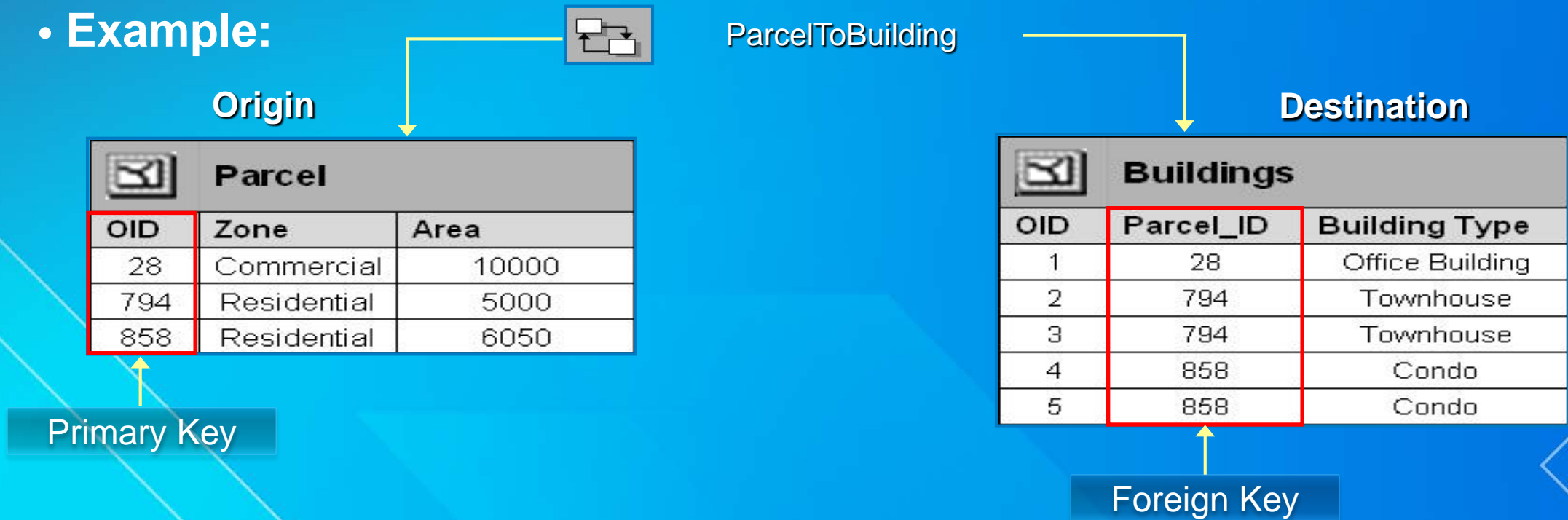
ParcelToBuilding

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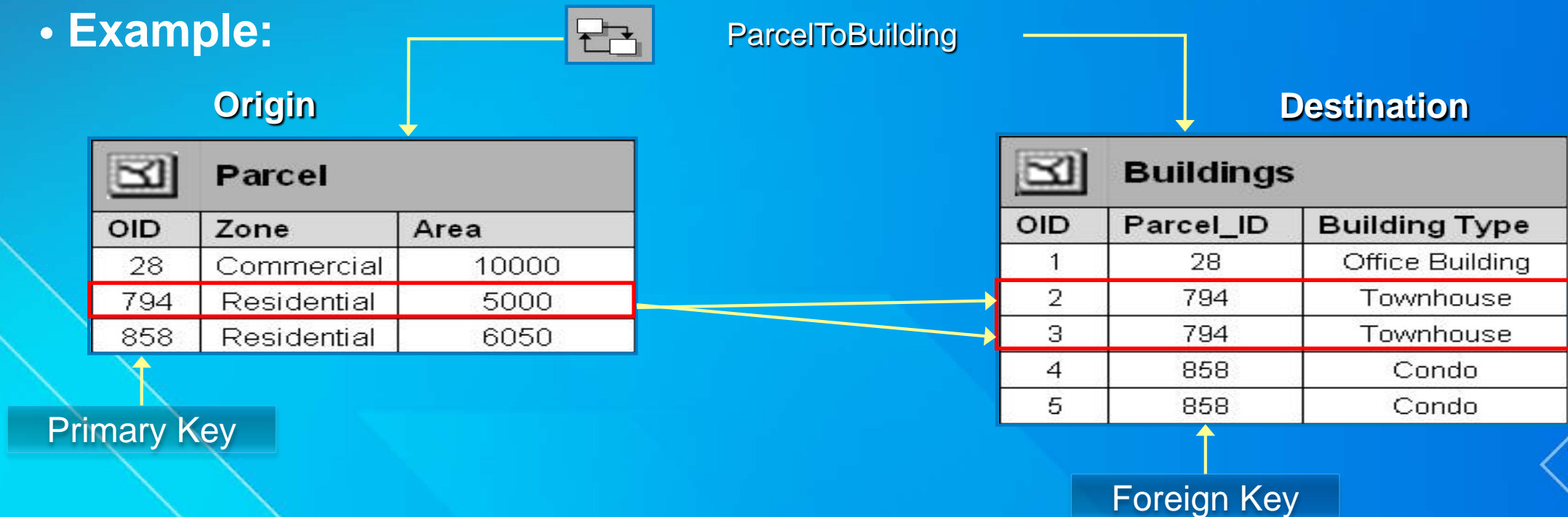
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Why use a Relationship Class?

- **Navigating**
 - Identify related objects
- **Editing**
 - Facilitate editing with automatic updates
 - Relationship rules define and control how objects relate
 - Relationship rules can be enforced through Validation
- **Versioning**
 - Participate in versioning

Relationship Classes vs. Relates and Joins

	Relationship classes	On-the-fly relates	Joins
Scope	Geodatabase	Cross database or data source	Cross database or data source
Typical uses	Ensuring data integrity	Editing with low overhead	Labeling, symbology
Composite objects	Yes	No	No
Attributes	Yes	No	No
Relationship rules	Yes	No	No

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How to create a Relationship Class?

- **Catalog**
 - **Relationship Class Wizard**
- **Geoprocessing Tools**
 - **Located in the Data Management toolbox**
 - **Create Relationship Class - The same as the wizard**
 - **Table to Relationship Class - Used to create an intermediate relationship class table from an existing table**

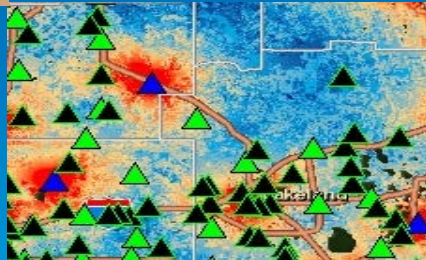
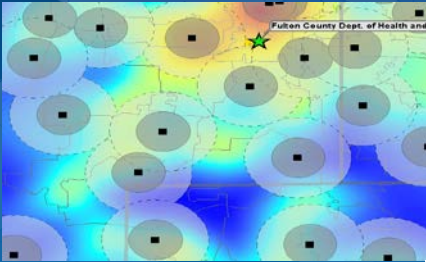
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Creation and Navigation

Create a Relationship Class

Navigate between related features



Editing with a Relationship Class

- **Behavior is dependent on the type of relationship class**
- **Simple**
 - **Objects are independent of one another**
 - **Ex. Parcels and Owners**
- **Composite**
 - **Destination objects are dependent on the related origin objects**
 - **Ex. Utility Poles and Transformers**

Editing Origin Objects with a Relationship Class

	Simple	Composite
Delete	Foreign key set to Null in objects related to deleted object	Objects related to deleted object are deleted
Merge	Foreign key set to Null in objects related to deleted object	Objects related to deleted object are deleted
Split	Larger part of the split maintains the relationships	Larger part of the split maintains the relationships
Move/ Rotate	No effect on related objects	If messaging is set to Forward the related objects will also move

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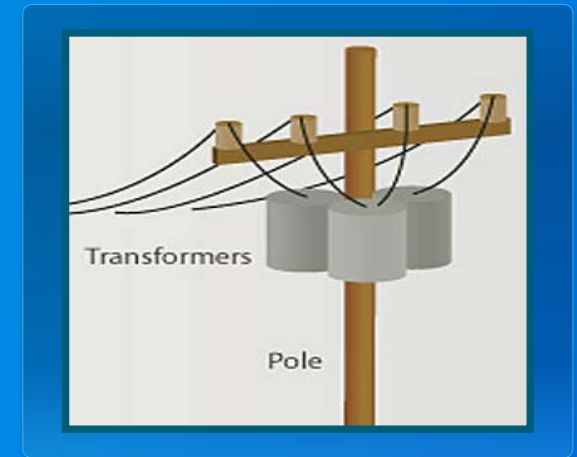
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Relationship Class Rules

- **Restrict how objects in the origin and destination classes can be related**
- **Set the minimum and maximum number of relatable objects**
- **Set rules based on subtypes to constrain the types of objects that can be related**
- **Validate the rules in an edit session**

Relationship Class Rule Example

- **Utility Pole - Transformer**
- **Pole Subtypes: Wood or Steel**
- **Transformers must be related to 1 pole**
- **Wood poles can support 1 to 2 transformers**
- **Steel poles can support 1 to 3 transformers**

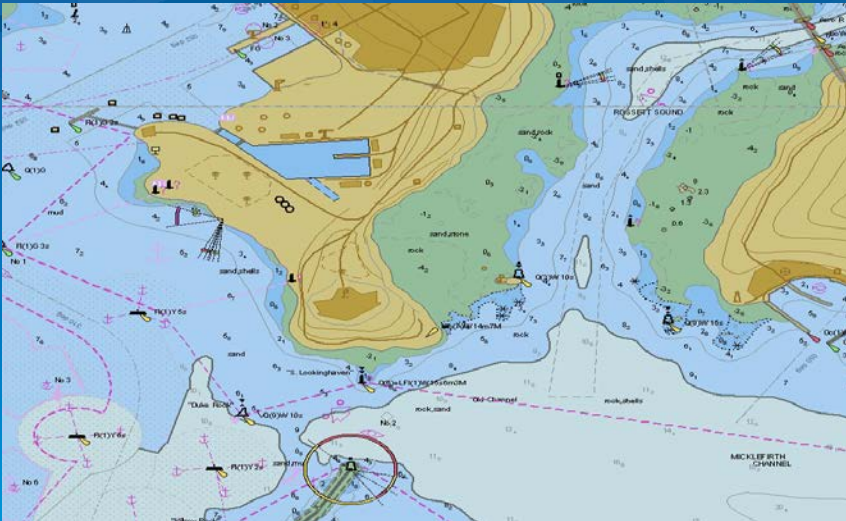


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Editing

Editing with Relationship Classes



Relationship Classes Summary

- **Relates two object classes that are stored in the same Geodatabase**
- **Stored in a feature dataset or as a stand alone relationship class**
- **Created in Catalog with the Relationship Class wizard or a Geoprocessing tool**
- **Navigate between related objects**
- **Enforces referential integrity**

Unsupported

- **Recursive relationships**
- **Composite keys**

Things to consider with composite

- **If a composite relationship class exists between two classes, no other relationship class can be created between the same two classes.**
- **An object class cannot be the destination in more than one composite relationship class.**
- **It is not recommended to use composite relationship classes with feature classes that are participating in a geometric network**

Geodatabase ArcObjects API

- To create a relationship class
 - `IFeatureWorkspace.CreateRelationshipClass`
 - `IRelationshipClassContainer.CreateRelationshipClass`
- To get and set relationship class properties
 - `IRelClassSchemaEdit`
 - `IRelationshipClass`
 - `IRelationshipRule`
 - `IRelationship`



Understanding our world.