The Problem

- Data comes from a variety of sources, and often, the data you want to display on your map is not directly stored with your geographic data (i.e., has no spatial component).

Non-Spatial Data Sources

- For example, you might obtain data from
  - A federal agency
  - A state agency
  - A local government

- If this information is stored in a table, such as an Excel spreadsheet, or even a text file, you can associate it with geographic features and display the data on your map.
Benefits of Associating Data?

- Efficiently incorporate non-spatial data into an existing layer.
  - specifically data without a geographic component
- Merge layers for subsequent mapping and analysis
  - temporarily or permanently

Methods Of Associating Data

- ArcMap provides two methods to associate attributes with geographic features
  - Joins:
    - When you join two tables, you append the attributes from one into the other based on a field common to both tables.
  - Relates:
    - Relating tables defines a relationship between two tables—also based on a common field—but doesn't append the attributes of one to the other. Instead, you can access the related data when necessary.

What Is Joining?

- Merging the attributes of two datasets that share a common attribute.
- One-to-one relationship (Joining)

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What Is Joining?
- Merging the attributes of two datasets that share a common attribute.
- One-to-one relationship

When To Join?
- You'll want to join two tables when the data in the tables has a one-to-one or a many-to-one relationship—for example, you have a layer showing store locations, and you want to join a table of the latest monthly sales figures to it.
What is Relating?

- One-to-many relationships (Relating)
- Not covered in this workshop

When To Relate?

- You’ll want to relate two tables when the data in the tables has a one-to-many or many-to-many relationship - for example, your map displays a parcel database, and you have a table of owners. A parcel may have more than one owner, and an owner may own more than one parcel.
Notes About Joining

• Joins and relates are reconnected whenever you open the map. This way, if the underlying data in your tables changes, it will be reflected in the join or relate.
• When you’re through using a join or relate, you can remove it.
• You can make a join permanent by exporting the dataset.
• Can associate any datasets, but only if they share a common attribute.

Common Attribute Must Be Exact!

• String types will not associate to integer types even if the String field contains only integers.