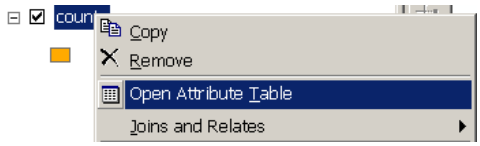
Joining Basics

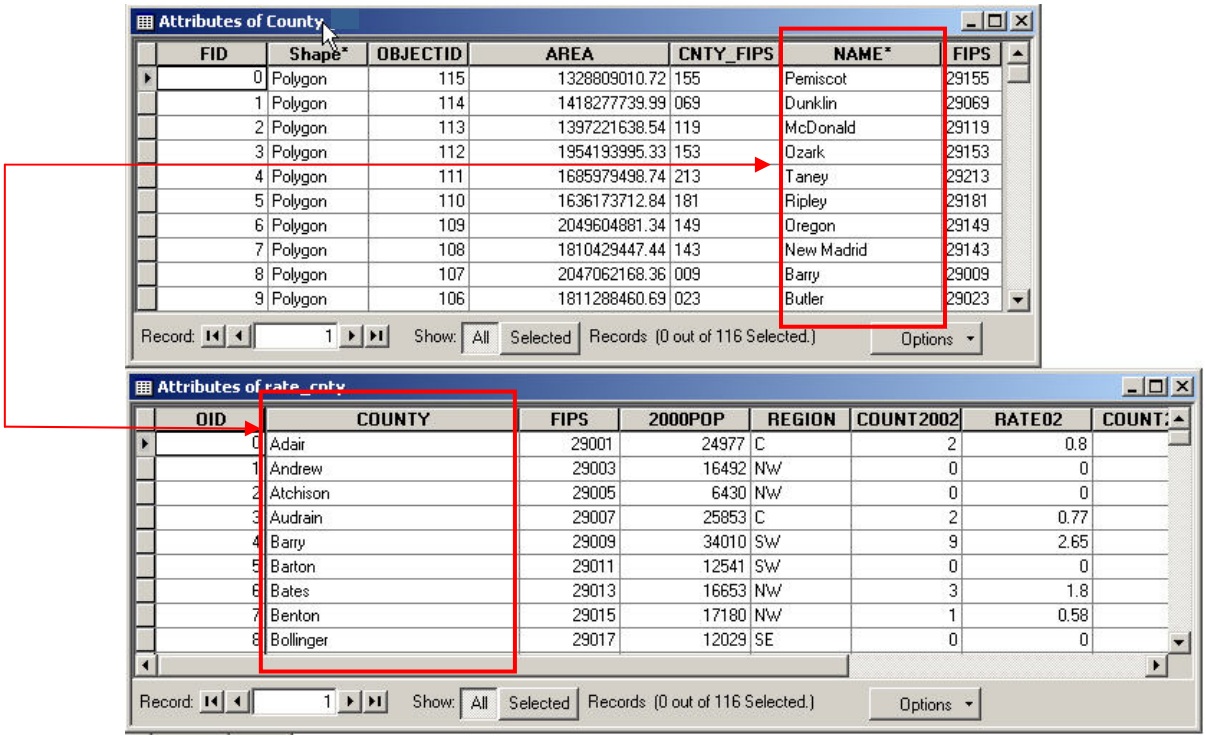
Joining a new table or file (Access or Excel) to an existing layer, such as a county boundary allows you to append this new information to the data layer. Data columns from the joined table will be available for visualization or labeling the same as any columns in the original geographic file.

You must have a data field or column common to both files. The names of the column headings do not need to be the same (for instance one can be called Name and the other County) but the column type (text, numeric, date, etc) and contents in both columns must be identical. This includes punctuation, spelling and case (mixed vs. UPPER). If you are familiar with Access, joining tables is very similar to creating a relationship.

You should review both the attributes of the geographic files and your own data before you begin. This is done by opening ArcMap and adding both your data file and the geographic file you are joining to (most commonly the county boundary file located in M:\GISDATA\District_bounds *for users connected to that folder).*

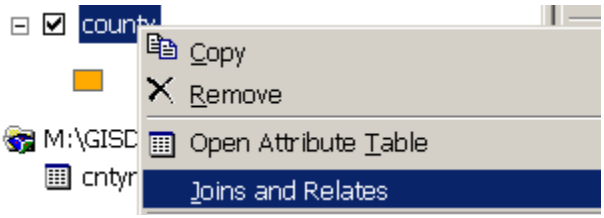


Open the attribute table of the county layer and your data table and see if they follow the same general format. Make note of which columns in each file contain the common data column. In this example, NAME in the county file and COUNTY in the data table.

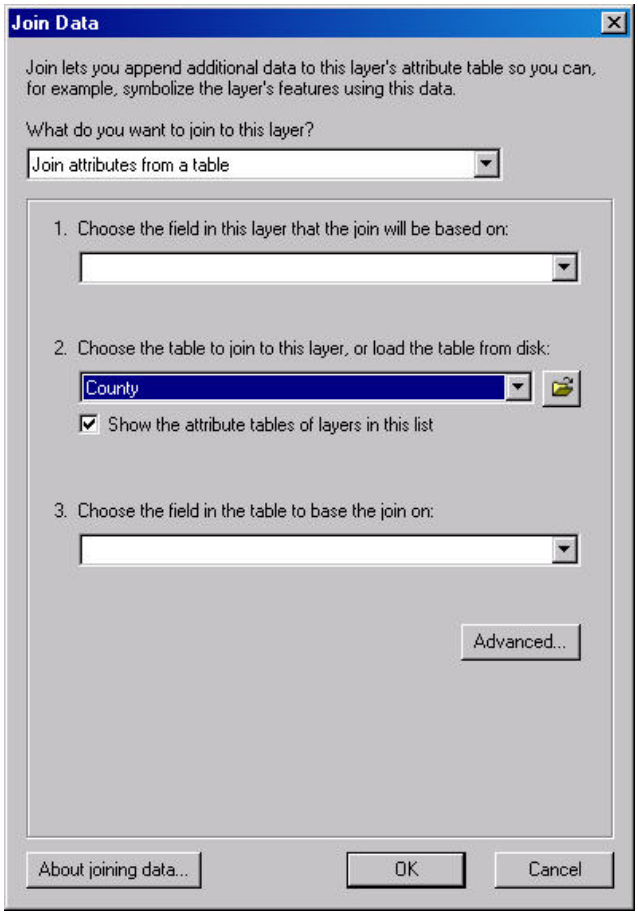


Joins between your geographic layers and your data tables are defined through the Layer Properties.

Right-click on layer you want to join and select Joins and Relates > Join.



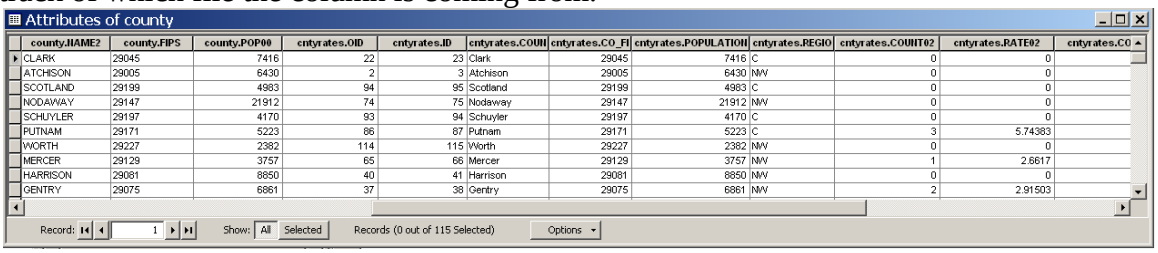
Although the Join dialog might seem intimidating because of its length, if you read it from top to bottom, you will see that it is self-explanatory.



1. Select the field in the geographic table that contains the common value. NAME in the example we are using.
2. Confirm the table name you want to join to this layer. Do not assume the correct table is in the dialog, it will just show the 1st one it finds.
3. Select the field in this data table that contains the common data. COUNTY in the example we are using.
4. Click OK.

As soon as you have completed a join, you should immediately check the attribute table of your base layer. Use the scroll bar at the bottom of the table, scrolling all the way to the right. Columns from your data table should now appear after the columns of your base layer.

Notice that the column headings have changed. The column headings will now contain both the name of the layer and the column heading (**county.area, county.NAME… geofield.field2 … myTable.COUNTY, myTable.count2002).** This helps you keep track of which file the column is coming from.



You should CAREFULLY examine the contents of your joined table. If the columns from your data table all contain <Null>, there is a mismatch between your two files.

Remember, in order to achieve a successful join, the data within the columns you are joining from both the base layer and the input table must be a 'letter perfect' match.

Some things to keep in mind:

- Joins are case sensitive. If one column has 'Jackson' and the table you are joining to uses all caps 'JACKSON', this is not a match.

- Punctuation counts. If one column says 'St. Louis' and the table you are joining says 'St Louis' (no period), this is not a match.

- Joins in ArcMap are one-to-one. If your data table contains many occurrence of a county name, for example, you should consider summarizing your data first. If you use a table of this sort without first summarizing it, only the first occurrence of a value will be used.

- You may not have an equal number of records in each table. For example, if you your data is based on counties, but you didn't have values for each county, so you left them out of the table, rather than having "0" or none in the columns. When you perform the join, all the counties you skipped in your data table will have <NULL> values in the attribute table.

- You can join multiple data tables to the same layer file.

- If you want to permanently associate the data file with the layer, you can export the data to a new shape file or featureclass if you are using a personal geodatabase.

If you have any problems with mismatches, you should make a note of the problems you observe and edit the data tables so that the data in both common columns match. You cannot edit the joined column directly; you must go back to the original file for your edits. These changes are reflected in the joined columns as you edit.

If you are using Access, you can make the edits from within ArcMap by starting an Edit session. If you are using Excel, close out of your project (do a save first) and make your edits from within Excel. Re-open the project to check your results.

Created 12/10/08
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