

Joining Tables Using ArcMap

A join involves appending the field of one table (e.g., a table in .dbf format) to those of another through an attribute or field common to both tables. A join is usually used to attach more attributes to the attribute table of a geographic layer.

Extraction of Attributes from Table

1. If the dbf table is located on a network drive (e.g., N:/, SNAP), it must be copied onto a local drive (e.g., D:/, C:/) to allow for editing.
2. Right-click on the copied table on the local drive and select properties, ensure the 'read-only' box is unchecked and click OK.
3. Open ArcMap by clicking on START/Programs and navigating to ArcMap
Note: This software can be accessed on all GIS workstations in the Geospatial Centre.
4. Click on the 'Add Data' icon - 
5. Navigate to the copied table on the local drive; select the file and click 'Add'. You may need to connect to the folder in ArcMap.
6. Right-click on the table and select 'Open'.
7. Right-click on the fields that are not needed and select 'delete', leaving only the common (key) field and the fields you wish to join.

Creating a Common Attribute Field (If Applicable)

This procedure is necessary only if the tables to be joined lack an attribute or field that is common to both.

1. In ArcMap, right-click on the dbf table and select 'Open'.
2. Click on the 'Options' button and select 'Add Field'.
3. Enter an appropriate name for the field.
4. Enter the appropriate field 'Type' (i.e., Text, Long Integer, etc.) from the first pull-down menu and enter an appropriate character 'Length' for the field.
5. Right-click on the new field header and select 'Calculate Values'.
Note: If prompted about calculating outside of an editing session click 'Yes'. Be aware that all calculations completed during this procedure are permanent. If you make a mistake, you may need to delete the newly created field and try again.
6. Use the Fields List and Functions to build a calculation expression in order to add values to the new field, and then click 'OK'.
Note: If the field has not been calculated or you receive an error message when processing your calculation, your calculation expression may require adjusting.

Adding Shapefiles to ArcMap

1. Click on the 'Add Data' icon -
2. Locate the shapefile to which you would like to join attributes by navigating through the drives, selecting the file and clicking 'Add'.

Note: You should now have the shapefile and custom dbf table added to the ArcMap session; if not, add the appropriate files to the session to continue.

Join Based on Attribute Tables

1. Right-click on the shapefile (in the table of contents) to which the attributes will be joined and select 'Join' within the 'Joins and Relates' menu.
2. Select 'Join attributes from a table' in the top pull-down menu of the new window.
3. In part 1 of the Join window, select from the shapefile the attribute field upon which the join will be based.
4. In part 2, select the dbf table from the list.
5. In part 3, select from the dbf table the attribute field upon which the join will be based.
6. Click on 'Advanced', and select either:
 - a. 'Keep all records' - (keeps all records in joined table, even if they were not matched)
 - b. 'Keep only matching records' - (only keeps matched records in joined table and removes non-matched records from the newly joined table)
7. Click OK to close the 'advanced options' window and then click OK again to complete the 'join options' window.

Note: Join will now begin processing; this may take a few minutes.
8. Access the joined attributes by right-clicking on the 'joined to' shapefile and selecting 'open attribute table'.

Removing Joins

If you make a mistake joining or you would like to create a new join, you must remove the previous join.

1. Right-click the joined shapefile and select 'Joins and Relates'
2. Then select 'Remove joins'
3. Then select 'Remove all joins'

Saving & Exporting Joins

Joins will automatically be removed once a shapefile is removed from an ArcMap session, or when an ArcMap session is exited without saving. To save joins you have two options:

This option saves the joins for future use within an ArcMap session.

1. Save current ArcMap session with joins. Click on 'File' / 'Save As' and save the ArcMap session as an.mxd file to a local drive (e.g., D:/).

This option exports the joined attributes into a new shapefile that can be accessed for future use in different projects.

2. Export shapefile with joins to a new shapefile. Right-click on the shapefile (in the table of contents) and select 'Data' / 'Export Data'. Select an output file location and name and click OK.

Note: With either of these options, the joins will remain intact for future use and analysis.

Join Based on Spatial Location

1. Right-click on the shapefile (in the table of contents) to which the attributes will be joined and select 'Join' within the 'Joins and Relates' menu.
2. Select 'Join data from another layer based on spatial location' in the top pull-down menu of the new window.
3. In part 1 of the Join window, select the shapefile upon which the join will be based.
4. In part 2, you will be given different options based on geometry types of the source feature class and the join features.
5. In part 3, specify the output shapefile or feature class name and where it will be saved.
6. Click OK to complete the Join Data window.
Note: Join will now begin processing; this may take a few minutes.
7. Access the joined attributes by right-clicking on the resulting shapefile and selecting 'open attribute table'.

For Help

- In ArcMap, select 'ArcGIS Desktop Help' from the 'Help' tab in the top menu. This help will allow you to search for specific help pertaining to spatial and attribute joins.

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