



How to Use the ArcGIS® 9.1 Merge Tool with Field Map

An ESRI® Short Tutorial • January 2006

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How to Use the ArcGIS 9.1 Merge Tool with Field Map

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How to Use the ArcGIS 9.1 Merge Tool with Field Map

ArcGIS® Modules Used: ArcGIS 9.1—ArcCatalog™, ArcToolbox™

Data: C:\arcgis\ArcTutor\Geoprocessing\San_Diego\majorrds.shp;
C:\arcgis\ArcTutor\Geoprocessing\San_Diego\Habitat_Analysis.mdb\futrds

Setup Time: +/- 20 minutes

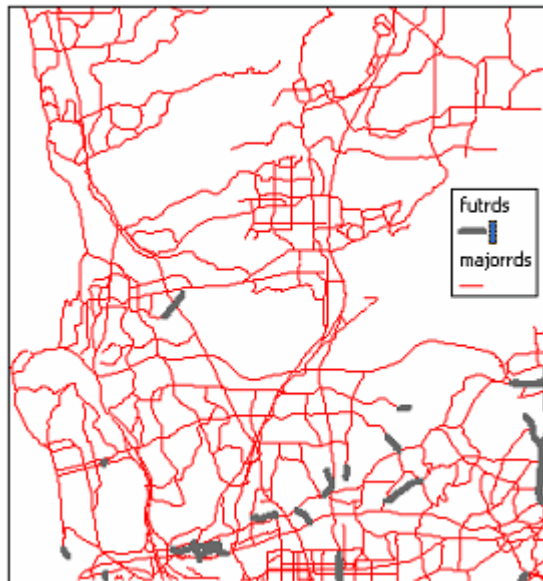
Brief Workflow Description

The importance of the Merge tool to GIS users became clear when the tool was not included in the ArcGIS 9 release. Many users familiar with the Merge tool found it difficult to work with the Append tool. Out of this situation resulted the new and truly improved Merge tool in ArcGIS 9.1. It is improved because it now includes an output field management option, the Field Map. In the following you will learn how easy it is to use Field Map and take advantage of its benefits.


Field Map is an optional parameter, which makes it easy to ignore. There are certainly situations when using the Field Map defaults is the right thing to do, but if always done, you will not realize the benefits of this powerful, easy-to-use tool. It is powerful because it allows you to manage the output fields, aka attributes, of your output data. In particular, you can manage duplicate output fields as well as unique fields from all input features. You can change the output fields' order, redefine and reformat the fields, delete unwanted fields, add and define your own output fields, and populate them using available input fields.

Note: An output field without one or more input fields is invalid; it will therefore be automatically deleted.

The data used for this exercise is assembled by merging the majorrds.shp with the futrds geodatabase feature class. Notice that this data is spatially coincident.





Preparation

- Open ArcCatalog.
- Make sure the Geoprocessing Tutorial data is installed; it is part of ArcTutor. If it is not on your computer, ask your system administrator to assist you.
- Open the ArcToolbox window by clicking the ArcToolbox icon  on the ArcCatalog or ArcMap™ toolbar.
- Open the Merge tool from the ArcToolbox window, either by navigating to its location ArcToolbox > Data Management Tools > General or through the ArcToolbox Search option. Once found, select it and click the Locate button. This will close the Search tab and return to the Favorites tab of ArcToolbox with the toolbox table of contents and the Merge tool highlighted.

If you added the Introducing Geoprocessing panel to ArcCatalog, open the panel, click Merge in the table of contents on the left. On the Merge dialog box, click Open Tool.

Note: The Merge tool may not open on top if other applications are open. To bring the Merge tool to the front, click the ArcCatalog icon on the task bar (typically along the bottom of the monitor screen) and select the Merge tool.

To read about how to add the Introducing Geoprocessing panel, refer to the How To Add the 9.1 Introducing Geoprocessing Panel to ArcCatalog and/or ArcMap document.

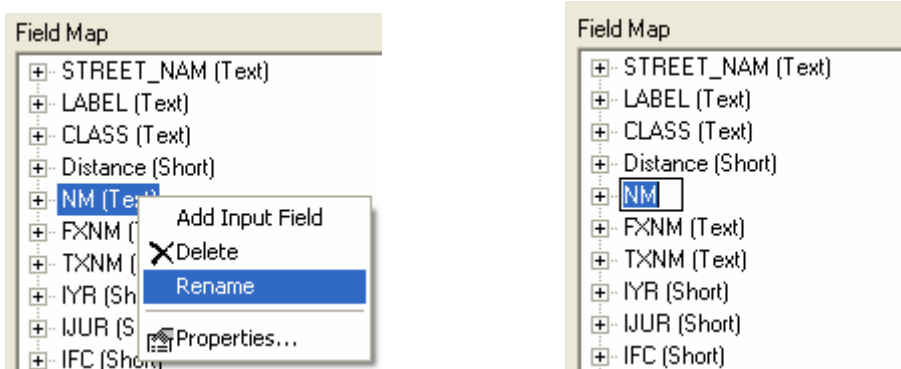
- Resize the Merge tool dialog box (by clicking the lower right corner of the dialog box, holding down the right mouse button, and pulling it out) such that there is no vertical or horizontal scroll bar and all parameters on the Merge dialog box can be seen.
- Type in the two input features to merge (their paths are listed above). Notice that the Field Map parameter gets populated with both input features and output fields. The field order seen defines the structure of the Output Feature Class table. To change that order, use the up  and down  arrows on the right side of the Field Map.

Renaming an Output Field and Setting Other Output Field Properties

1. Within the constraints of the output features, you can give your fields descriptive names.

Note: For shapefiles, the maximum allowed length for a field name is 10 characters.

2. Right-click the field you want to rename, and select Rename from the context menu.



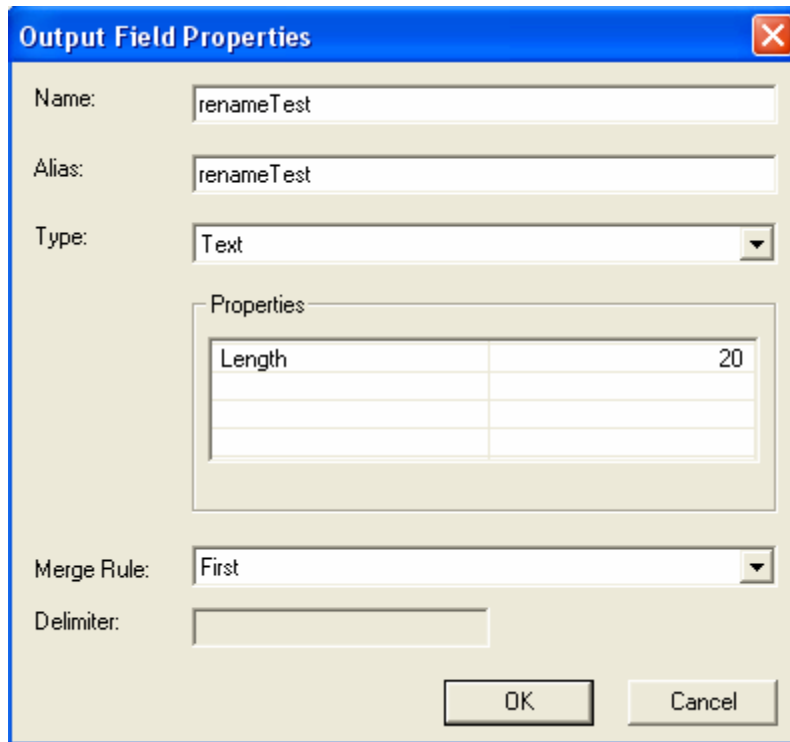
- Note that the mouse pointer blinks next to the text box; type "renameTest" and press Enter. This saves your change and refreshes the Field Map.

An alternate way to rename an Output Field is from its Properties dialog box. That process will be described later.


Note: Any spaces used when renaming fields will be replaced with underscores.

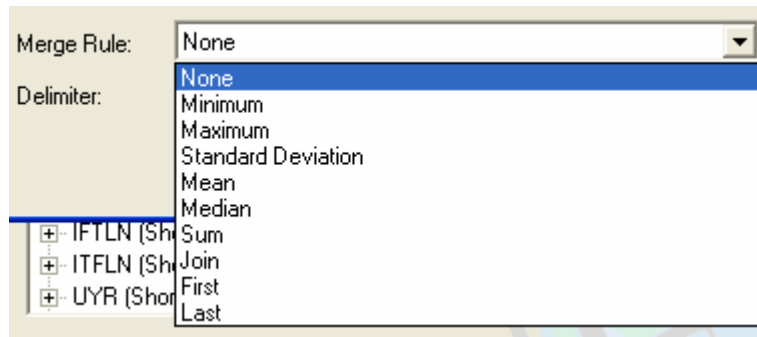
- To change additional field properties, right-click the renameTest text box. From the context menu, select Properties.

The Output Field Properties dialog box opens.



- Rename the Name field to its original name, NM, by typing "NM" into the Name text box.
- In the Alias text box, type "North marker position". Using clear, descriptive alias names is always a good approach, because it makes data easy to use and understand for you and others (think metadata).
- Next, change the text length by clicking in the right column next to Length to highlight the value and replace it with "25".
- Merge Rule allows you to specify how output field values will be handled; for example, using the Join merge rule for a text field allows concatenation of text strings with or without a delimiter, provided the input fields are from the same input features or table. Additional text string formatting can be performed. This option is useful when adding a field and defining it with two or more input fields from one of the input features.

For this exercise, a merge rule is not necessary, so click the down arrow  on the right of the Merge Rule drop-down menu. From the list that appears, select None.

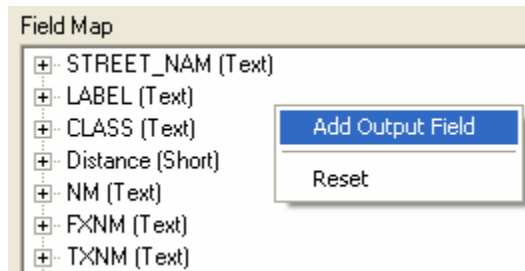


9. Click OK to save your Output Field Properties and return to the Merge dialog box.


Next, you will add an output field and define it using existing input fields.

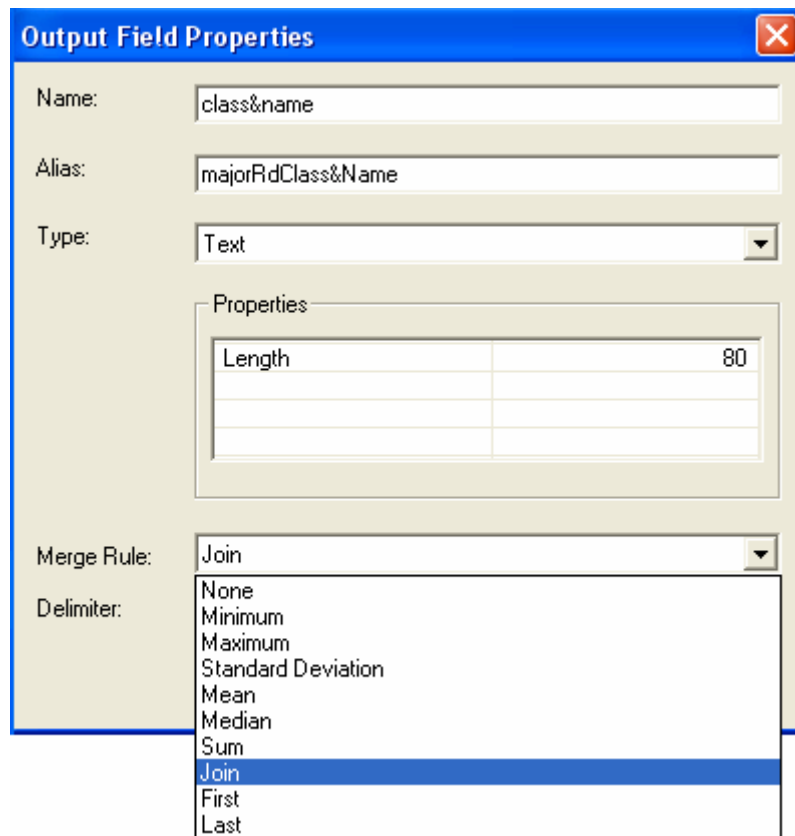
Adding an Output Field and Setting Its Properties

1. Right-click in the white area of the field map, and select Add Output Field from the context menu.



The Output Field Properties dialog box opens.

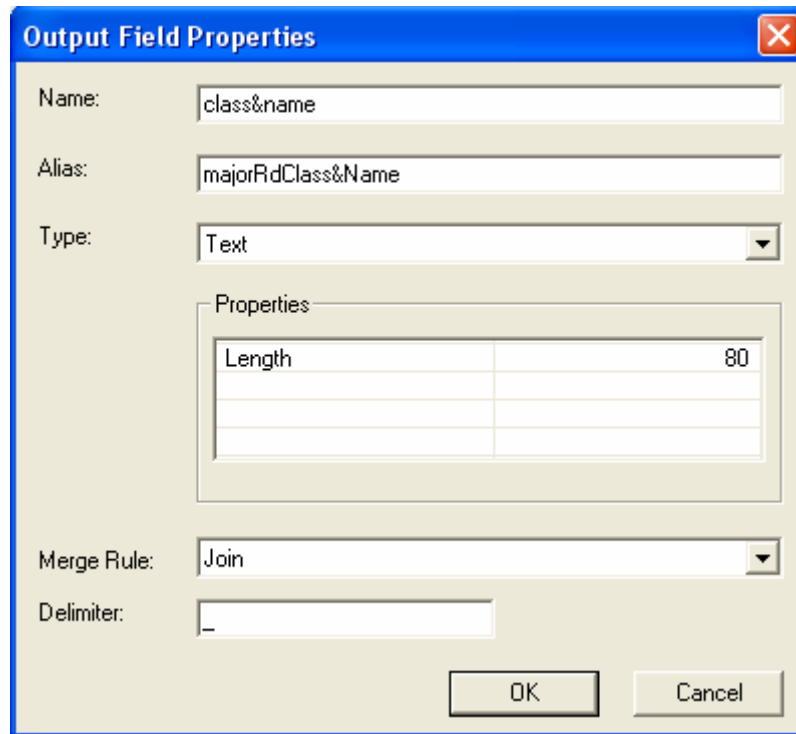
2. Type the field name "class&name" in the Name text box.
3. In the Alias text box, type "majorRdClass&Name".
4. From the Type drop-down list, select Text.
5. In the Properties box, adjust the text Length to 80 by clicking next to the 50 to highlight it, then typing "80" and pressing Enter.
6. You will join two existing input fields in the output field. To join them, use the Merge Rule property to define the details. Click the drop-down arrow  and select Join.



Note that the Delimiter text box is now enabled on the Output Field Properties dialog box.

7. Type an underscore "_" in the Delimiter text box.

The Output Field Properties dialog box should look similar to the following:

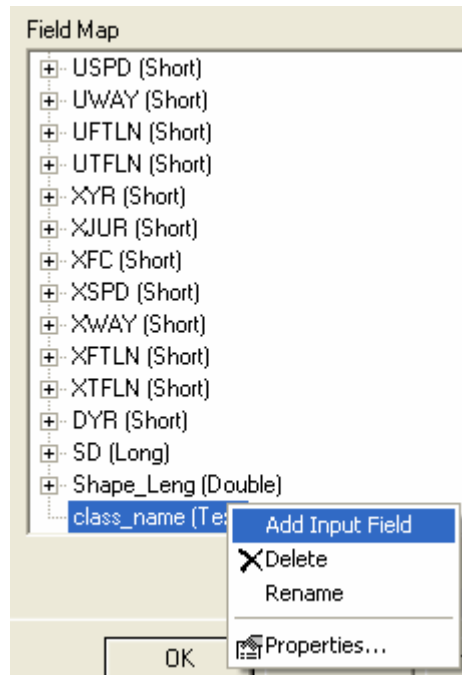


8. Click OK to complete the Output Field Properties definition and close the dialog box.
9. On the Merge dialog box, scroll to the bottom of the Field Map to view the output field added. Note that the ampersand typed has been replaced by an underscore; the ampersand is a restricted character. If you had typed a name longer than 10 characters and the Output Features was a shapefile, the name would be truncated to 10 characters. To edit the Output Field name, simply right-click it, select Rename, and update it to a shorter name.

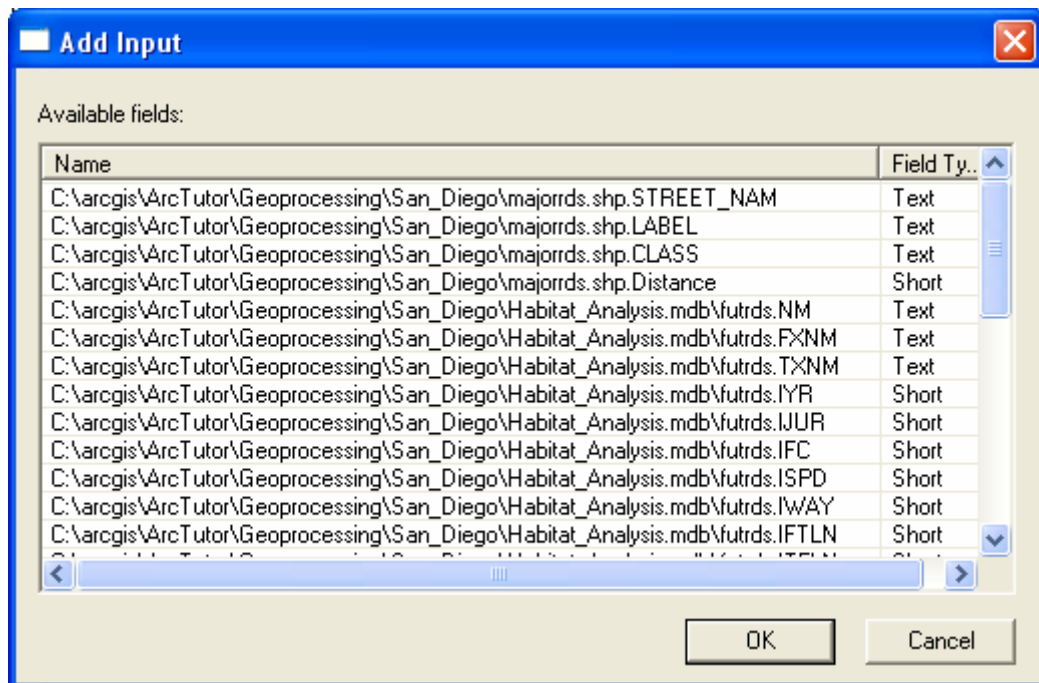
Next, you will be adding input fields to the output field just added.

Adding Input Fields to an Output Field

1. Right-click the output field you just added and select Add Input Field.

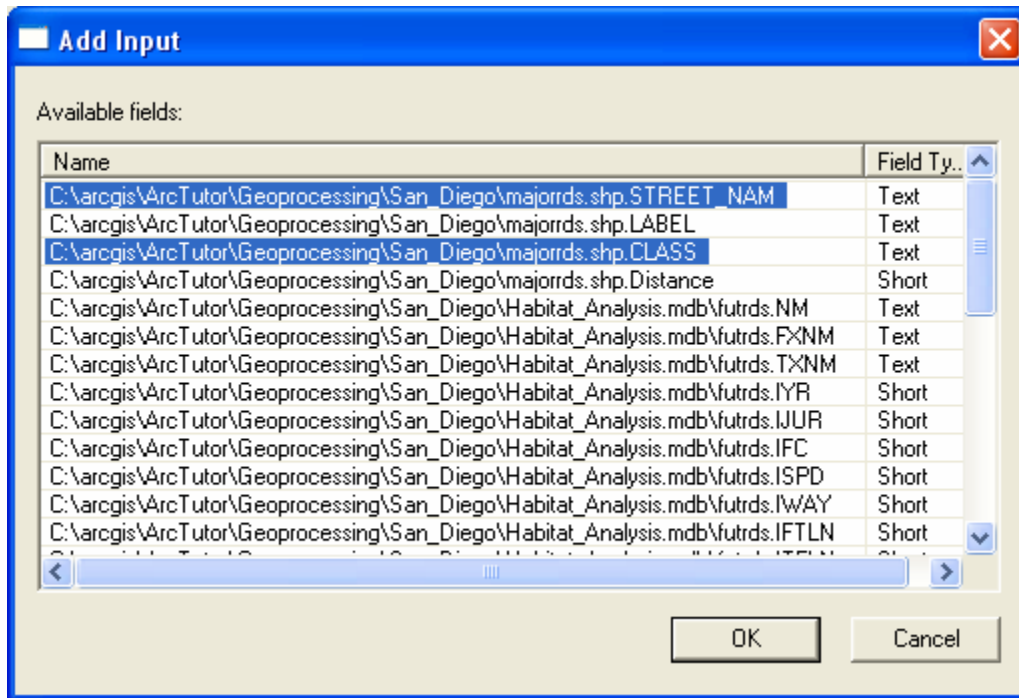


The Add Input dialog box opens. This dialog box displays all input fields from all input features. By default, they are listed in the order of the input features and their output fields.



2. Resize the dialog box to ensure that you can see the full path of each field in the Available fields list, then scroll to the fields you will add to the output field.
3. While holding down the Shift key, select the first field
C:\arcgis\ArcTutor\Geoprocessing\San_Diego\majorrds.shp.STREET_NAM, then select the third field

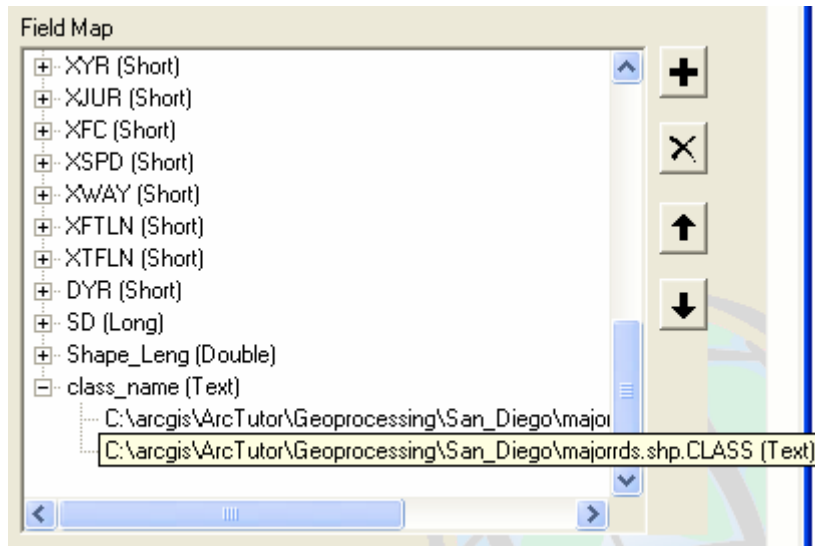
C:\arcgis\ArcTutor\Geoprocessing\San_Diego\majorrds.shp.CLASS, and click OK. This completes your selection and closes the Add Input dialog box.




- On the Merge dialog box, scroll to the output field and note the plus sign to the left of the class_name field, indicating that it has input fields.



- Click the plus sign to expand its tree branch and view the added input fields.

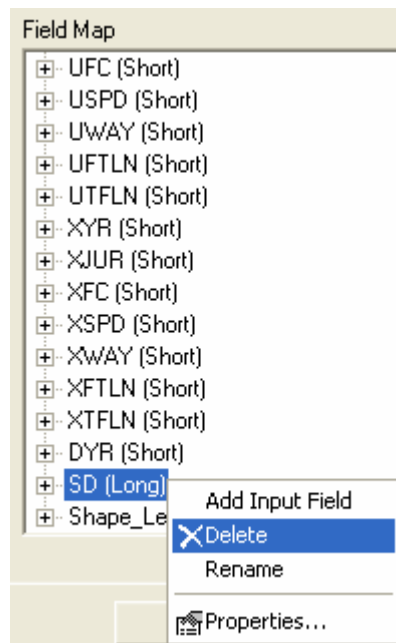


6. To see a field's full path, place the mouse pointer over the field to activate its ToolTip.
7. For the class field to precede the name field, the order of the input fields needs to be changed. Select the second field and click the  button. Place the mouse pointer over the first field to activate its ToolTip, and visually verify the class field is now first.

You can now edit—rename, change properties, delete, format, and so on—the Output Field just like any other field in the list.

Deleting Output Fields

1. Move the mouse pointer to the Field Map and, if necessary, scroll to the output field you want to delete. Right-click the output field to be deleted, and select Delete from the context menu.



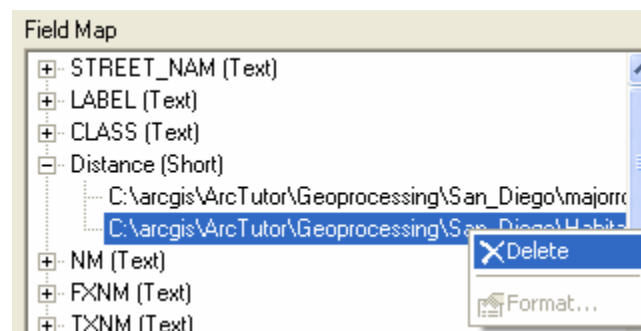
2. Repeat this step for all output fields you want to delete. Remember, the complete set of fields is in Input Features, in case later on you need a field that was deleted.

Deleting a Duplicate Input Field

1. All fields common to Input Features are listed underneath their respective output field in the Field Map. It may suffice to keep one version of an input field inside an output field, unless you want to retain the complete set of values. To delete an input field, simply click the plus sign to the left of a specific output field (here, Distance) to expand its tree branch.



2. Right-click the input field you want to delete, select Delete from the context menu, and note that—after a Field Map refresh—the field has been deleted.



Repeat this step for all input fields you want to delete. Be mindful that when deleting input fields their values are deleted as well.

This concludes the tutorial.