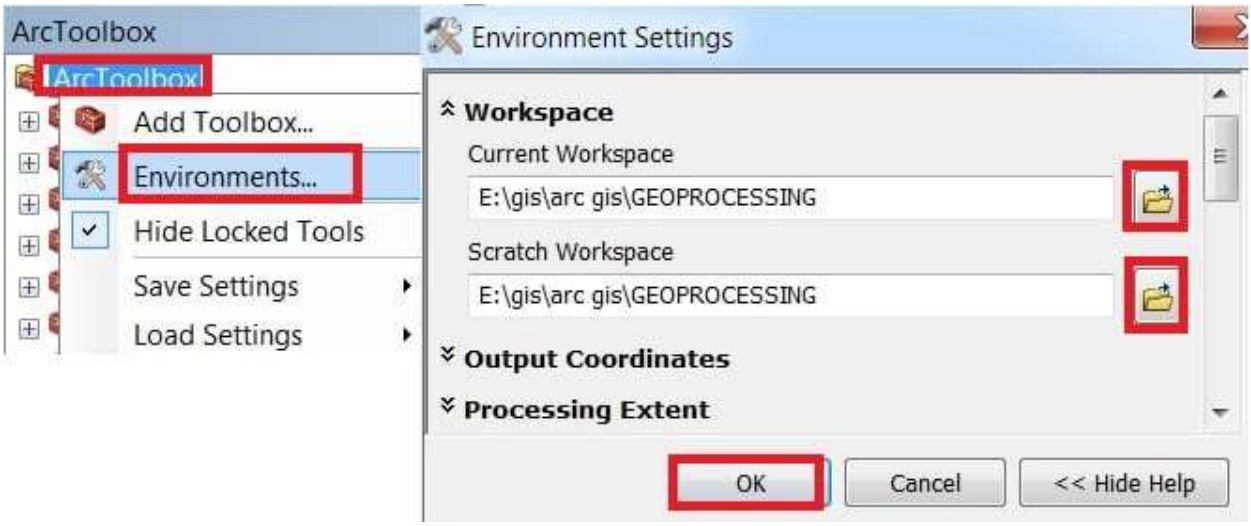
Geoprocessing

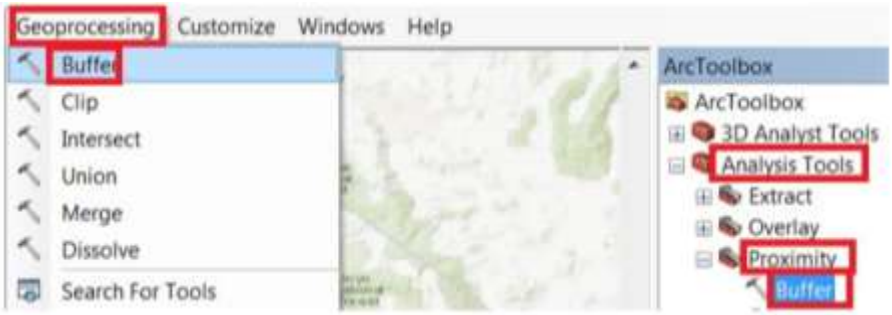
Geoprocessing is a framework and set of tools for processing geographic and related data. The comprehensive suite of geoprocessing tools can be used to perform spatial analysis or manage GIS data in an automated way. **Geoprocessing** tools can improve your productivity because the tools apply edits in bulk, such as to all features or all selected features.

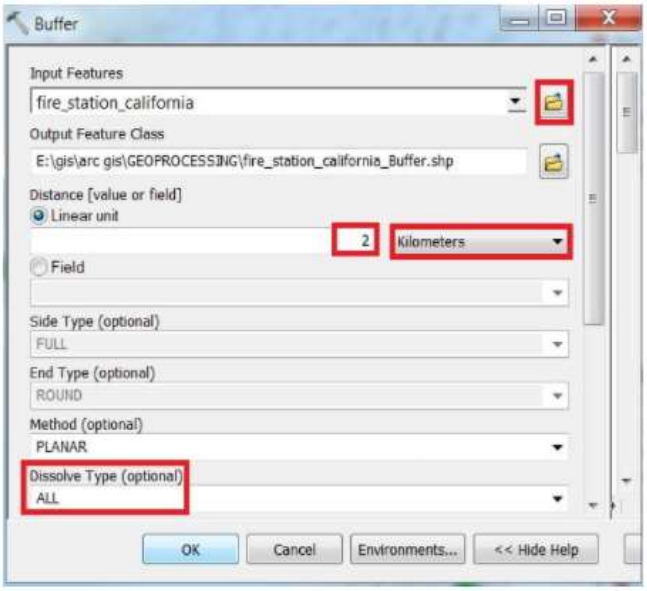
Perform this task, first set **Environments,** or connect dataset Folder. It helps to Input and Output data destination.
Open **Arc Toolbox**, Arc Toolbox pane appears, select Arc Toolbox right-click, and select **Environments**. Environments window are open, Expend **Workspace** and select **current Workspace** and **scratch Workspace**, then click OK

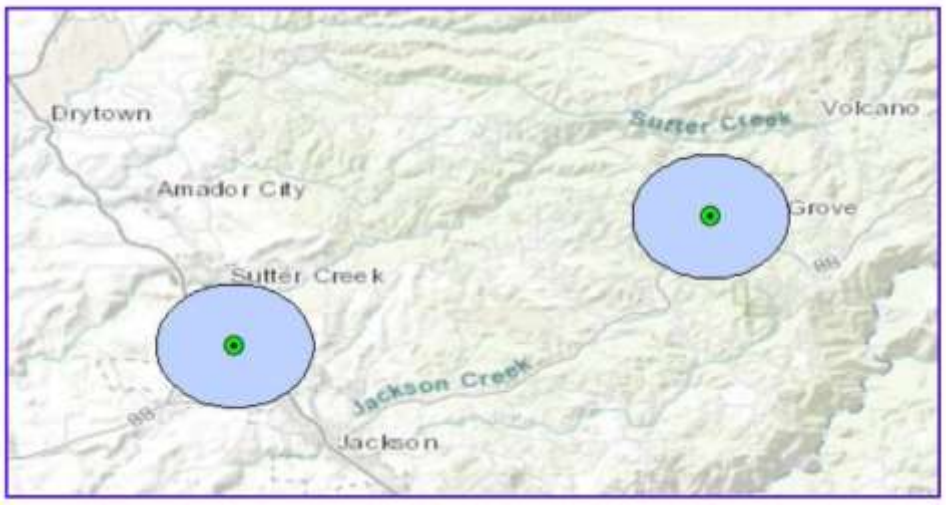


1. Buffer

Creates buffer polygons around input features to a specified distance. Open **Arc Toolbox** Arc toolbox window appears to expand **Analysis Tools.** Then expend **the Proximity** subgroup, and select **Buffer** and double click it.
You can also use the shortcut method to open the Buffer tool. Select **Geoprocessing** Tab, dropdown, and choose **Buffer**. Buffer window appears, Browse **Input** file. Output files are automatically selected on your Folder because you have already set up the Environments. Now input **Distance value** (2) and **Unit** (km).

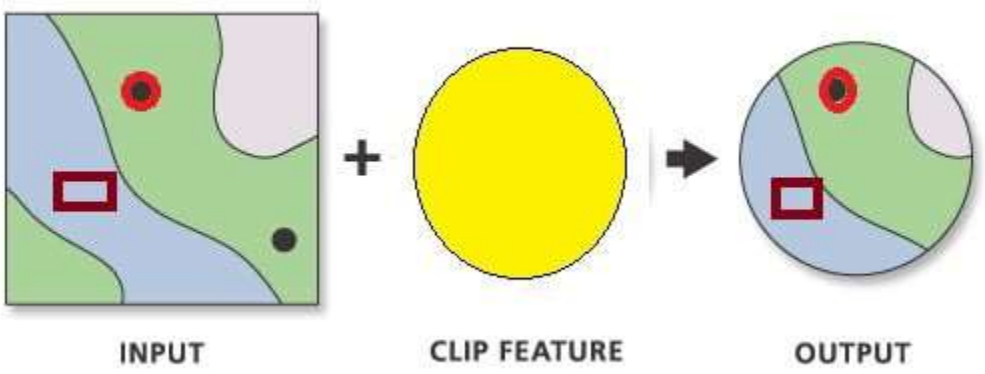

Geoprocessing
Customize
Windows
Help
Buffer
Clip
Intersect
Union
Merge
Dissolve
Search For Tools
ArcToolbox
ArcToolbox
3D Analyst Tools
Analysis Tools
Extract
Overlay
Proximity
Buffer


Buffer
Input Features
fire_station_california
Output Feature Class
E:\gis\arc gis\GEOPROCESSING\fire_station_california_Buffer.shp
Distance [value or field]
Linear unit
2
Kilometers
Field
Side Type (optional)
FULL
End Type (optional)
ROUND
Method (optional)
PLANAR
Dissolve Type (optional)
ALL
OK
Cancel
Environments...
<< Hide Help


Drytown
Amador City
Sutter Creek
Volcano
Jackson Creek
Jackson

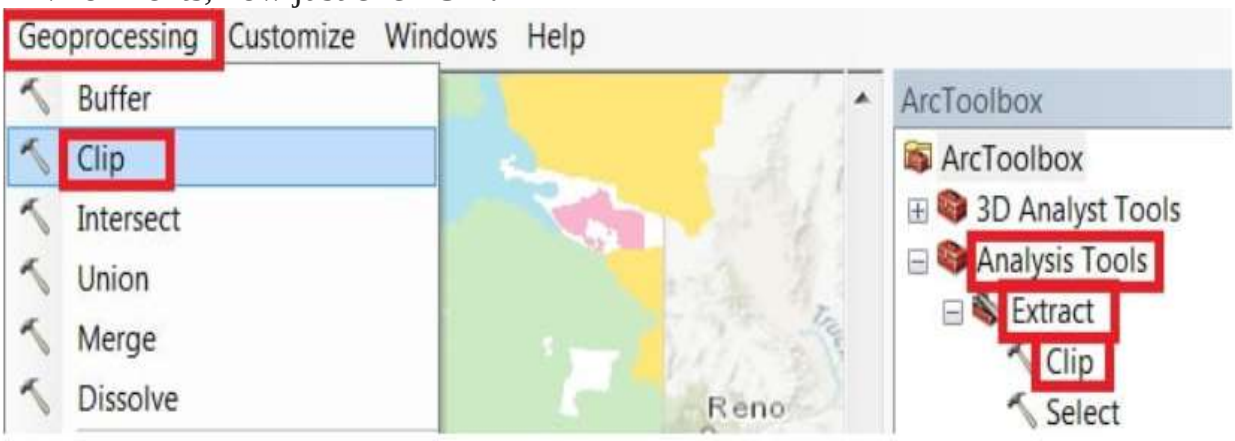
2. Clip

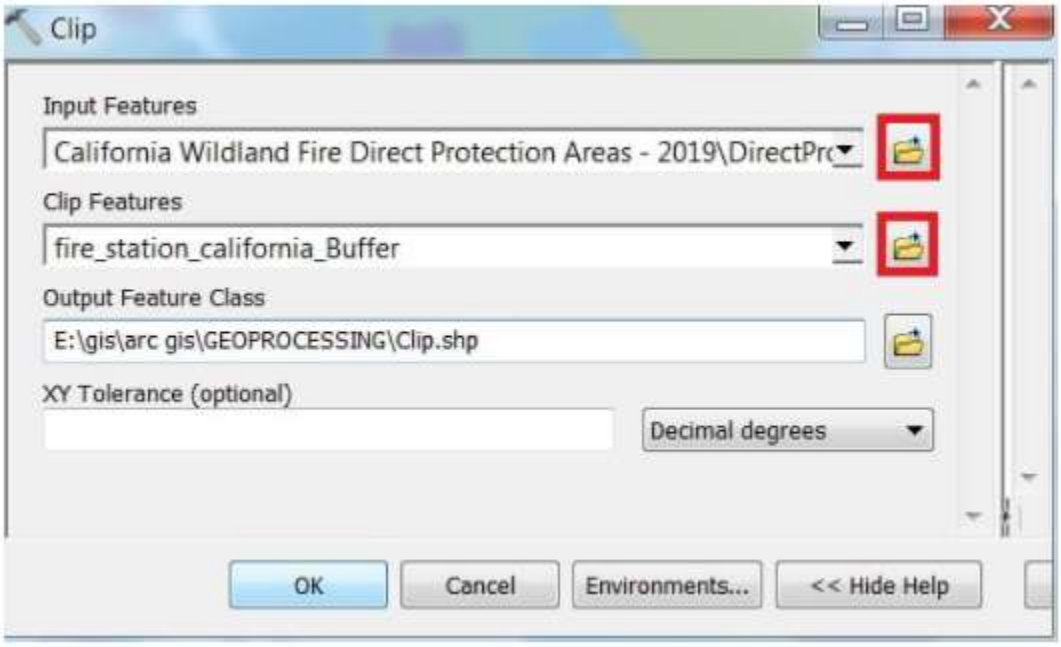
Use this tool to cut out a piece of one feature class. This is particularly useful for creating a new feature class—also referred to as a study area or area of interest (**AOI**). That contains a Geographic subset of the features in another, larger feature class.



Open **the Arc Toolbox** Arc toolbox window appears to expand **Analysis Tools**, then expend **the Extract** subgroup, select **Clip**, and double click it.

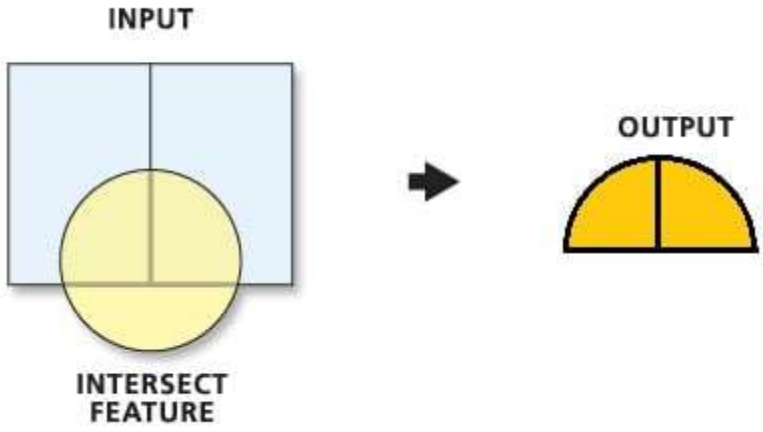
You can also use the shortcut method to open the Clip tool, select **Geoprocessing** Tab, dropdown, and choose **Clip**. Clip window appears, browse **Input** file. Output files are automatically selected on your Folder because you have already set up the Environments, now just click **OK.**





3. Intersection

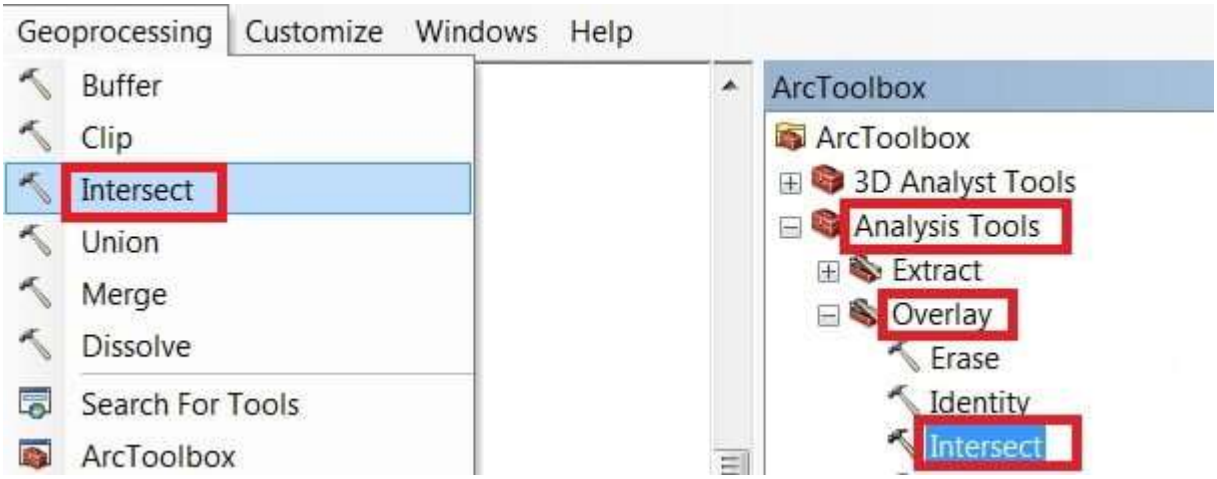
The Intersect tool calculates the geometric intersection of any number of feature classes and feature layers. The features or portion of features that are common to all inputs will be written to the output feature class.

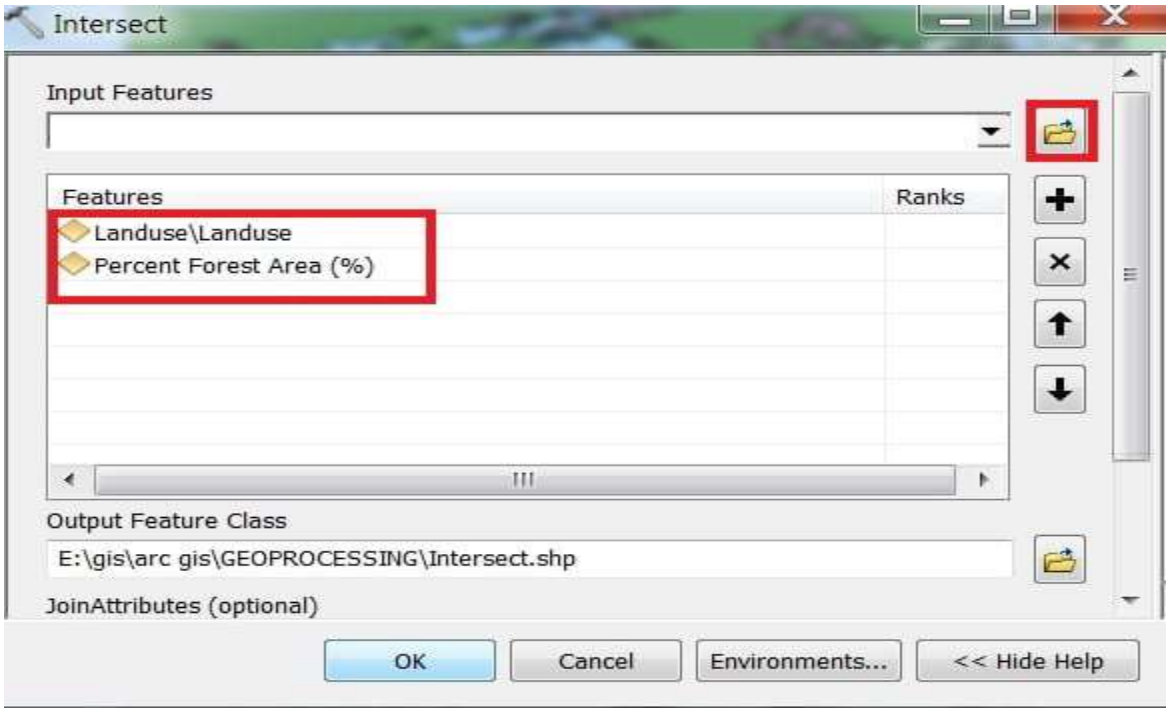


Open **Arc Toolbox** Arc toolbox window appears to expend **Analysis Tools**, then expend **the Overlay** subgroup, select **Intersect** and double click it.

You can also use the shortcut method to open the Intersect tool. Select **Geoprocessing** Tab, dropdown, and choose **Intersect**. Intersect window

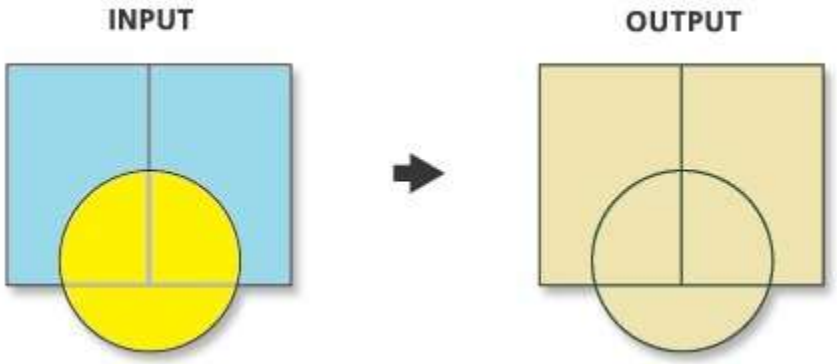
appears, browse **Input** file. Output files are automatically select on your Folder because you have already set up the Environments, just click **OK.**



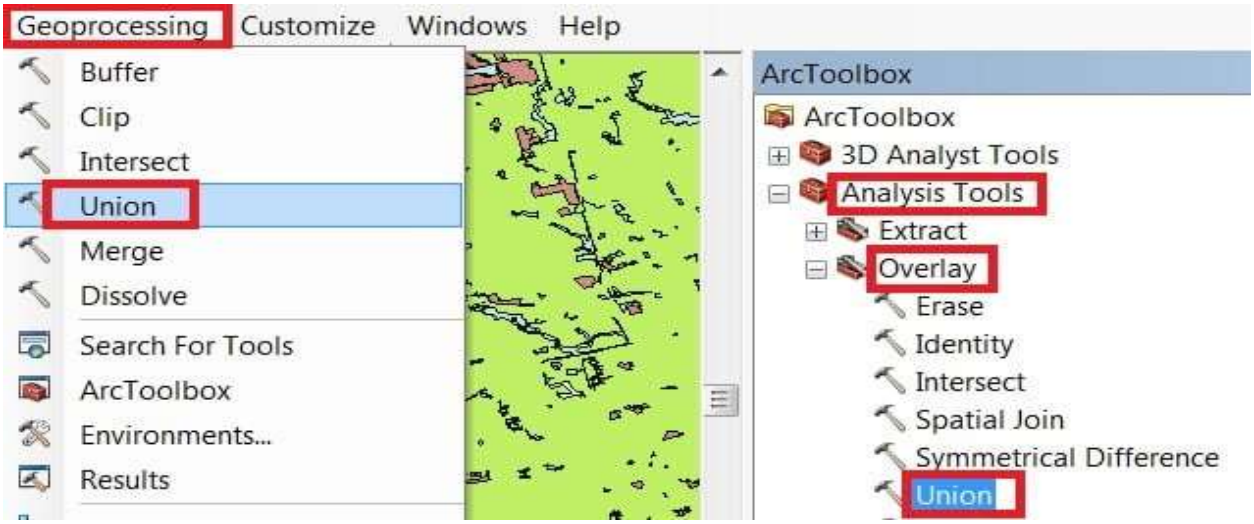


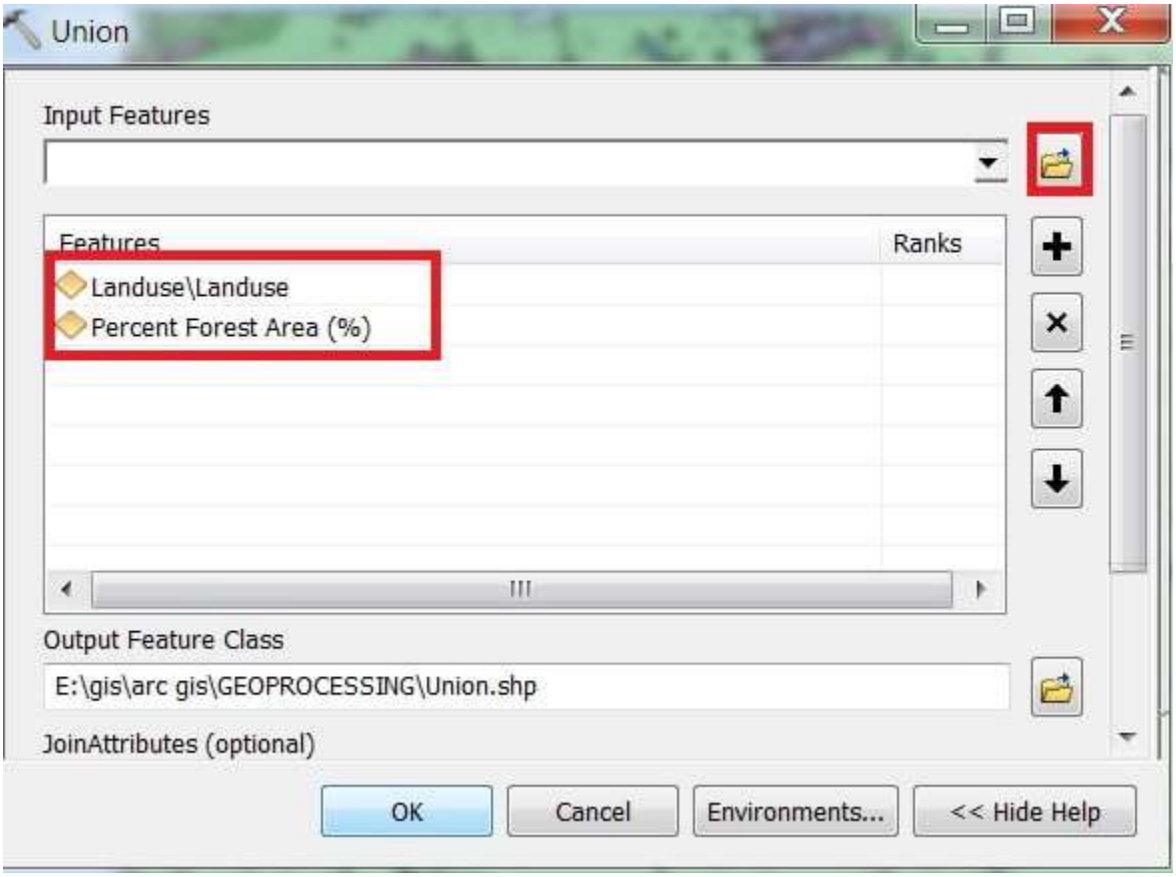
4. Union

Computes a geometric union of the input features. All features and their attributes will be written to the output feature class. Input all feature classes or feature layers must be polygons.



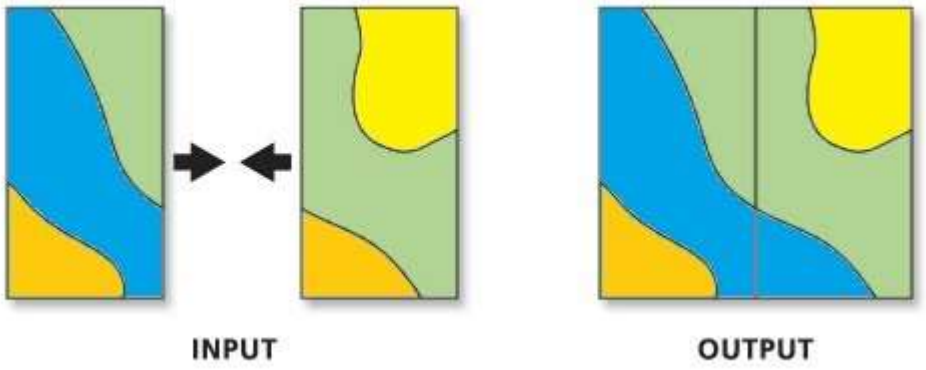
Open **Arc Toolbox** Arc toolbox window appears to expend **Analysis Tools**, then expend **the Overlay** subgroup, select **Union** and double click it.
You can also use the shortcut method to open the Intersect tool. Select **Geoprocessing** Tab, dropdown, and choose **Union.** Union window appears, browse **Input** files. Output files are automatically selected on your Folder because you have already set up the Environments. Now just click **OK.**



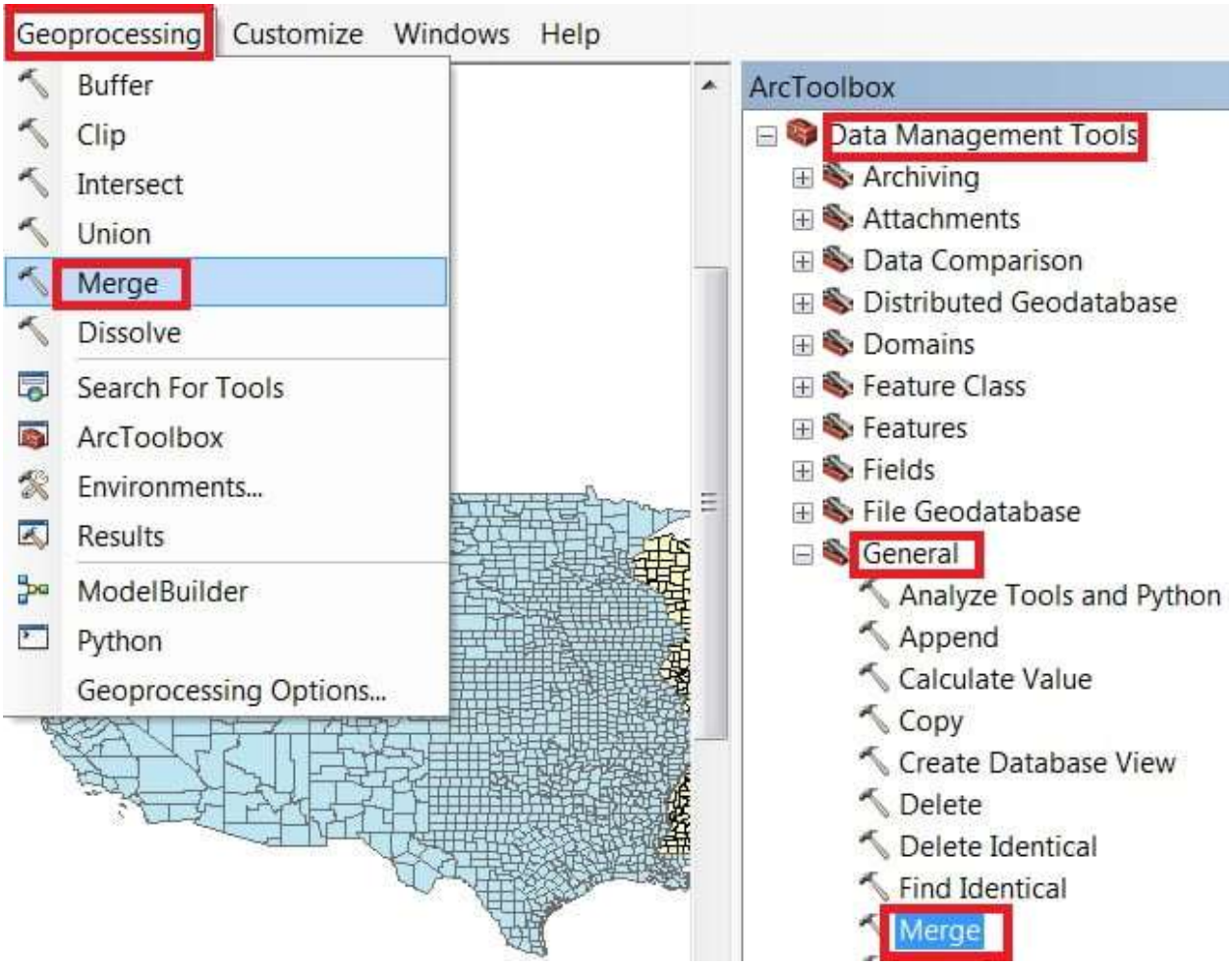


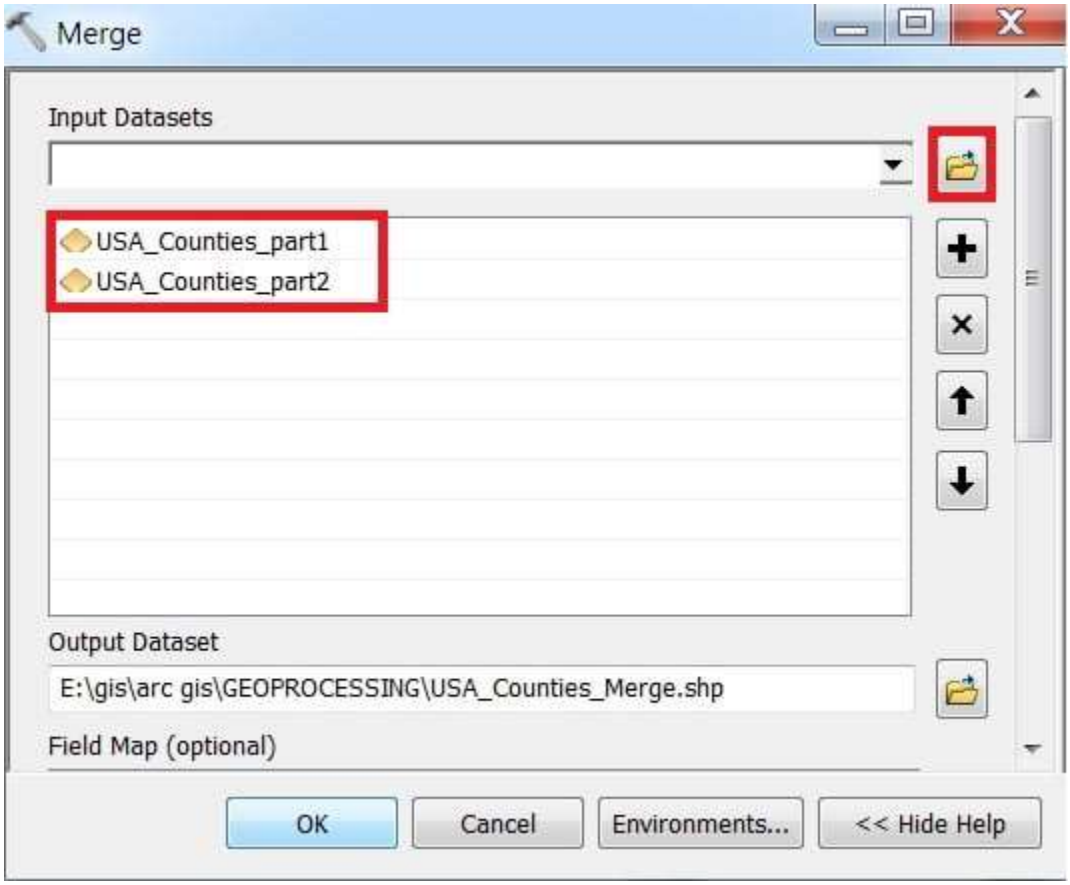
5. Merge

Computes a geometric union of the input features. All features and their attributes will be written to the output feature class. Input all feature classes or feature layers must be polygons.



Open **Arc Toolbox** Arc toolbox window appears to expand **Data Management Tools**, then expand **the General** subgroup, and select **Merge** and double click it.
You can also use the shortcut method to open the Intersect tool. Select **Geoprocessing** Tab, dropdown, and choose **Merge**. Marge window appears, browse **Input** files. Output files are automatically selected on your Folder because you have already set up the Environments. Now just click **OK.**

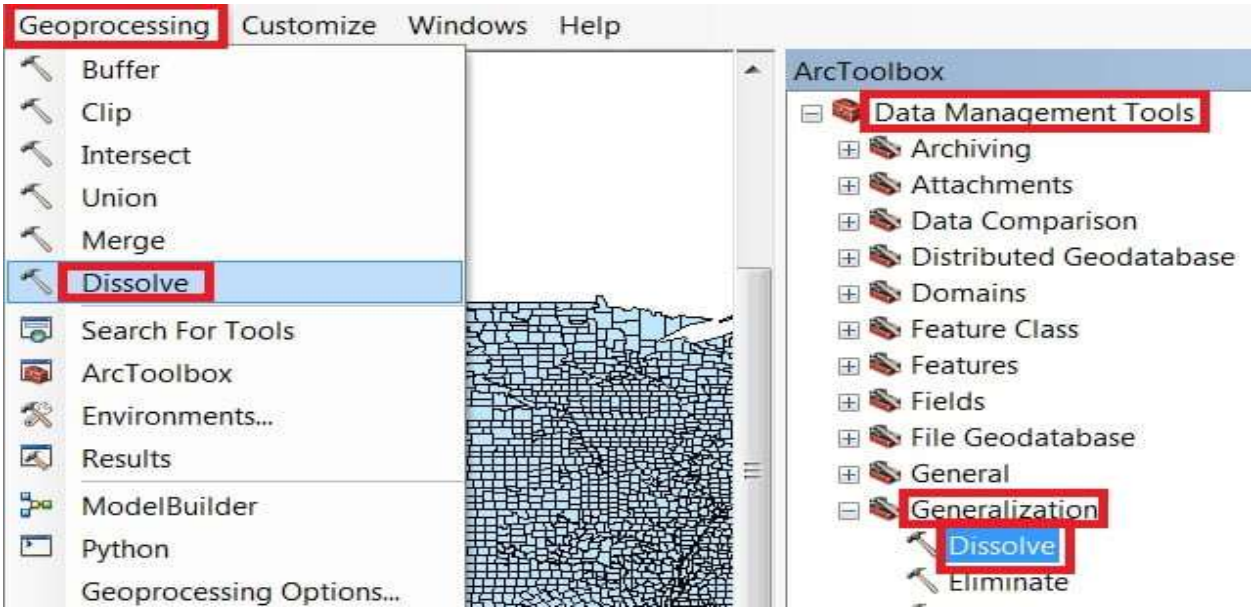


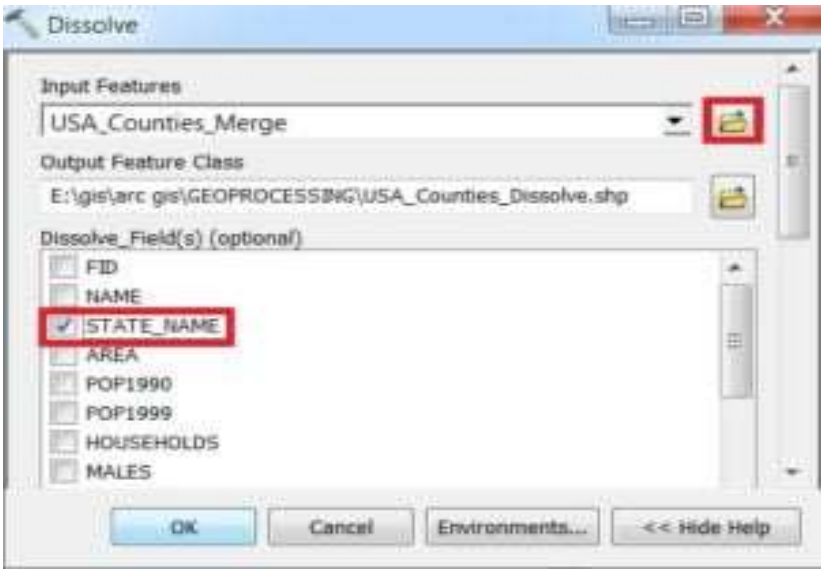


6. Dissolve

Use the Dissolve tool when you want to aggregate features based on a specified attribute or attributes. For example, you could take a feature class data collected on a county-by-county basis. Use Dissolve to create a feature class containing based on the name of each county.

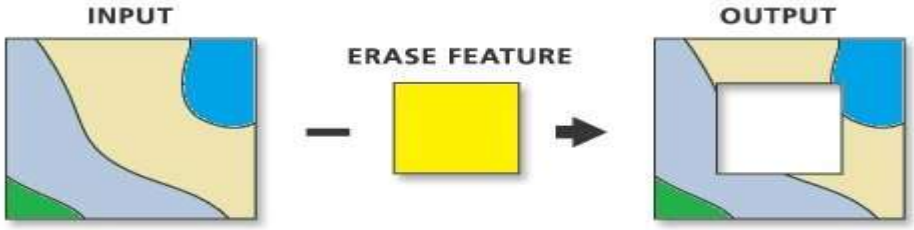
Open **Arc Toolbox** Arc toolbox window appears to expand **Data Management Tools**, then expend the **General** subgroup, select **Dissolve** and double click it.
You can also use the shortcut method to open the Intersect tool. Select **Geoprocessing** Tab, dropdown, and choose to **dissolve**. Dissolve window is appears, browse **Input** files. Output files are automatically selected on your Folder because you have already set up the Environments and most important. Select your Dissolve Field and click **OK.**



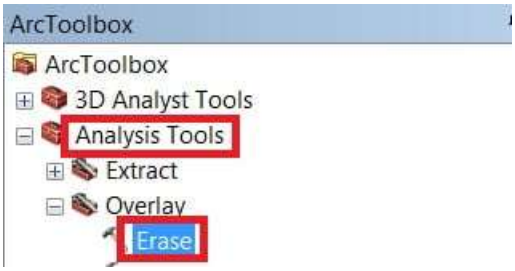


7. Erase

Creates a feature class by overlaying the Input Features with the polygons of the Erase Features. Only those portions of the input feature falling outside the erase features outside boundaries are copied to the output feature class.



Open **Arc Toolbox** Arc toolbox window appears to expand **Analysis Tools**, then expend **the Overlay** subgroup, select **Erase,** and double click it. Dissolve window is appears, browse **Input** file and select **Erase Feature**. Output files are automatically selected on your Folder because you have already set up the Environments. Now just click **OK.**



Jamal Kamal& Faris Zaidan

Lecturers