

Lecture 9

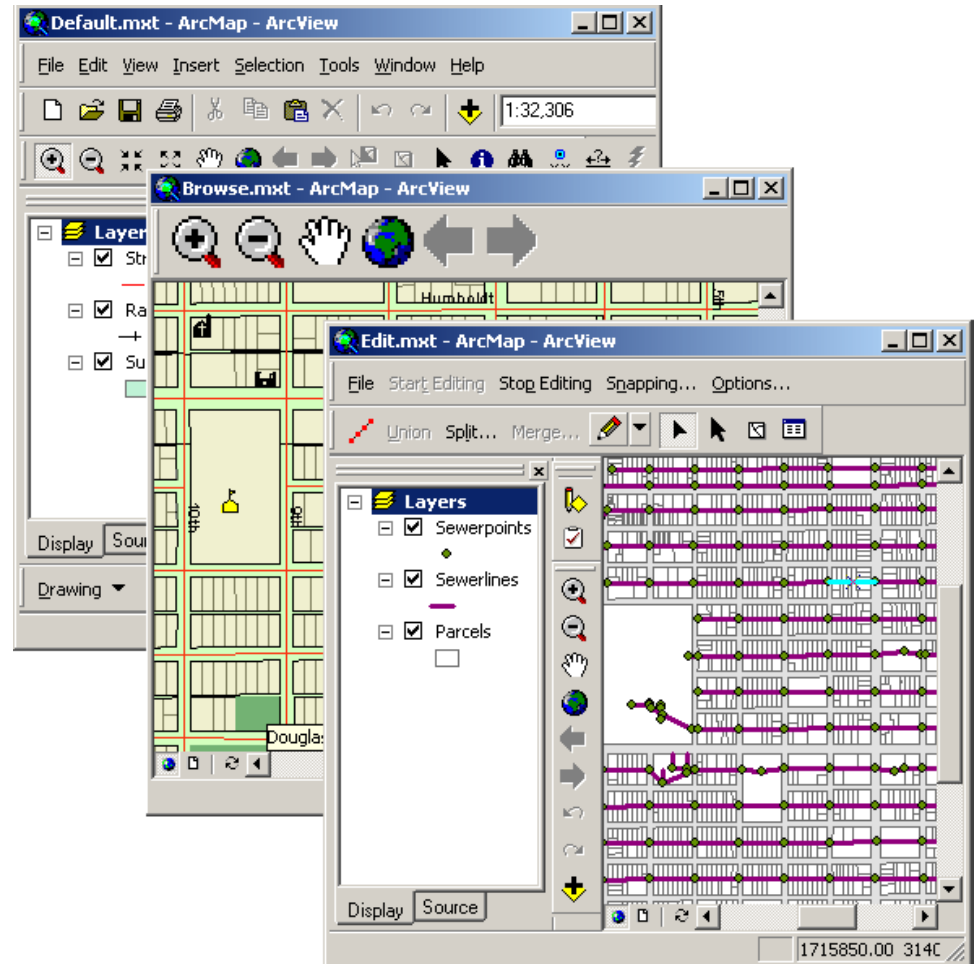
Customizing ArcGIS

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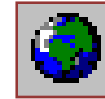
Customizing ArcGIS

- ArcGIS is designed to be customized.
- You may streamline the application by rearranging interface components or adding components.
- You can add new functionality to ArcGIS using existing code samples (a lot has been done for you).
- You can also add new functionality by developing your own code.



Elements in the Interface:

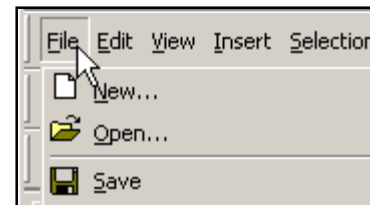
- Buttons: Objects on the interface that immediately perform a task when clicked.



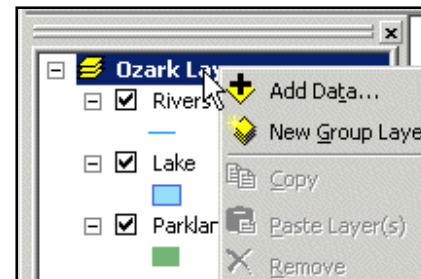
- Tools: Objects on the interface that are used to interact with the map display.



- Menus: Lists that are used to arrange commands into logical groups.



- Context Menus: Used to store commands associated with a specific object on the interface.



- Toolbars: Objects on the interface that are used as storage containers for buttons, tools, and menus.



Customizing Elements:

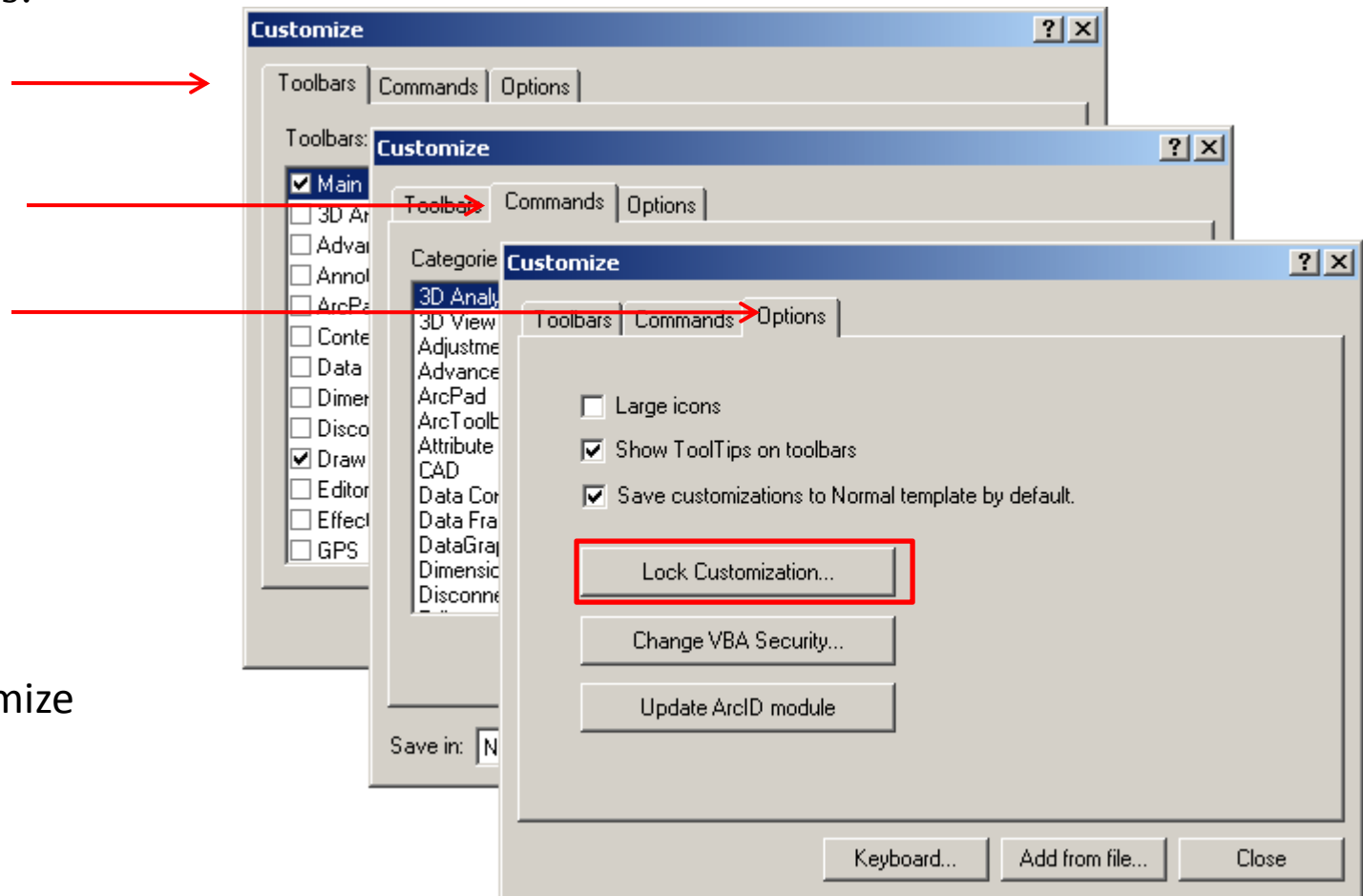
- Customize dialog box is used to rearrange, add, or remove buttons, tools, and menus. You can also turn tool bars on and off and create new ones.

Access:

Main Menu

→ Tools

→ Customize



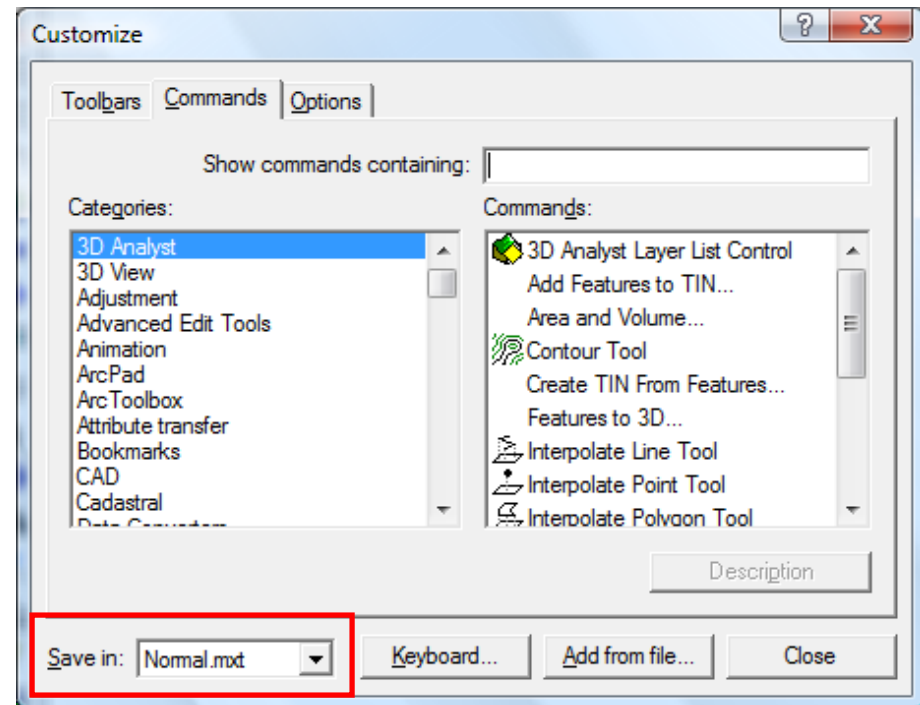
Saving the Customizations:

Customized interfaces can be saved as:

- Map document (.mxd)
- Map template (.mxt)
- ArcMap's Normal template (Normal.mxt)

Where you save the customizations depends on what you plan to do with them:

- If the customizations are intended to be used in a single map and by a single user, you typically save them in an **.mxd** file.
- If the customizations are going to be used with different sets of data and by different users, an **.mxt** file is probably the best storage option.
- If you want the customizations to load every time ArcMap starts, you store the customizations in the **Normal.mxt**.



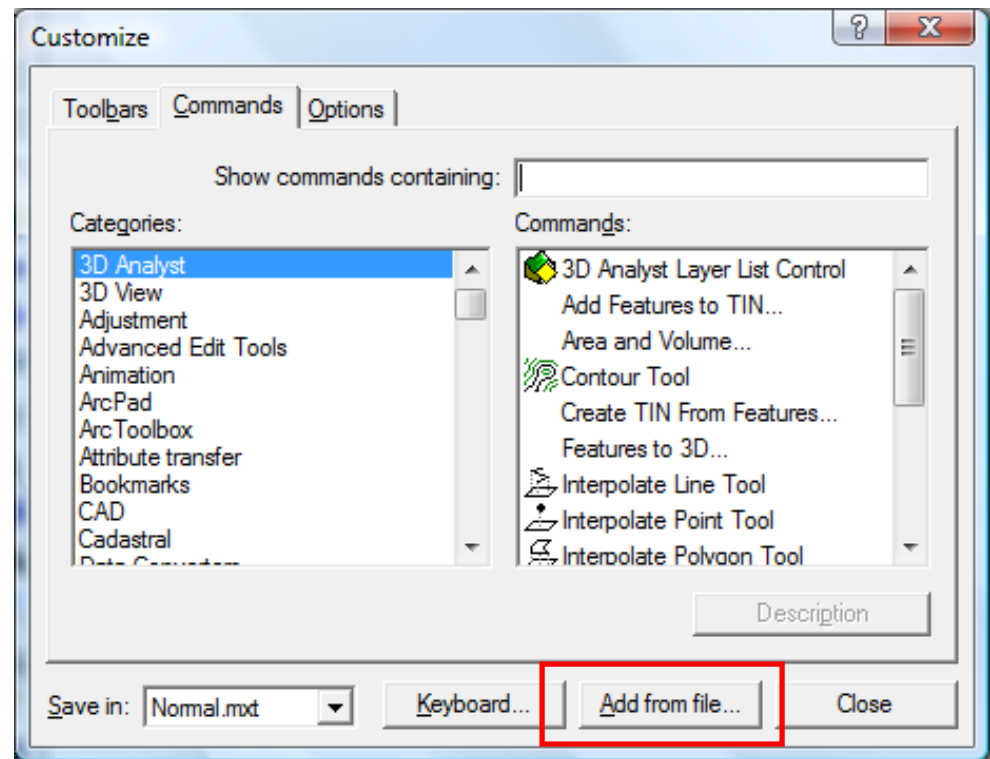
Using a DLL:

DLL: Dynamic Link Library

- A type of file that stores pre-packaged code to be used by multiple programs/users.

To Access:

1. Main Menu
 - Tools
 - Customize
2. Click “Add from file...”
3. Navigate to the file (the dll) containing the custom code and click OK.
4. Add the custom toolbar or tool.

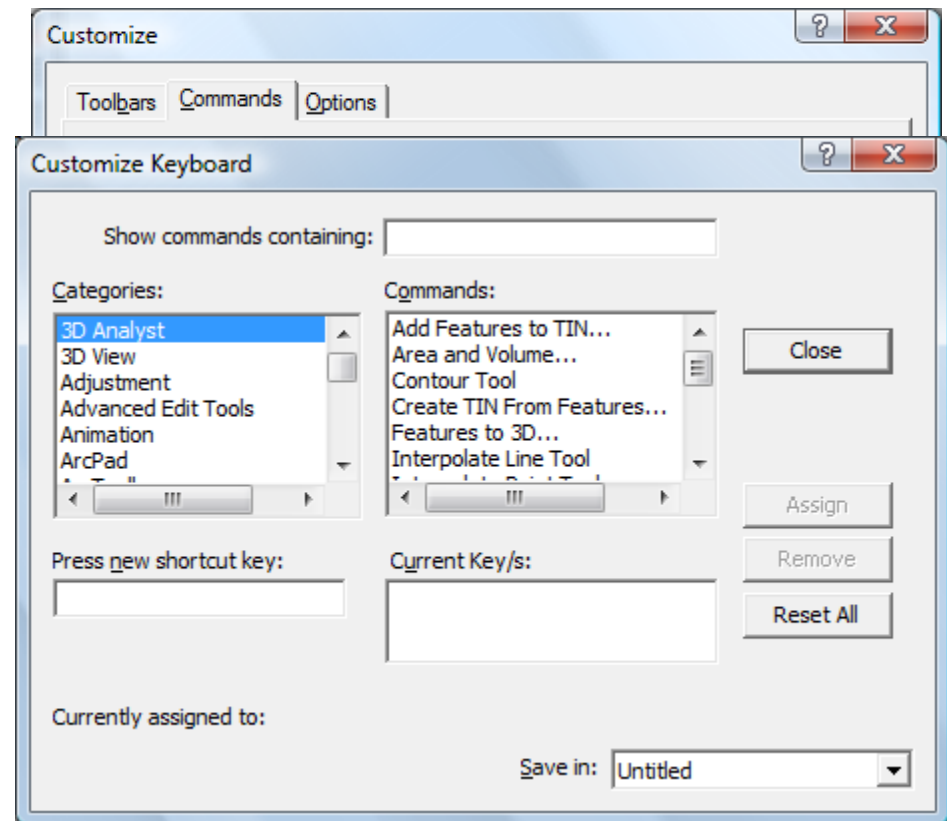


Keyboard Shortcuts:

Why: To produce shortcut keys for tools/buttons you use often.

How:

1. Main Menu
→Tools
→Customize
2. Click “Keyboard...”
3. Find the button/tool you wish to create a shortcut for.
4. Press the shortcut key and make sure it is NOT assigned to another button/tool.
5. If not, then click “Assign”.





Demonstration

1. Add new toolbars
2. Add new tools/buttons
3. Save the customizations
4. Add a DLL
5. Add a keyboard shortcut

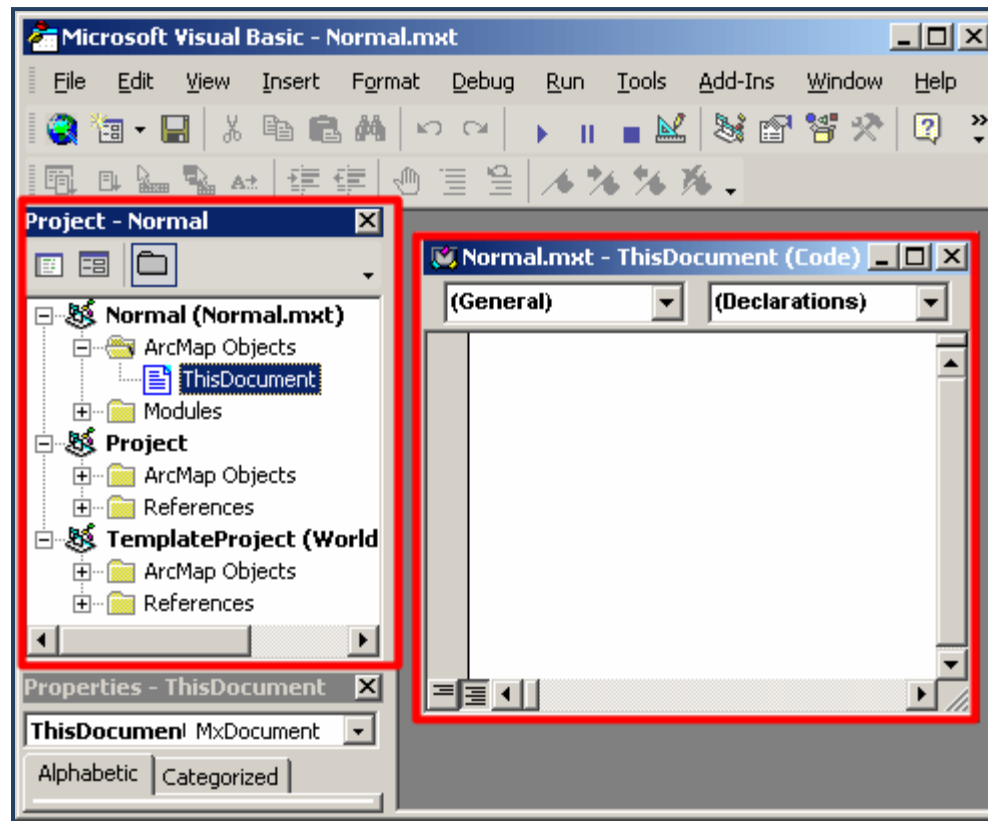
Next: Let's add some new functionality...

The Programming Environment:

The Project Explorer works like a file manager that organizes and saves your customizations.

Visual Basic Editor
(open from ArcMap or ArcCatalog)

The code window holds your sample code.



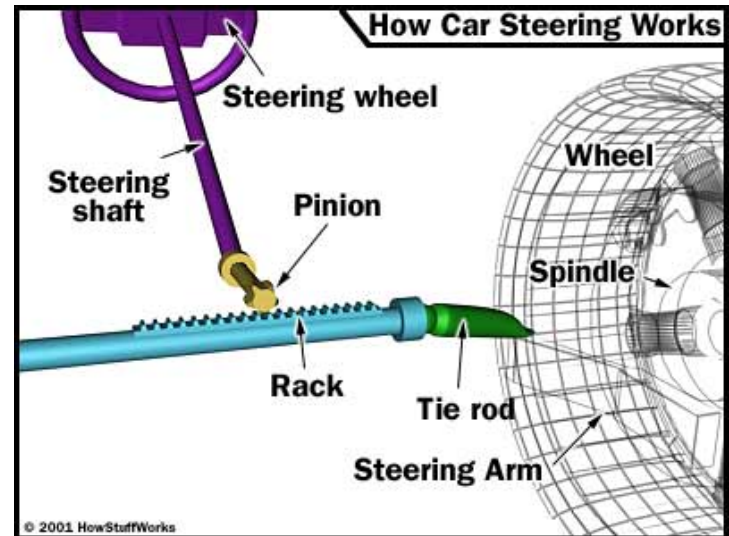
ArcGIS comes with a programming language: Visual Basic for Applications (VBA)

Objects, Events, and Procedures:

Objects are things we can recognize. (A *zoom* tool)

Events are what objects respond to. (A *click* event)

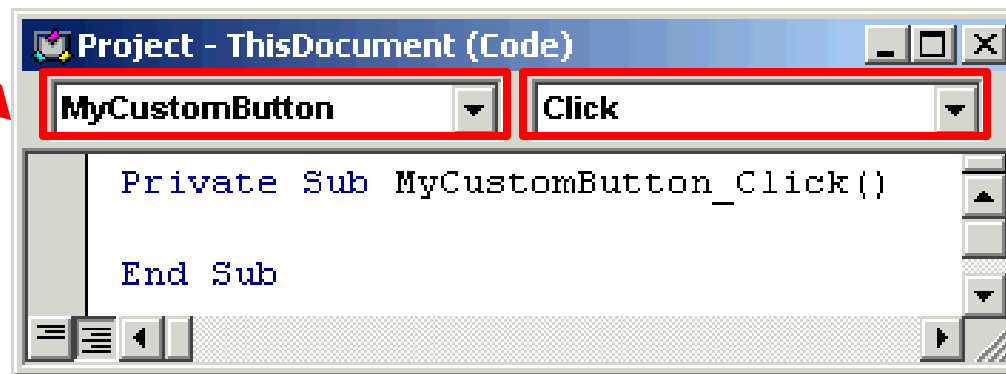
Procedures are instructions that tell an object how to respond to an event. (The map zooms in 2 x's)



Making Objects, Events, and Procedures Work Together :

Object drop down list

Procedure drop down list



The process of associating code to specific objects and events allows you to add new functionality to ArcGIS.

Working with UIControls:

There are four types of UIControls:

- UIButtons (empty buttons)
- UITools (empty tools)
- UIEditBoxes (empty text boxes)
- UIComboBoxes (empty combo boxes)



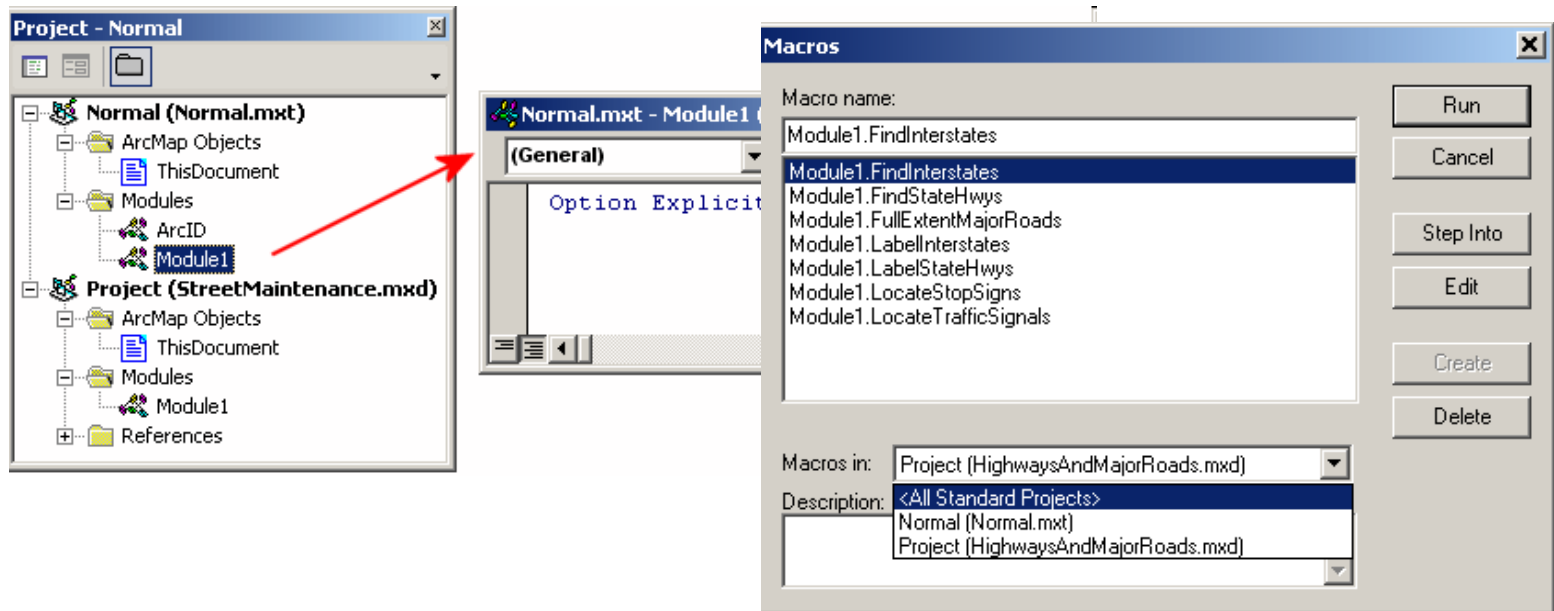
Steps in Creating New Functionality:

1. Identify the goal
2. Create a new UI Control
3. Find (or write) code that does the task you need performed
4. Associate this code to the UIControl in the Visual Basic Editor
5. Voila!

Macros:

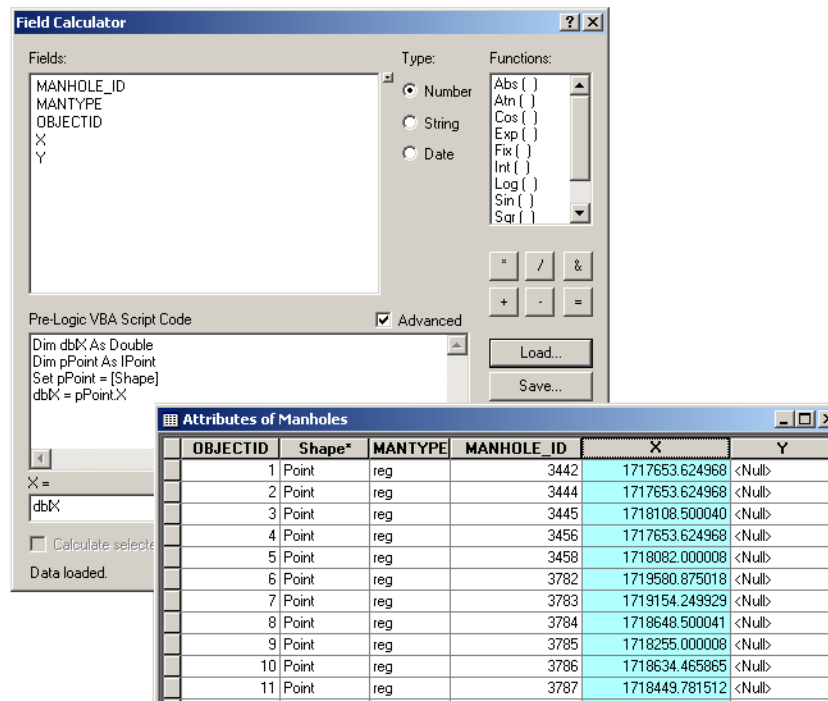
What are they?

- Type of VBA code used to add new functionality to ArcMap.
- Do not have to be associated with a UIContol (button or tool)
- The code is automatically stored in a *Module* code window that resides in a *Modules* folder.



Using Code in the Field Calculator:

- Use sample code in the field calculator to quickly perform advanced calculations.
- Ex. Calculate centroids for a polygon.
- Enter the code directly
OR
- Load an existing calculation (.cal file)



Developer Resources:

ESRI Resource Center: <http://resources.esri.com/arcgisdesktop/>

Sample Code:

http://resources.esri.com/help/9.3/arcgisdesktop/com/vba_start.htm

<http://arcscripts.esri.com/>

ESRI Developer Network:

<http://edn.esri.com/>

Forums and Blogs:

<http://support.esri.com/index.cfm?fa=forums.gateway>

Specific code (especially for calculations):

<http://www.ian-ko.com/>