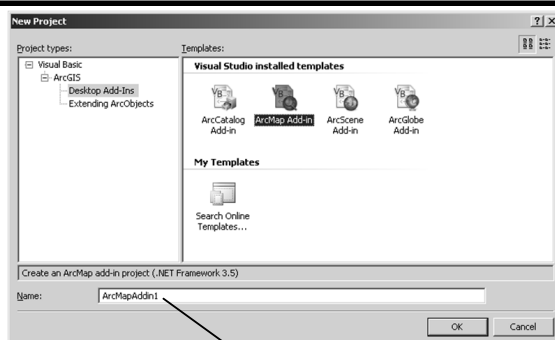


- * Lab 1 discussion
- * ArcGIS Add-in controls
- * VB .NET User Controls

GEOG 4/590: GIS Programming

Lab 1: Names



- File > New Project...

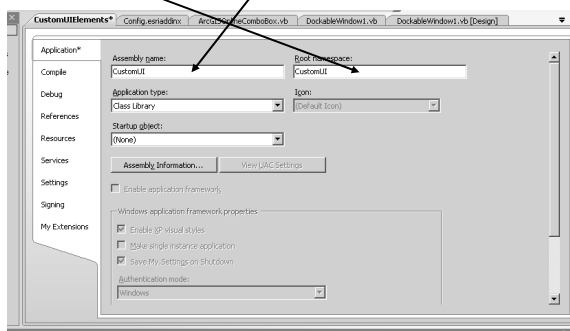
- File > Save All



Lab 1: Names (cont.)

```
<AddIn language="CLR" library="CustomUIElements.dll"
namespace="CustomUIElements">
```

- Project > Properties



Lab 1: Toolbar items

This:

```
<Item refID="CustomUIElements_ZoomToLayerButton" />
<ComboBox refID="CustomUIElements_ArcGISOnlineComb" />
<Item refID="esriArcMapUI.ZoomInFixedCommand" />
<Item refID="E370A1CD-4CD6-11D2-AAA8-000000000000" />
```

Works the same as this:

```
<Button refID="CustomUIElements_ZoomToLayerButton" />
<ComboBox refID="CustomUIElements_ArcGISOnlineComb" />
<Tool refID="esriArcMapUI.ZoomInFixedCommand" />
<Button refID="E370A1CD-4CD6-11D2-AAA8-000000000000" />
```

Lab 1: Invalid xml file?

- “The file content is an invalid ESRI ArcGIS Add-in configuration xml”
- Disregard for now if there are no other error messages

PROJECTNAME.vbproj.user file

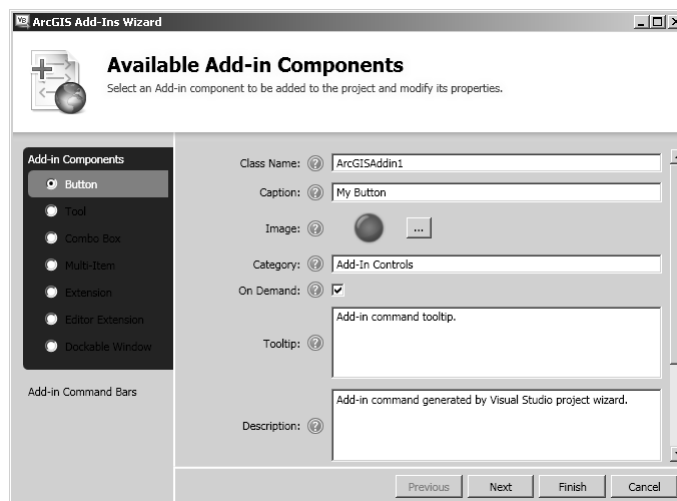
```
<Project xmlns="http://schemas.microsoft.com/developer/msbuild/2003">
  <PropertyGroup Condition=" '$(Configuration)|$(Platform)' == 'Debug|AnyCPU' ">
    <StartAction>Program</StartAction>
    <StartProgram>D:\Program Files\ArcGIS\Desktop10.0\Bin\ArcMap.exe</StartProgram>

    <StartWorkingDirectory>E:\project_work\ShorelineAddin\ShorelineAddin\bin\Debug</StartWorkingDirectory>
  </PropertyGroup>
  <PropertyGroup Condition=" '$(Configuration)|$(Platform)' == 'Release|AnyCPU' ">
    <StartAction>Program</StartAction>
    <StartProgram>D:\Program Files\ArcGIS\Desktop10.0\Bin\ArcMap.exe</StartProgram>

    <StartWorkingDirectory>E:\project_work\ShorelineAddin\ShorelineAddin\bin\Debug</StartWorkingDirectory>
  </PropertyGroup>
  <PropertyGroup>
    <ProjectView>ShowAllFiles</ProjectView>
  </PropertyGroup>
</Project>
```

6

Add-in components



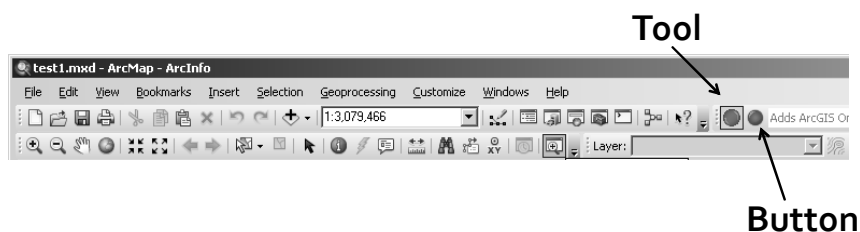
7

Buttons and Tools

- Wizard generates a class that extends ESRI Button or Tool class
- Developers can add to toolbars, menus, or tool palettes in Config.esriaddinx
- Users can add to their toolbars through Customize... dialog
- No default action but...
 - Button: write code for onClick() Sub
 - Tool: write code for onMouseDown(), onMouseUp() Sub

8

Button or Tool ?



- Button and tool images are packaged with the add-in
- Tools stay active until a different tool is selected
- Buttons trigger single actions

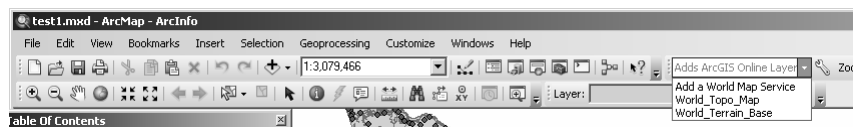
9

ComboBox

- Wizard generates a class that extends ESRI ComboBox class
- Contains a drop-down list optionally headed by an editable field
- Can be added to toolbars
- Example: Write code to add Items to the ComboBox in the New() sub
- Example: Write code to respond to user selection in the OnSelChange() sub

10

Editable combo box



Combo Box

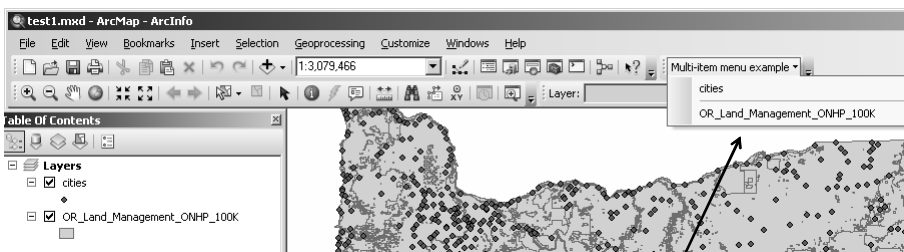
11

Multi-Item

- Wizard generates a class that extends ESRI Multitem class
- Contains a drop-down list of menu items; May be dynamically built
- Linked to a Menu in the Config.esriaddin file; cannot be accessed outside a Menu
- Example: Write code to generate list in the OnPopup() sub; Updated on every access
- Example: Write code for the OnClick() sub

12

Multi-Item menu



Multi-item menu

- Note that the items on the menu are dynamically derived from the layers present on the map

13

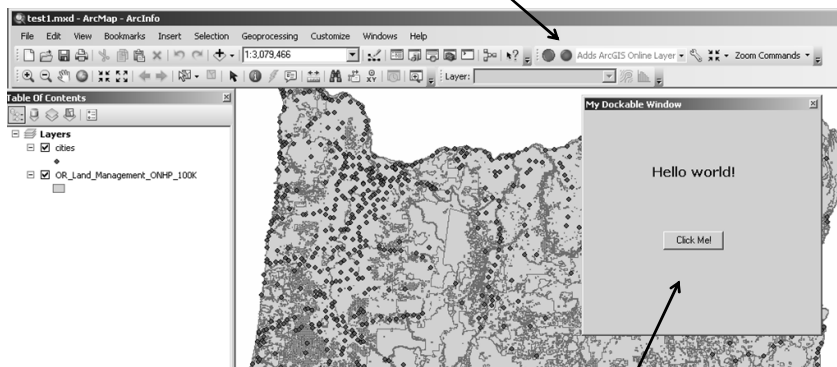
Dockable window

- Wizard generates a class that extends ESRI DockableWindow class; Customize design and behavior
- Toggle display with a combo box, menu item, or button
- Contains set of controls to display/gather user information
- Example: Write code for the onClick() sub of button on the form to process user-supplied data

14

Dockable window example

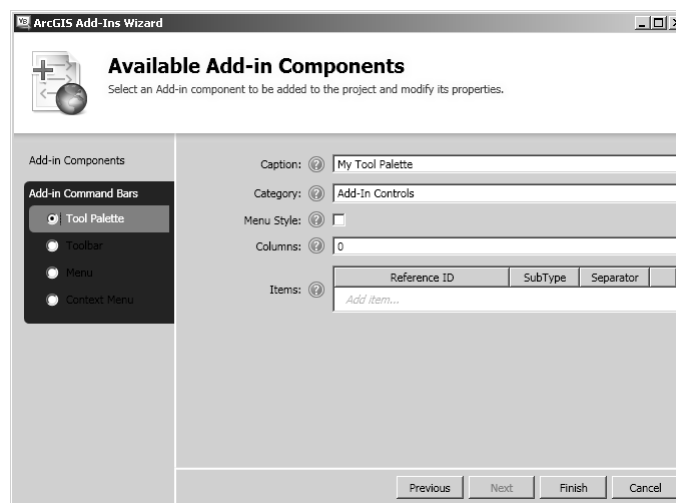
button to open/close window



dockable window

15

Add-in command bars



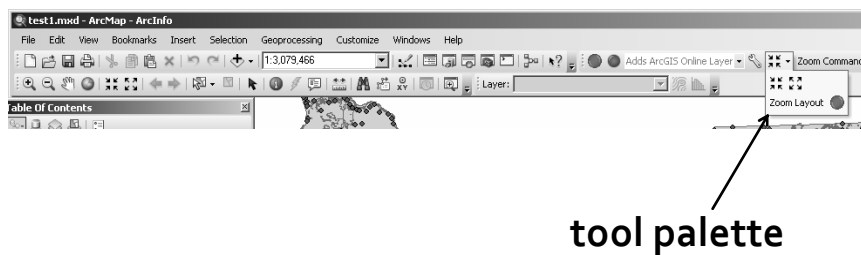
16

Tool palette

- A compact way to group sets of tools or buttons. Column attribute determines width
- Grouping may include add-in tools that you create or built-in ArcMap tools
- Tool palettes are added to toolbars

17

Tool palette example



18

Toolbar



- May contain buttons, tools, menus, tool palettes, and combo boxes
- Can include commands that you create or built-in ArcMap tools
- May be configured to pop-up automatically when the add-in is added to ArcMap
- Users enable toolbars in ArcMap through Customize... dialog

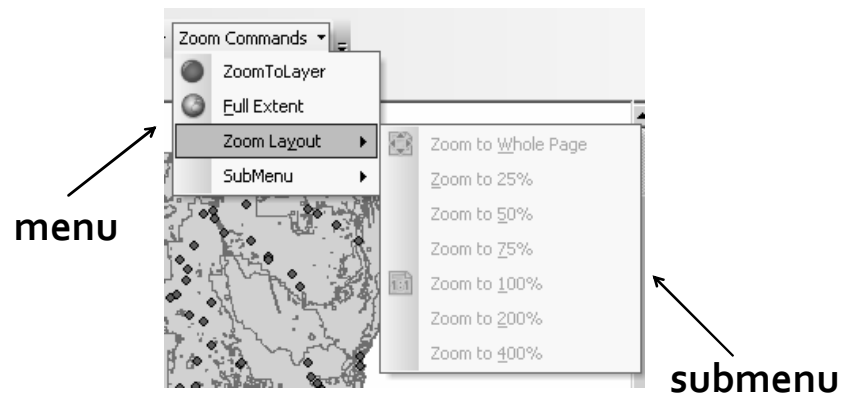
19

Menu

- Drop-down list comprised of multi-items, buttons, and submenus
- Menus can access commands that you create or built-in ArcMap tools
- Menus are usually added to a toolbar but may appear independently
- A multi-item is added to a menu and a menu is added to a toolbar

20

Menu example



21

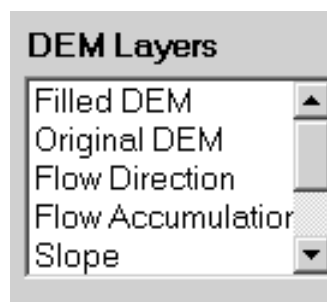
Customizing the DockableWindow

- Contains a UserControl class
- Looks like a form; Add Windows.Forms controls to this container
- Labels, textboxes, buttons...

22

ListBox vs. ComboBox

- ListBox
 - Display multiple lines
 - Allow multi-select
 - Not editable
- ComboBox
 - Display single line only
 - Single selection
 - May be editable



23

Grouping controls

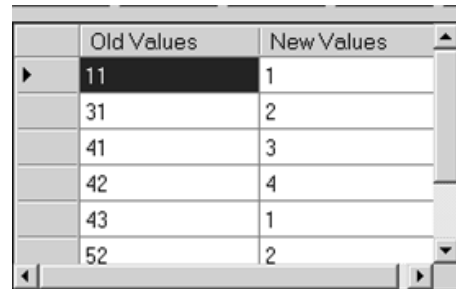
- GroupBoxes and Panels are used to group controls
- Radio buttons on a group control are mutually exclusive
- Properties of controls on a group control may be updated simultaneously (enabled, visible)
- Panels may be invisible to the end user

Apply rules on all existing zones
 Apply rules on selected zones

24

DataGridView

- Variable number of columns, rows
- Populate programmatically or bind to database or object
- Can accept user input



	Old Values	New Values
▶	11	1
	31	2
	41	3
	42	4
	43	1
	52	2

25

Demo: Adding controls

- Preview: associating controls with code

26

Next steps

- Continue work on Lab 1
- Practice working with Add-In components (tool palette, sub-menu)
- Begin work on the GUI for Lab 2