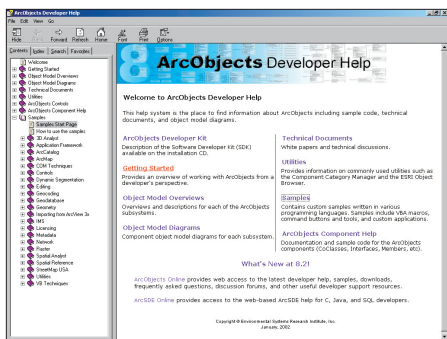# Program ArcGIS
Without Writing a Line of Code!

By Stephen Lead, Technical Support Specialist, ESRI Australia Pty. Ltd.

The ArcObjects Developers (AODev) Help, which comes on the ArcGIS installation CD–ROMs, contains a treasure trove of useful code samples. With these code samples, you can customize ArcGIS Desktop applications to enhance existing functionality or provide additional capabilities. This article provides a starting place for customizing ArcGIS using these samples.

Getting Started

To open the AODev Help, choose Start > Programs > ArcGIS > ArcObjects Developer Help. If the AODev Help is not available, install it from the ArcGIS Desktop installation CD–ROM. The front page of the AODev Help contains detailed information, including tips on how to get started writing code, object model diagrams, technical documents, and other utilities.
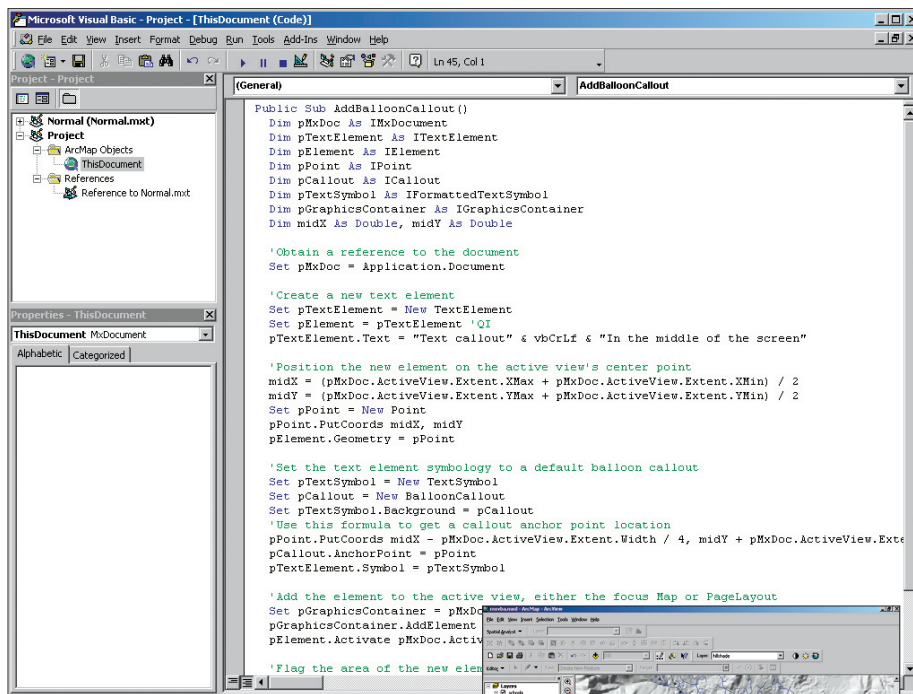
Samples in AODev Help are categorized under broad subheadings such as ArcMap, ArcCatalog, and Editing. The left pane of the AODev Help front page also contains Contents, Index, and Search tabs for locating relevant samples (i.e., a search on annotation will return the sample code applicable to annotation management in ArcGIS). The code samples provided fall into two categories—tips and tools.

ArcObjects Developers Help, included with ArcGIS, contains a treasure trove of useful code samples.

Using Tip Code Samples

Tips are simple code fragments that can be pasted into the Visual Basic for Applications (VBA) editor to provide specific functionality. For example, the Add Balloon Callout tip adds a balloon callout text element in the center of the current active view extent. This tip can be found under Samples > ArcMap.

Modifications to the section under 'Create a new text element in the Add Balloon Callout code sample allows you to change the text in the balloon.

1. To use this sample, open the AODev Help, choose Samples > ArcMap > Add Balloon Callout and select and copy the code for Add Balloon Callout onto the clipboard.

2. Start a new ArcMap session and open the VBA editor by choosing Tools > Macros > Visual Basic Editor. The Project window, located on the left-hand side of the VBA editor, tells ArcMap where to save customizations. Changes made to the Normal.mxt are available in any new ArcMap session, while changes made to the Project section will only be available in the current map document. Expand the Project and ArcMap Objects elements and double-click on the ThisDocument object to open a code window. Paste the Add Balloon Callout code into this window. This will create a new macro named AddBalloonCallout.

3. In the VBA Editor, locate the line

```
pTextElement.Text = "Text callout" &
vbCrLf & "In the middle of the screen"
```

and modify the text element string containing the balloon callout message to say something more interesting. This code sets the contents of

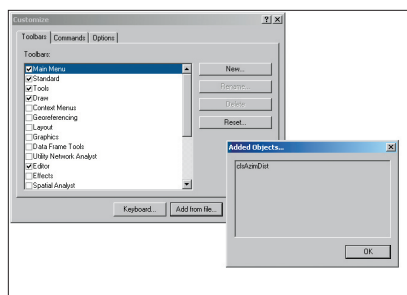the textbox and `vbCrLf` is the Visual Basic command for a new line.

4. Switch back to ArcMap and run the macro by choosing Tools > Macros > Macros > AddBalloonCallout or use Alt-F8 and choose the AddBalloonCallout macro. Click on the Run button. The balloon callout appears in the center of the map pane.

The position of the balloon callout can be modified in a similar fashion, by changing the locations specified under the section of the code listed under the commented line
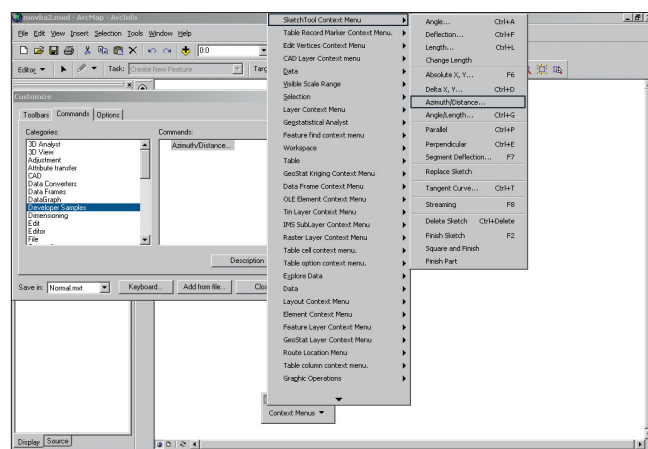
```
'Position the new element on the
active view's center point
```

Using Tool Code Samples

Tools are more robust code samples. Typically these samples have been compiled into Dynamic Link Library (DLL) files that are ready for use in ArcGIS. Tools are located in the <drive letter>:\arcgis\arcexe82\ArcObjects Developer Kit\Samples folder. If this folder

After using the Add From File button to register AzimDistance.dll, a popup dialog appears explaining that the new class, clsAzimDist, has been added to the component categories of ArcGIS.

Dragging the Azimuth/Distance command from the Commands pane section to the Sketch Tool Context Menu.

is not on your computer, run the ArcObjects Developer Kit setup from the ArcGIS Desktop installation CD–ROM. The "How to Use Samples" page under the Samples section of AODev Help gives general directions for adding and removing tools. Read this page before using any of the sample tools. Additional information specific to adding an individual tool is available from the sample page for that tool.

The Azimuth–Distance tool sample page is located in the AODev Help under Samples > Editing > Sketch Tool Context Menu > Azimuth Distance Context Menu Item. The standard ArcMap sketch tool context menu contains an option to enter angles counterclockwise from the east while editing data. This sample tool lets the user digitize new features using a known Azimuth angle.

1. Open Windows Explorer and go to the directory where ArcGIS is installed. Drill down through the subdirectories (<drive letter>: \arcgis\arcexe82\ArcObjects Developer Kit\ Samples\Editing\Sketch Tool Context Menu\ Azimuth-Distance) to locate AzimDistance.dll.
2. Switch back to ArcMap and choose Tools > Customize from the main menu. Click on the Add From File button, navigate the path shown in the previous step, and select AzimDistance.dll. A popup dialog appears explaining that a new class, clsAzimDist, has been added to the component categories of ArcGIS. Do not close the Customize dialog box.
3. This new tool must now be added to the relevant context menu. Click on the Toolbars tab of the Customize dialog box and check the box next to Context Menus. The Context Menus toolbar appears. Click on the Context Menus menu. Scroll through the context menus in ArcMap and select Sketch Tool Context Menu.
4. In the Customize dialog box, click on the Commands tab. In the left pane under Categories, select Developer Samples. Azimuth/ Distance appears in the right pane under Commands. Drag the Azimuth/Distance command to the Sketch Tool Context Menu and drop it between the Delta X,Y… and Angle/Length commands. Close the Customize dialog.

Context menu commands are only available under certain circumstances. Sketch

Tool Context menu commands are available only while editing a feature class in ArcMap. To test the Azimuth–Distance tool, add a polyline or polygon feature class to ArcMap and start editing. Use the Create New Feature task and click once to digitize the start point. Move the mouse slightly, then right-click to access the Sketch Tool Context menu. Note that the Azimuth/Distance option has been added to this context menu. Try adding a new vertex using a specified Azimuth/Distance. Contrast this with the standard Angle/Length menu option.

AODev Help sample tools provide usable code that can be installed by the user with minimal effort. If necessary, the user can modify the code provided in the associated Visual Basic project supplied with the tool and recompile it into a new DLL file.

For More Samples and Information
The AODev Help is also maintained at the ESRI ArcOnline Web site (**http:// arconline.esri.com/arcobjectsonline/**). This site is updated regularly by ESRI with additional samples. Check the ArcObjects Online page regularly to ensure you are using the latest available code samples. Samples can be

downloaded and stored locally in the appropriate AODev Help subdirectory.

For more information, please contact

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The new option, Azimuth/Distance, is added to the Sketch Tool Context menu.