



Esri International User Conference | San Diego, CA
Technical Workshops | July 13th 2011

Building Add-ins for ArcGIS Desktop in .NET

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Feedback link: www.esri.com/sessionevals

ArcGIS Desktop Add-Ins

*A new way to customize and extend
ArcGIS Desktop applications.*

- Easier to build
- Easy to share
- More secure



.NET Development Environments for Add-Ins

- **Visual Studio 2008 / 2010**
- **Visual C# 2008 / 2010 Express Edition**
- **Visual Basic 2008 / 2010 Express Edition**

Supports .NET 3.5 & 4.0

Coding Add-Ins in .NET

- **Add-In Behavior coded using**
 - Visual Studio IDE Wizards/Templates
 - Base classes for each Add-In type
 - Access to full ArcObjects API + programming environment
- **Help, Documentation and Samples**

Coding Add-Ins – An Add-In Button

```
public class SimpleButton : Button
{
    protected override void OnClick()
    {
        MessageBox.Show("Hello World");
    }
}
```

Coding Add-Ins – A managed COM Button

```
namespace ArcMapClassLibrary1
{
    /// <summary>
    /// Summary description for Command1.
    /// </summary>
    [Guid("dfab35ef-96f7-456b-9162-42d36f7a9e57")]
    [ClassInterface(ClassInterfaceType.None)]
    [ProgId("ArcMapClassLibrary1.Command1")]
    public sealed class Command1 : BaseCommand
    {
        #region COM Registration Function(s)
        [ComRegisterFunction()]
        [ComVisible(false)]
        static void RegisterFunction(Type registerType)
        {
            // Required for ArcGIS Component Category Registrar support
            ArcGISCategoryRegistration(registerType);

            //
            // TODO: Add any COM registration code here
            //
        }

        [ComUnregisterFunction()]
        [ComVisible(false)]
        static void UnregisterFunction(Type registerType)
        {
            // Required for ArcGIS Component Category Registrar support
            ArcGISCategoryUnregistration(registerType);

            //
            // TODO: Add any COM unregistration code here
            //
        }

        #region ArcGIS Component Category Registrar generated code
        /// <summary>
        /// Required method for ArcGIS Component Category registration -
        /// Do not modify the contents of this method with the code editor.
        /// </summary>
        private static void ArcGISCategoryRegistration(Type registerType)
```

Coding Differences

- **Declarative aspects subtracted from code**
- **Hook differences**
- **Inter-component communication differences**

Coding Differences – Using the hook object



Add-Ins

```
// Call the method directly from ThisApplication...  
ArcMap.ThisApplication.Export();
```


Coding Differences – Custom methods

```
// Add a public method to your class.  
public class ACMEExt: Extension  
{  
    public Extension1()  
    {  
    }  
  
    public void Foo()  
    {  
        // Custom method implementation  
    }  
}
```



Add-Ins

Coding Differences – Finding an extension

```
// Finding the extension... Add-In style.  
protected override void OnClick()  
{  
    // Find extension and call custom method directly..  
    AddIn.FromID<ACMEEExt>(ThisAddIn.IDs.ACMEEExt).Foo();  
}
```



Add-Ins

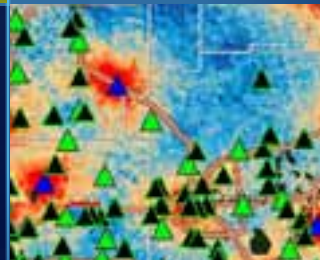
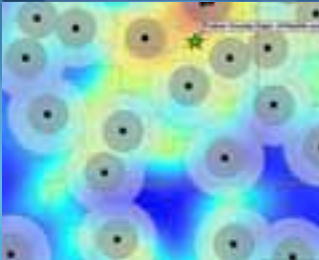
Building .NET 4 Add-Ins

- **ESRI doesn't install .NET 4 at ArcGIS 10.0**
 - Target users must have .NET 4 installed.
- **Modify project's Target Framework from 3.5 to 4.0**
- **Debugging**
 - 3.5 and 4.0 managed debuggers not SxS
 - Modify/Remove SupportedRuntime in *.exe.config

DeKalb County Board

Fulton County Dept. of Health and Wellness/District 3, Unit 2, 04

Demo - Building an Add-In in .NET



Coming in ArcGIS 10.1

- **IDE and Authoring Improvements**
- **Extended Help Capabilities**
 - CHM, WEB help, PDF, etc.
- **New Types**
 - Editor Construction Tools
 - Sever Object Extensions (SOEs)
- **Python Add-Ins**

Questions and Answers

External References

- Desktop Add-In Overview

- http://help.arcgis.com/en/sdk/10.0/arcobjects_net/componenthelp/index.html#/Overview/001v00000266000000/

- W3C XML Digital Signatures

- <http://www.w3.org/Signature/>

- ISO/IEC 29500-2:2008 Open Packaging Conventions

- http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=51459

- *ITU X.509 Certificates*

- <http://www.itu.int/rec/T-REC-X.509/en>

- ISO Language Codes

- http://www.loc.gov/standards/iso639-2/php/code_list.php



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