

Windows Shell Namespace Extensions

Extend Windows Explorer with IShellFolder2, IEnumIDList, IContextMenu3, IDataObject

On the Windows Desktop, [shell extensions](#) enable independent software vendors to extend the Windows Shell and its namespace with their own functionality. The Windows shell namespace is an extensible hierarchical collection of naming and other info related to directories, files, printers and networks. The Windows Shell, including the Desktop, File Explorer and the common file open/save dialogs used by most apps, provides extensible graphical browsers / editors for the shell namespace. All users of Windows are familiar with the File Explorer tool, which lets them browse the content of the hard disk/LAN/Control Panel.

There are a number of custom sources of hierarchical data that would nicely extend the “system” namespace. By programmatically extending File Explorer we may provide integrated browsing capabilities for these.

Shell namespace extensions are an ideal solution where there is a requirement to list items and attributes in a hierarchical manner, or when data files should be managed on a medium other than file systems (e.g. in a database, cloud backup or on remote devices). Other forms of shell extensions provide access to extended functionality such as context menus or property pages.

Contents of One-Day Training Course	
<p>Target Audience This training course targets experienced C++ and COM developers who want to create shell namespace extensions.</p> <p>Prerequisites Detailed experience of C++ and COM development.</p> <p>(Note: Shell extensions should not be written in .NET).</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center;">Shell Namespace</p> <p>A PC's rooted shell namespace is a hierarchical collection of:</p> <ul style="list-style-type: none"> • System components such as file systems, printers, the control panel • Optional system extensions • Third-party namespace extensions <p style="text-align: center;">COM DLL Refresher</p> <p>Quick review and comparison of how to create COM DLLs in C++ using a variety of techniques</p> <p style="text-align: center;">Explorer & Common File Dialogs Architecture</p> <p>System tools for browsing the shell namespace. Writing your own browsers</p> <p>Examination of how a shell namespace extension may be structured. Registry settings. Creating a simple non-folding example. The IShellFolder2 interface</p> <p style="text-align: center;">Folding</p> <p>Develop single level folding example Item ID Lists & the IEnumIDList interface Cloning and non-cloning varieties of multi-level folding Node provider architecture Important registry settings</p> <p style="text-align: center;">GUI</p> <p>Extending Explorer's toolbar, menubar and status bar. The IExtractIcon interface Examination of how a shell namespace extension should be structured Develop single level folding example</p> </div> <div style="width: 48%;"> <p style="text-align: center;">Data Transfer</p> <p>How data transfer works The IDataObject, IDropSource and IDropTarget interfaces</p> <p style="text-align: center;">Data Flow</p> <p>The crux of the problem is how to enable data to flow to all parts of the code in a namespace extension which requires it -</p> <ul style="list-style-type: none"> • IEnumIDList for foldering • IDataObject for drag & drop and for the common file dialogs <p style="text-align: center;">Emulating File Systems</p> <p>To a certain extent, though not fully, a namespace extension may emulate a file system We examine what does and does not work Importance of SFGAO_FILESYSTEM attr Example of editing files on a remote FTP server Special requirements for Microsoft Office file dialogs</p> <p style="text-align: center;">Other Types of Shell Extensions</p> <p>Context menu handler</p> <ul style="list-style-type: none"> • Drag and Drop Handler • Icon Handler • Property Sheet <p>Designing a custom context menu handler</p> <p style="text-align: center;">Project</p> <p>Full sample project showing how to create all parts of a custom Windows Shell namespace extension; Architecture deep dive</p> </div> </div>