

Component Sets

Written by Hamed Iravanchi

Monday, 04 October 2010 14:09 - Last Updated Friday, 22 October 2010 01:38

This sample demonstrates Composer's ability to have multiple components registered with the same contract, and retrieve all of them at once as a set of components (Using GetAllComponent<T> method).

Project name: "N.ComponentSets"

For information on how to get the code, and run the sample, please see [About Basic Samples](#) .

Description

This sample is a command-line tool, that supports an extensible set of commands. When run, it is supposed to print a list of available commands on the Console, and let's user choose the command. Once the user enters the command name, the tool should run the specified command, and repeat the same process from the beginning, until the user has issued the "exit" command. For example, the "dir" command will list the files in the root of C: drive.

For the set of commands to be extensible, a contract named ICommandPlugin is defined. Implementation of each command should be a component that provides this contract. ICommandPlugin contains the following elements:

- Command property (of type string) - the command acronym, like "dir"
- Title property (of type string) - the single-sentence description of the command, used when printing the list of commands on the Console.
- Execute method (void, without parameters) - called when the user enters the string returned by Command property.

The following components are present in the sample, that provide ICommandPlugin contract:

- DirectoryListingPlugin - List the files and folders in the C: drive
- DriveListingPlugin - List the available system drives
- OperatingSystemPlugin - Prints the current operating system name and version number
- WorkingDirectoryPlugin - Prints the current working directory on the console

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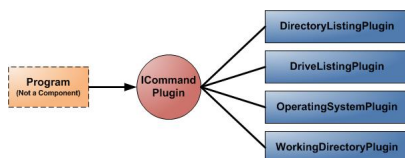
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In the main method, the whole assembly is registered into the context using `RegisterAssembly` method, causing all above components to be registered automatically. Then, `context.GetAllComponents<ICommandPlugin>()` is called, and causes Composer to instantiate and return a list containing all above components.

In a while loop, the user is prompted with the list of commands, and the chosen command is looked up in the list and run.

There is no direct reference to the components in the Main method. Adding another command is as simple as creating a new component that provides the same `ICommandPlugin` contract in the project. Composer will automatically pick it up, and add it to the list of commands.

Dependency Diagram



Sample Output

Type any of the commands to proceed:

[exit] - Quit the application

[pwd] - Prints the current working directory on the console

[dir] - List the files and folders in the C: drive

[os] - Prints the current operating system name and version number

[drv] - List the available system drives.

> drv

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A:
C:
D:
E:
F:
H:
V:
W:

Type any of the commands to proceed:

[exit] - Quit the application
[pwd] - Prints the current working directory on the console
[dir] - List the files and folders in the C: drive
[os] - Prints the current operating system name and version number
[drv] - List the available system drives.
> pwd

D:TFSScodeplexcomposerMainSamplesBasicN.ComponentSetsbinDebug

Type any of the commands to proceed:

[exit] - Quit the application
[pwd] - Prints the current working directory on the console
[dir] - List the files and folders in the C: drive
[os] - Prints the current operating system name and version number
[drv] - List the available system drives.
> os

Microsoft Windows NT 6.1.7600.0

Type any of the commands to proceed:

[exit] - Quit the application
[pwd] - Prints the current working directory on the console
[dir] - List the files and folders in the C: drive
[os] - Prints the current operating system name and version number
[drv] - List the available system drives.
> dir

<dir> C:\$Recycle.Bin
<dir> C:Boot
<dir> C:Config.Msi

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```
<dir> C:Documents and Settings
<dir> C:Downloads
<dir> C:inetpub
<dir> C:MSOCache
<dir> C:PerfLogs
<dir> C:Program Files
<dir> C:Program Files (x86)
<dir> C:ProgramData
<dir> C:Recovery
<dir> C:System Volume Information
<dir> C:Users
<dir> C:Windows
<file> C:.rnd
<file> C:bootmgr
<file> C:BOOTSECT.BAK
<file> C:hiberfil.sys
<file> C:pagefile.sys
<file> C:w7ldr
```

Type any of the commands to proceed:

[exit] - Quit the application

[pwd] - Prints the current working directory on the console

[dir] - List the files and folders in the C: drive

[os] - Prints the current operating system name and version number

[drv] - List the available system drives.

> exit

Press any key to continue . . .