

# Visual Studio 2010 and .NET Framework 4 IDE Enhancements –Part1

In this article HimaBindu Vejella explains IDE enhancements in Visual Studio 2010 and .NET Framework 4.0.

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## Visual Studio 2010 and .NET Framework 4 IDE Enhancements Series

- [Part 1](#) In this article HimaBindu Vejella explains IDE enhancements in [Visual Studio 2010](#) and .NET Framework 4.0.
- [Part 2](#) In this article I am going to cover Multi [monitor](#) support, Multi targeting, Parallel [Development](#), Side by Side execution, Backward compatibility and [SqlServer](#) 2008 integration.
- [Part 3](#) In this article I am going to explain Add Reference enhancements for [developers](#), Windows 7 support for developers, Share Point 2010 enhancements , Office Business Application Support, Cloud Development, Document Map Margin and Visual Studio 2010 Tips.

## Introduction to VS2010

I have downloaded VS2010 Beta, code name "Hawaii" and I've been playing with it since October. The IDE itself has tremendous features, that I wanted to share with the community. The .NET Framework is upgraded to version 4.0 along with version 10 of the IDE.

Visual Studio IDE is an Integrated Development Environment tool that is used for developing [applications](#) using the new .NET Framework 4.0. It is compatible with the previous frameworks such as .NET Framework 3.5, .NET Framework 3.0, NET Framework 2.0. Following are some of the [applications](#) we can develop using the .NET Framework 4.0.

- Console Applications
- Windows Forms applications
- Windows Services
- WPF Browser applications

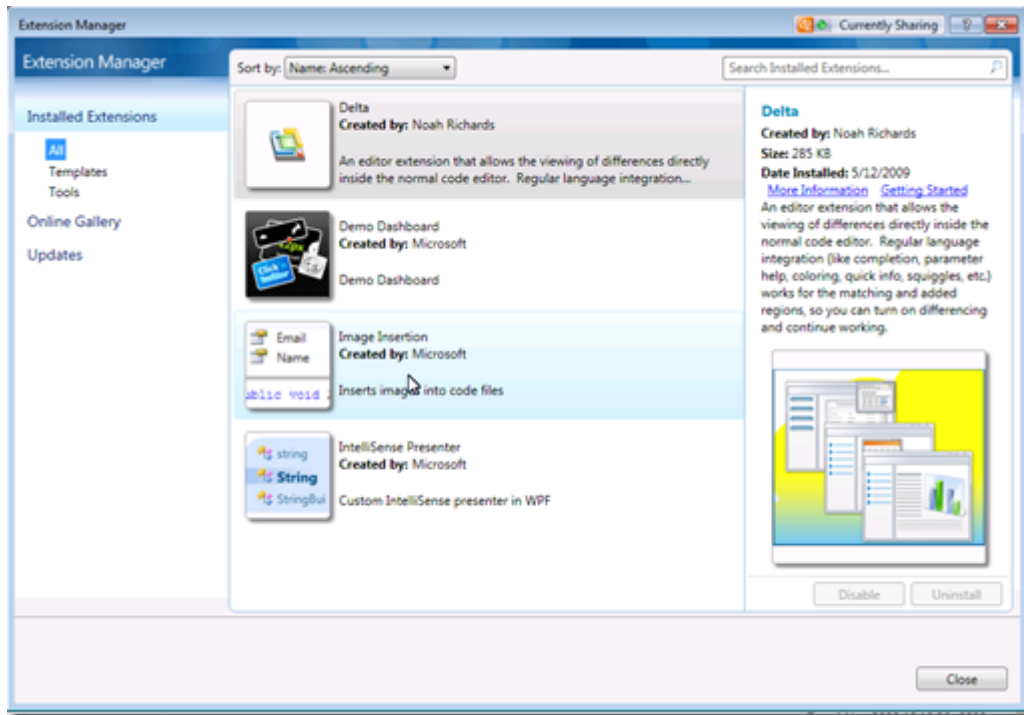
- WPF Applications
- Web Applications
- Web Services, Ajax enabled Web Services
- Dynamic Data entities Web Applications
- Dynamic data LINQ to SQL Web Applications
- Office Applications
- Reporting applications like crystal reports
- Cloud Services using Windows azure tools
- SharePoint projects, Business Data Connectivity model and workflow applications
- Sliverlight applications
- WCF Services, Ajax enabled WCF services
- Workflow console and workflow service applications
- CLR Console applications using VC++
- MFC and win32 applications
- Data Tier Applications and advanced database applications.

We can create some of the above mentioned applications like console, windows forms, and windows services etc, using previous versions of the IDE. But the advantage of using the new VS2010 IDE is that we can make use of VB 10.0 or C# 4.0 and the new IDE features. We can achieve the same results using previous versions too, but installations and patches are required for some of the applications. The effort we put and the amount **of time** that we spend is minimized in VS2010. Now everything comes built-in and all the plumbing is done by [Microsoft](#).

VS2010 supports a lot of custom templates that are available [online](#). We can download and work with them depending on requirements and flexibility. These are available under the templates section in the [Visual Studio Gallery](#).



We can go to Extension Manager and check all the installed extensions. This can be done by going to *Tools->Extension manager* to see what is available and what we have installed.



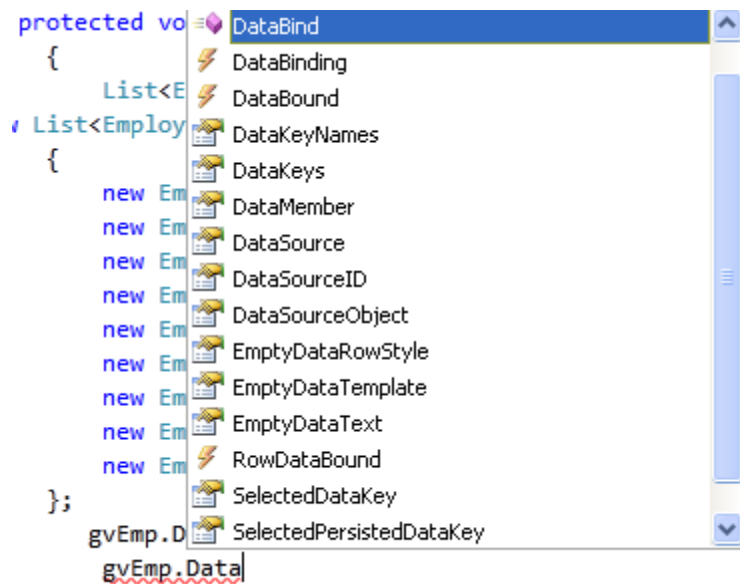
This is a useful feature for checking what extensions we installed and uninstalling them. Extension manager settings are in *Tools->Options->Environment->Extension manager*.

## Code Improvements

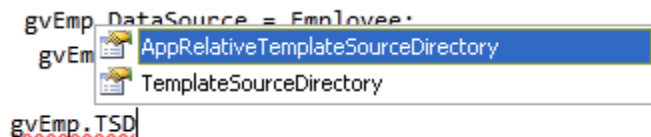
The new IDE uses [Windows](#) Presentation Foundation technology to provide integrated support and to help with the code written. The IntelliSense engine is more dynamic, sharp and reacts faster. It's responsible for the majority of the IDE features. IDE architecture is improved to fix issues in previous versions. This is a great help for the people who deal with large codebases.

These are the important changes in code improvements I'm going to explain each of them in detail.

## Code IntelliSense



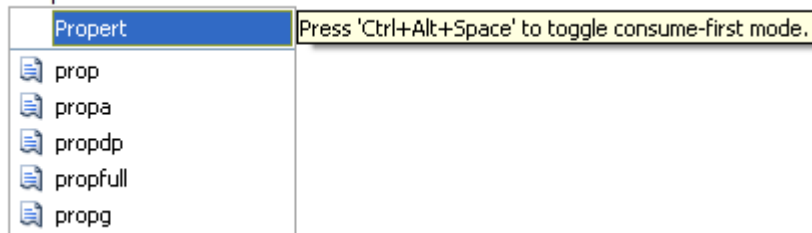
The first change we notice in the IDE is IntelliSense. VS2010 IntelliSense search now uses 'contains' as opposed to 'starts with'. When we type a particular word, it searches for the related classes, types, events, methods, properties and gets all of them. This is useful for easily searching classes, types and keywords. Pascal Casing IntelliSense, i.e. the ability to search for multi word phrases by single abbreviation, is built-in. The single word abbreviation needs to be strictly capitalized in order for the IntelliSense engine to understand that it's a Pascal Case IntelliSense.



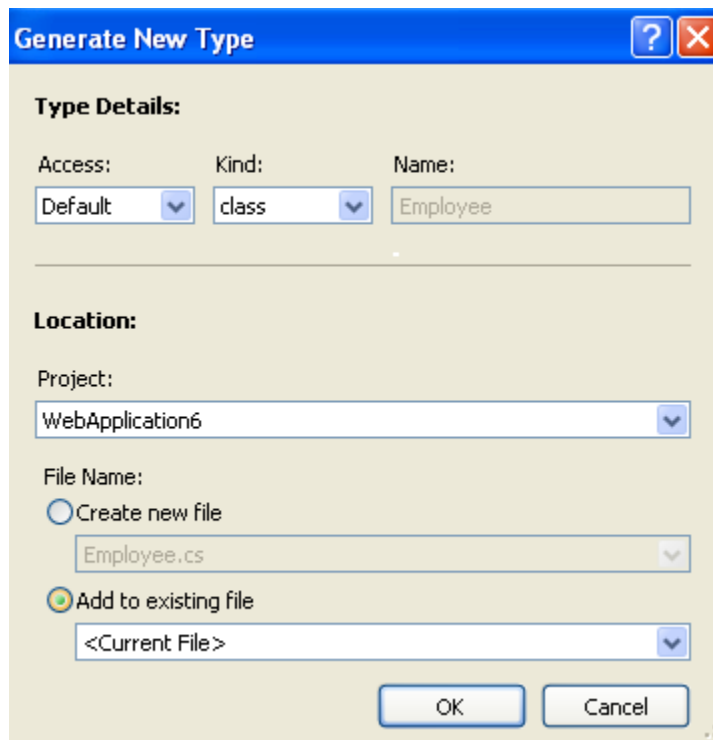
## Consume-first Development

This is the new enhancement that is only included as part of VS2010 IDE in IntelliSense functionality. This feature is really useful in test driven development (TDD) i.e. consuming API first. Instead of forcing us into a class that already exists, as opposed to VS2008, VS2010 IDE accepts what we typed when we pressed the space bar. This can be achieved with the Ctrl+Alt+Space shortcut to toggle the consume-first mode. Once this mode is turned on, it will stay until we press Ctrl+Alt+Space to open the IntelliSense window again. Code generation is also done with generate other dialogue box. The main idea is to consume classes, types, methods before the definition of a particular class, type or method. It gives us the option to generate the class. We can add a new type and specify where the class needs to be added in the project.

System.Data.Proper

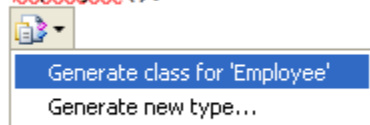


## Code Generation using Generate New Type



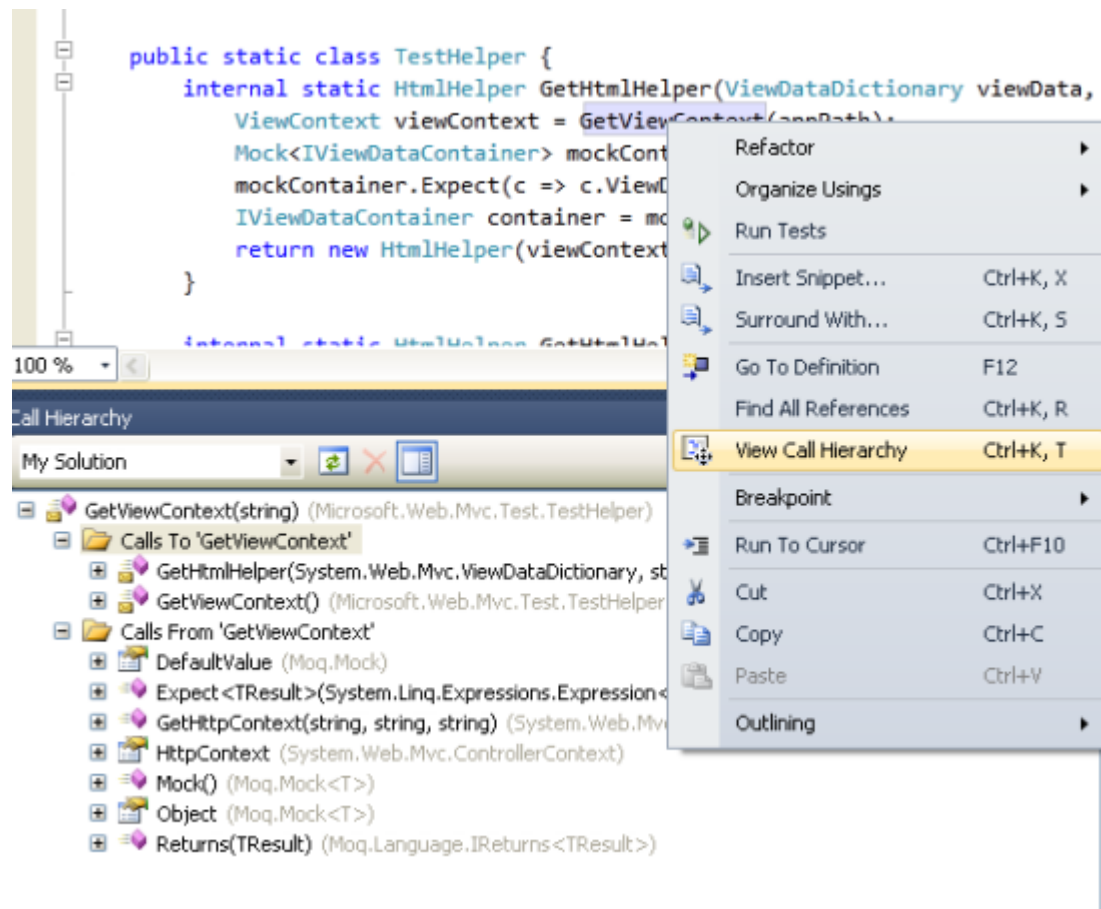
If we directly generate the class we don't know where the class will be created in our project. We can generate code using 'Generate new Type' and specify a location where code will be generated. We can specify the class/interface/struct/enum name along with access specifiers. If we have multiple projects and we want to generate code in a particular project files, this feature is really useful for developers.

```
Employee e = new Employee();
```



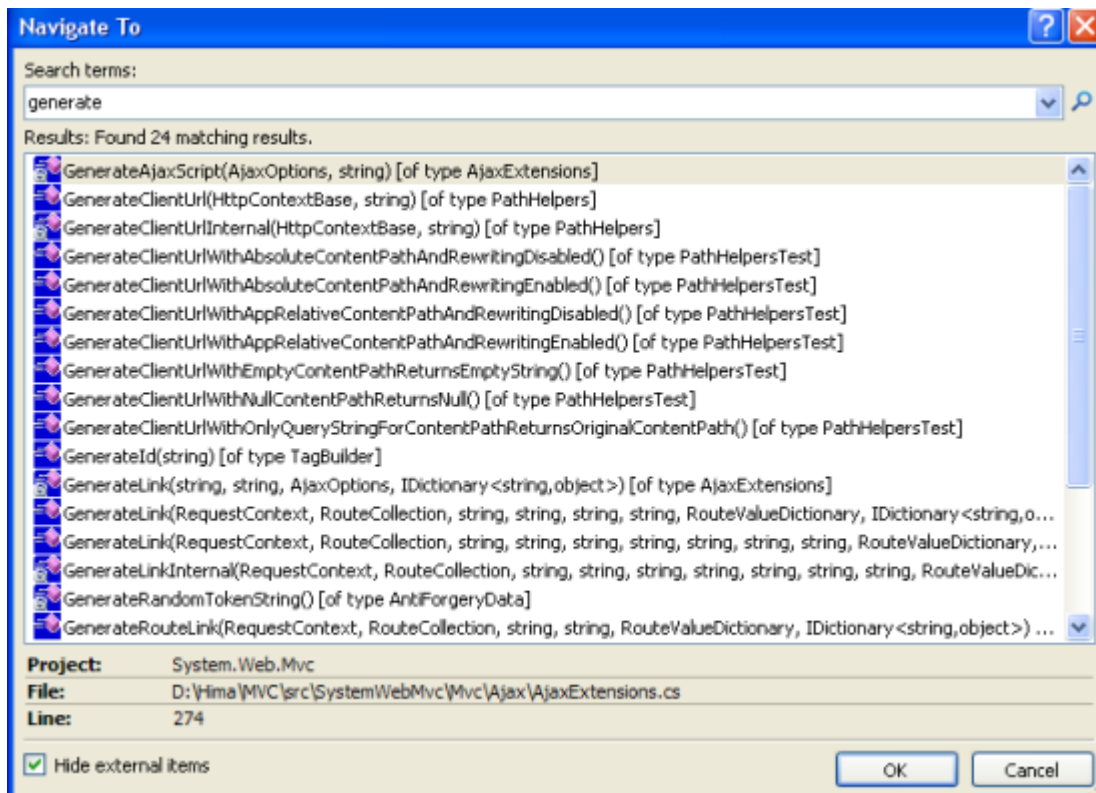
## Call Hierarchies - View Call Hierarchy

We can toggle between Control+K and Control+T to make use of this feature. Keep the cursor position on the method you want to check, right click and click the View Call Hierarchy option. This gives all reference calls to a particular method, like where it's called, as well as all calls from a particular method. This helps in analyzing how a particular method or entity is passed in and out of the code section. This is a nice feature to understand the code of a large project where we need to debug and check the flow.

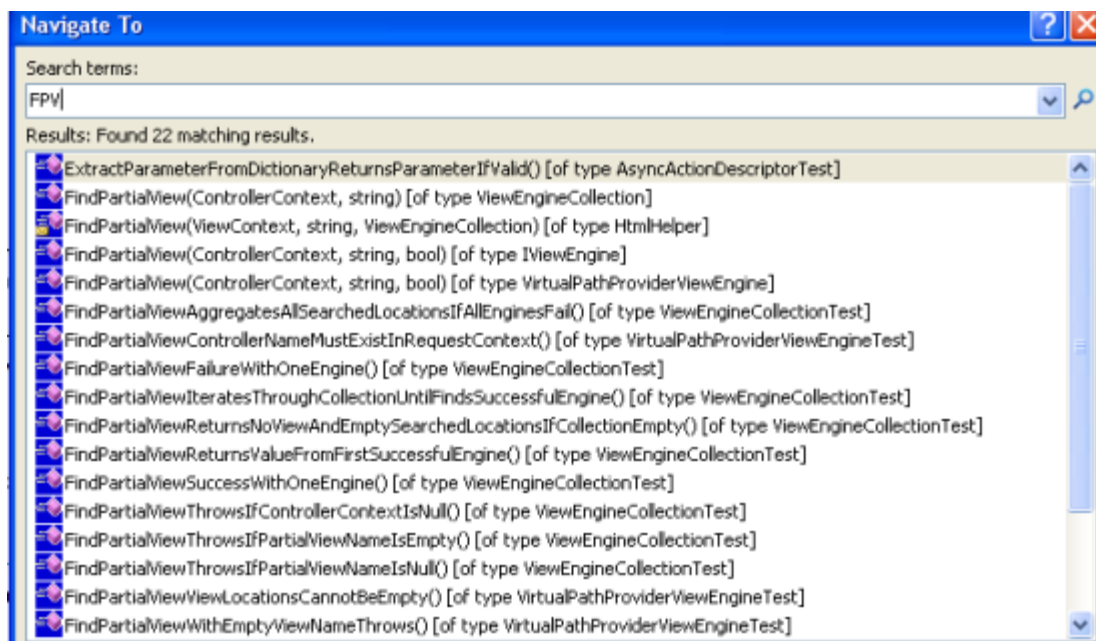


## Advanced Search Option - Navigate To

Press control+ comma to navigate to search options. This feature searches for all methods, variables or events that we typed in the Navigate to window. Search here is dynamic, as it works while we type the character.



Pascal case search is also supported here. The IntelliSense engine is more advanced since it supports Pascal casing all the time. This minimizes keyboard strokes and saves time because you just have to remember a few shortcuts or 3 characters. When we click on the individual items, the cursor will be positioned to the corresponding page location where the particular method or event is called. This feature is much flexible and very useful for large scale or migrating projects. There is an option to hide external items as well.



## Highlight References

Highlighting References is a simple and very easy concept that helps to understand a scoped piece of code easily. Place and drag the mouse over the property, variable or method or word you want to navigate to. The related words are activated automatically after a slight delay - all references to the symbol under the cursor are highlighted. Navigating to the next reference or previous reference is done by pressing Ctrl+Shift+Up Arrow or Down Arrow, respectively. It infers which overloads bind to the current selection: it's not just a pure text match.

```
List<Employees> Employee =  
List<Employees>  
{  
    new Employees{ Name = "Hima", EmpID = "101" },  
    new Employees{ Name = "Jacob", EmpID = "102" },  
    new Employees{ Name = "Vamshi", EmpID = "103" },  
    new Employees{ Name = "Vijay", EmpID = "104" },  
    new Employees{ Name = "Pinal", EmpID = "105" },  
    new Employees{ Name = "Shiva", EmpID = "106" },  
    new Employees{ Name = "Sukanya", EmpID = "107" },  
    new Employees{ Name = "Ram", EmpID = "108" },  
    new Employees{ Name = "Leela", EmpID = "109" }  
}
```

## Summary

We have walked through the most important enhancements in VS2010 for developers. I hope you are excited to work with it. In my next article I will be covering more features.

## Visual Studio 2010 and .NET Framework 4 IDE Enhancements –Part2

Published: 31 Dec 2009

By: [Hima Vejella](#)

In this article HimaBindu Vejella explains IDE enhancements in Visual Studio 2010 and .NET Framework 4.0.

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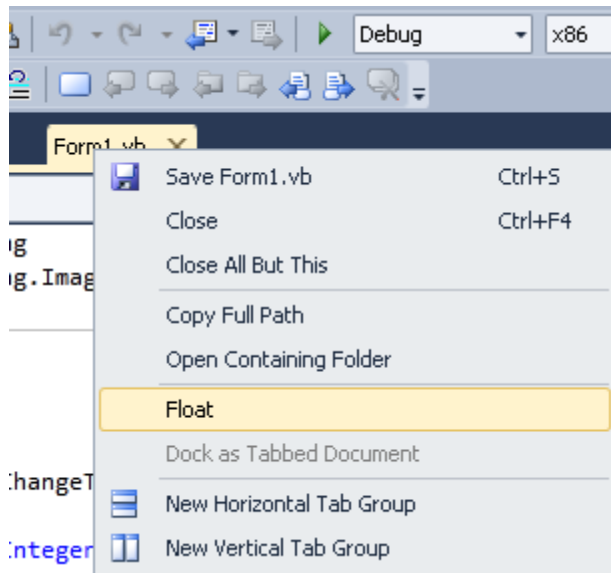
## Introduction

In my [previous article](#) I explained some of the important features related to the Visual Studio IDE. In this article I am going to cover Multi monitor support, Multi targeting, Parallel Development, Side by Side execution, Backward compatibility and SqlServer 2008 integration.

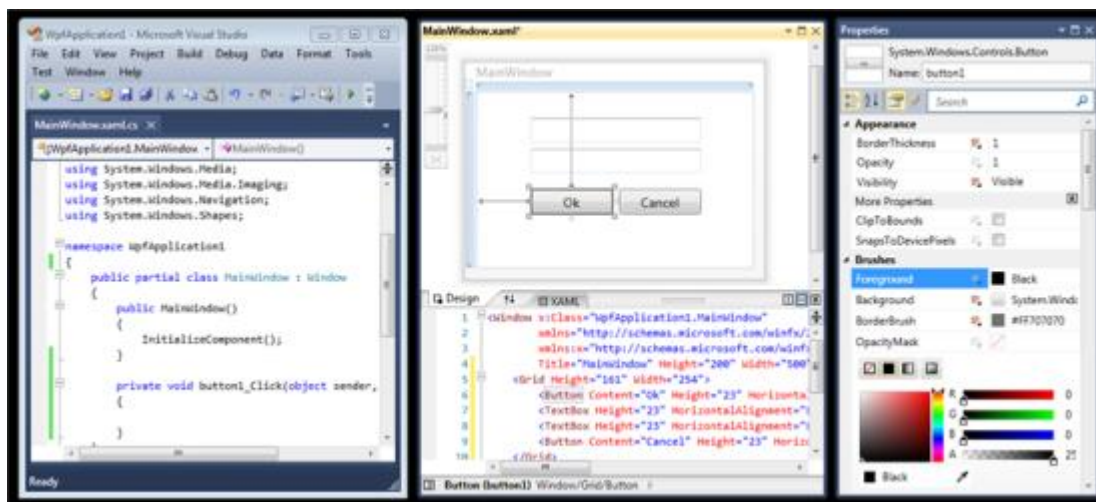
The .NET Framework 4.0 includes an entirely new CLR, a new IDE with better look and feel, which takes advantage of WPF technology. The IDE has awesome features and you won't resist migrating to the new version. Below are the some among those interesting things.

## Multi Monitor Support

I have seen lot of people cursing Visual studio as they cannot slide IDE across multiple monitors in previous versions. Now it's completely rewritten in WPF, and you can split code files, designer, tool windows etc. across multiple monitors. Just click on the document tab or file you want to move, drag it to the new location within the top-level IDE window or to any location on any monitor. You can also do this by right clicking on the document or code-editor tab, and then click on the float option as shown below in the figure.



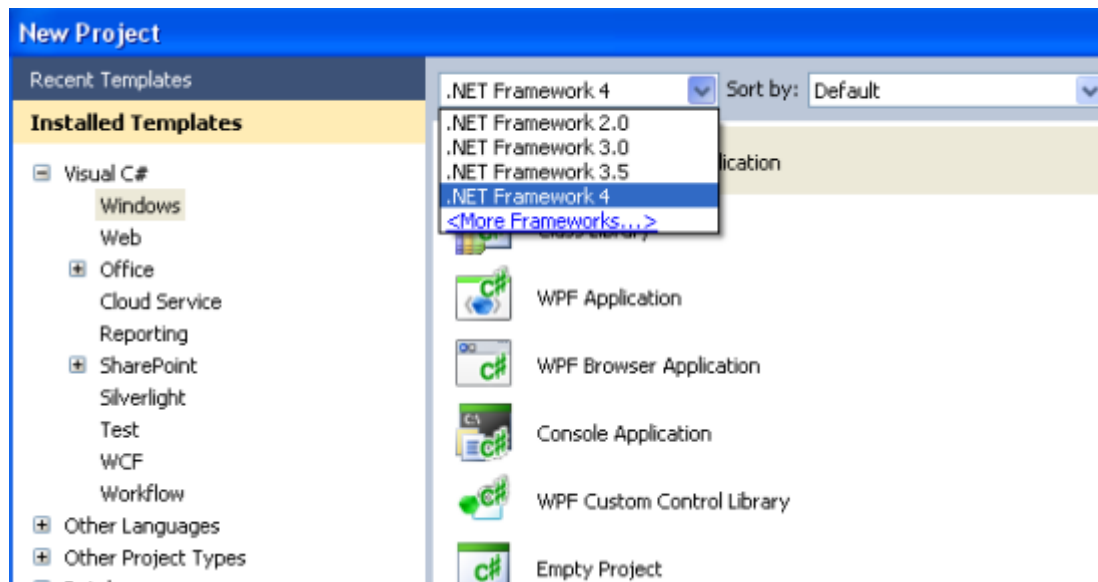
This feature definitely increases productivity especially for people who work with dual monitors and hate ALT + TAB. In the below picture you can view three separate screens at the same time. It indeed helps if you want to inspect test code and production code side by side.



## Multi Targeting

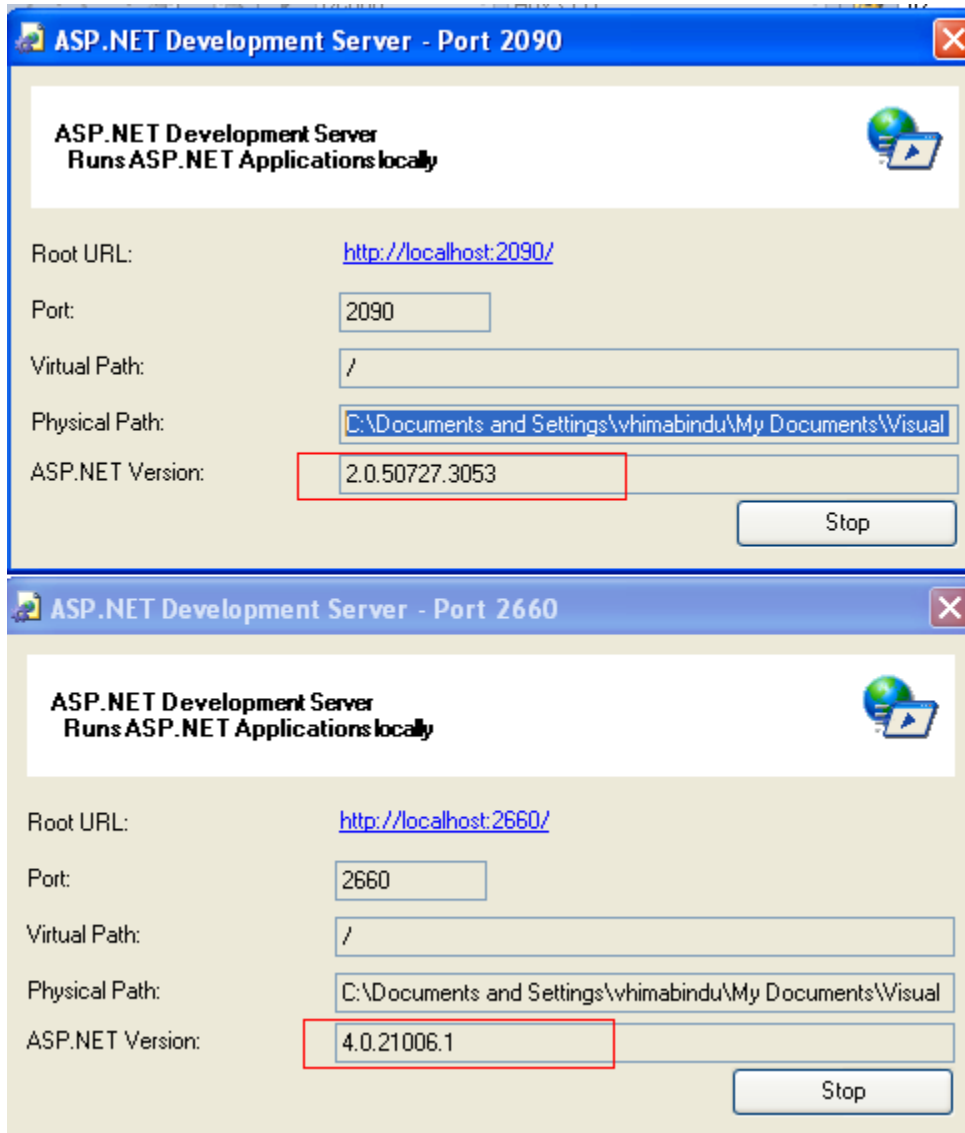
This is the concept introduced from VS2008 for managing earlier .NET Framework applications by targeting .NET application to different frameworks. You are able to run the .NET application in different frameworks like 2.0, 3.0, 3.5 and 4.0. This is mainly helpful for projects where you need to work with previous frameworks without upgrading to .NET 4.0 and take benefit of the IDE features. The Target Framework can also be changed using the application tab under project properties. Visual Studio 2010 automatically filters controls in the toolbox, references and properties windows based on the ASP.NET framework version being specified. The difference between VS2008 and VS2010 is that you will get IntelliSense in VS2010 as per the target framework specified. VS2010 multi-targeting helps debugger, profiler and compilers to target multiple versions of the CLR.

**It supports multi targeting up to framework 2.0 and doesn't support .NET 1.x.**



## Two versions of built in web servers now

In VS 2010, when you use IIS as web server in web projects, Visual Studio automatically updates the application pools for the web project in local host IIS. When you use the built-in ASP.NET development server, now one for each CLR version (CLR 2 and CLR 4) you have separate built-in web servers. VS 2010 will correctly choose the web server version to run based on the framework that the web project is using. You can find out which version is in use by double clicking the icon on the taskbar, right-clicking on the icon for ASP.NET Development Server and selecting the 'Show Details' option.



## Backward Compatibility

Visual Studio 2010 is backward compatible with Visual Studio 2008, Visual Studio 2005 or Visual Studio 2003. It allows upgrading previous versions project to VS 2010 with the help of the upgrade wizard. It's always recommended to take a back up of your project before you upgrade.

Any VS 2010 solution that is upgraded from VS 2008 to VS 2010 cannot be re-opened in VS 2008. If you try to do so you will receive an error saying that you can't open a solution or project which is created with a newer version of this application. Ho ever you can directly work in VS2010 by specifying the target framework as 3.5 in the IDE.

## Side by Side Execution

You can have VS2003, VS2005, VS2008, and VS2010 installed and run 'side by side'. You can use all the versions at the same time. The .NET Framework 4.0 can also be installed 'side by side' with previous versions of .NET on the same machine. You have new Common Language

Runtime (CLR) version 4 and Base Class Libraries (BCL) in .NET 4.0. This feature is helpful in the case you want to work on .NET 4.0 for new applications and simultaneously to work on existing applications that use other frameworks without upgrading.

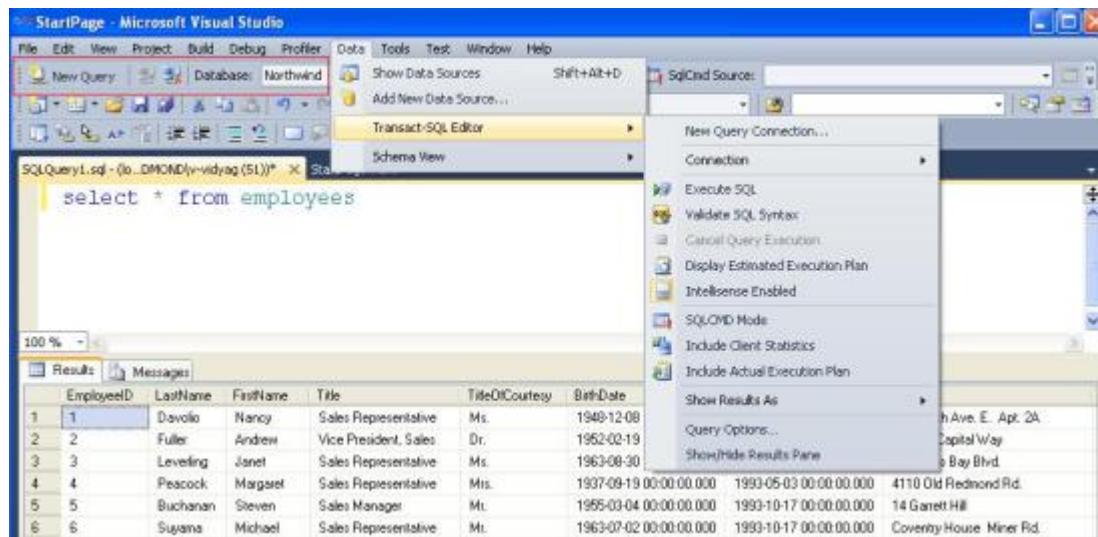
## Parallel Development

Parallel Development is the method of writing code that is optimized to run across multiple processors. Visual Studio 2010 IDE now provides an environment that will help to achieve this. Apart from the Parallel Development support, VS 2010 IDE has native C++ libraries and compiler support for parallel applications. .NET Framework version 4 provides P-LINQ (Parallel Language Integrated Query), parallel language semantics and framework components. The debugger and performance analyzer components are also optimized to assist development of parallel applications.

## Flexibility to work on SqlServer 2008 from IDE

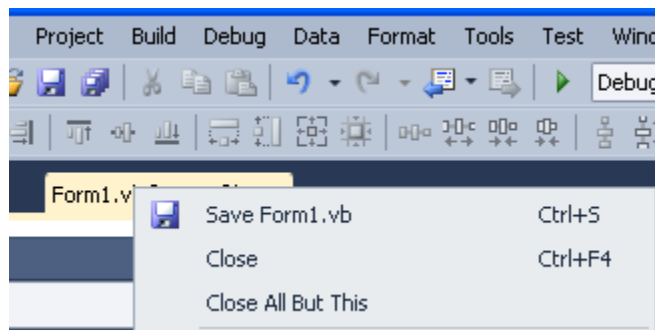
In VS 2008 and previous versions you need to open SQL Server Management Studio to run the T-SQL queries. Now VS 2010 provides this nice feature, and you can interact with a database without leaving the Visual Studio IDE.

Go to the Data menu in the IDE and select the Transact-SQL Editor option. You can directly connect to SqlServer 2008 and it will open the SQL editor from the IDE. The following figure gives you more understanding on how it works.



## Document tab - Individual close button

In any of the Visual Studio IDEs, from VS 2002 to VS 2008, code files are displayed in the form of a separate code-editor tab. If multiple files are open and whenever you want to close these tabs, there is a common closing tab on the right-hand-side. Or you need to click that 'close all but this'. In VS 2010 each tab has its individual close button, making it more user friendly and simpler to use. To use this feature right click on the document tab and hit close or press close [X] in the code-editor tab; or just use CTRL+F4. This is a quite interesting feature as well.



## Summary

You have learned some of the very exciting features of VS2010. I will be covering more IDE features, language enhancements, and ASP.NET web development enhancements, some of the new features in Silverlight and WPF in the upcoming articles.

# Visual Studio 2010 and .NET Framework 4 IDE Enhancements –Part3

Published: 08 Jan 2010

By: [Hima Vejella](#)

In my previous article I explained some of the nice features related to IDE, in continuation to that I am going to explain Add Reference enhancements for developers, Windows 7 support for developers, SharePoint 2010 enhancements , Office Business Application Support, Cloud Development, Document Map Margin and Visual Studio 2010 Tips

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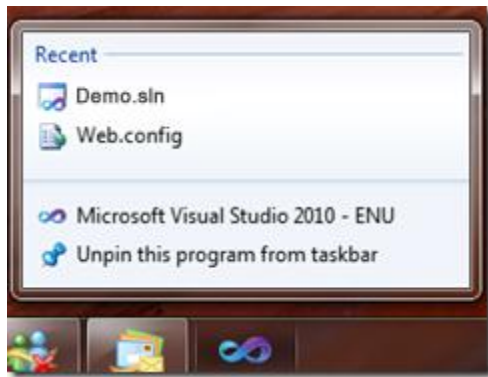
## Introduction

My [previous article](#) was about the features related to the Visual Studio IDE. This article discusses Windows 7 support for developers, Share Point 2010 enhancements, Office Business Application support, Cloud Development, Add Reference enhancements for developers, Visual Studio 2010 Tips, Document Map Margin and Visual Studio 2010 Extensibility.

## Windows7 Support for Developers

VS 2010 includes built in support for new tools, which help in developing applications for next generation platform, Windows7 operating system. The new WPF4 contains support for Win7 Taskbar Integration, Custom Jump Lists, Custom Thumbnail Previews, Multi Touch and Visual Feedback from the taskbar etc. New WPF4 Windows API code pack helps you to use Windows7 features using Visual Studio 2010 UI without leaving managed code. This is very useful for developers who require to develop their applications with the Windows7 look and feel.

VS 2010 support for Windows7 features allows developers to access application specific features fast, including the MRU (Most Recently Used) lists. The picture below shows how to access the "recent solutions" from the task bar.

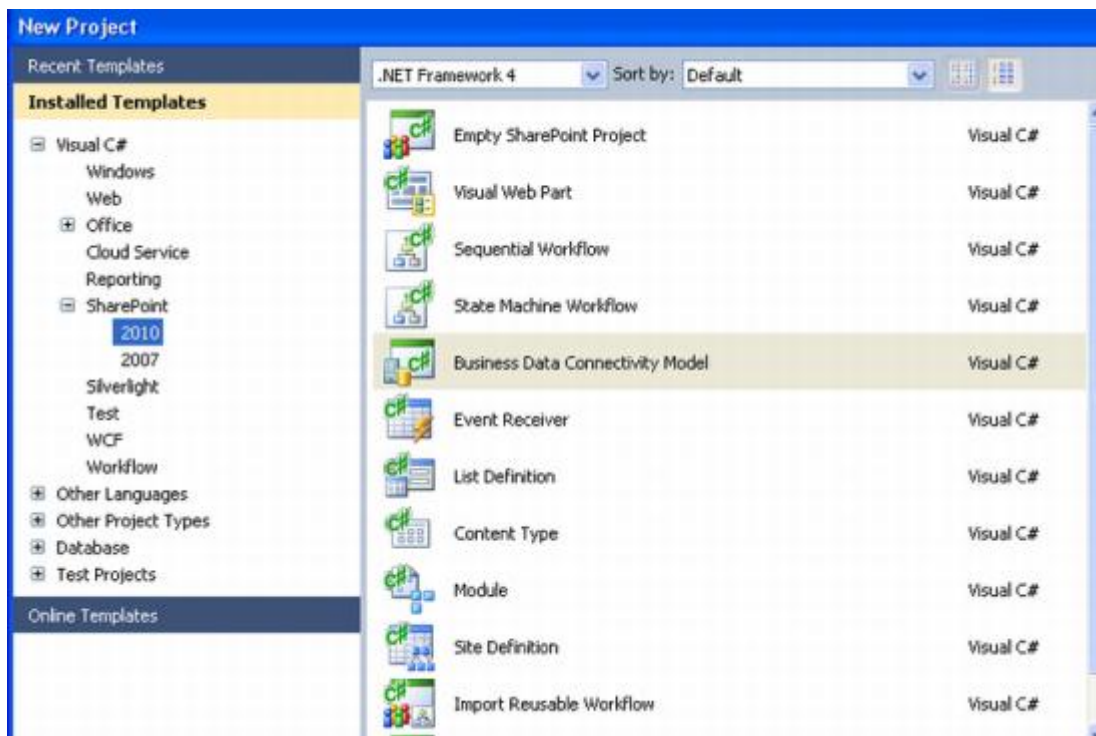


## SharePoint 2010 Enhancements

VS 2010 requires SharePoint Server and Windows Share Point Services (WSS) to be installed in the system to work with SharePoint Development related projects. VS 2010 includes the following enhancements related to SharePoint.

- The ability to View Lists, Sites, Modules, List Definitions and Document Libraries of SharePoint in Visual Studio.
- New SharePoint Services Project files Template.
- Visual Web Part Designer, web part project items.
- Event Receivers for SharePoint, Wizards to select the event receiver.
- ASPX Workflow Initiation form for Workflow Project.
- SharePoint packaging explorer and editor.

The picture below shows various SharePoint project templates in VS 2010.





## Office Business Application Support

VS 2010 helps developers to build Office 2010 and 2007 applications. We can deliver these applications as a single deployment package using the One Click Wizard. There are improvements in data binding, integration of Office data sources using Language Integrated Query (LINQ). There is support for integrating the Business Data Catalog (BDC).

## Cloud Development

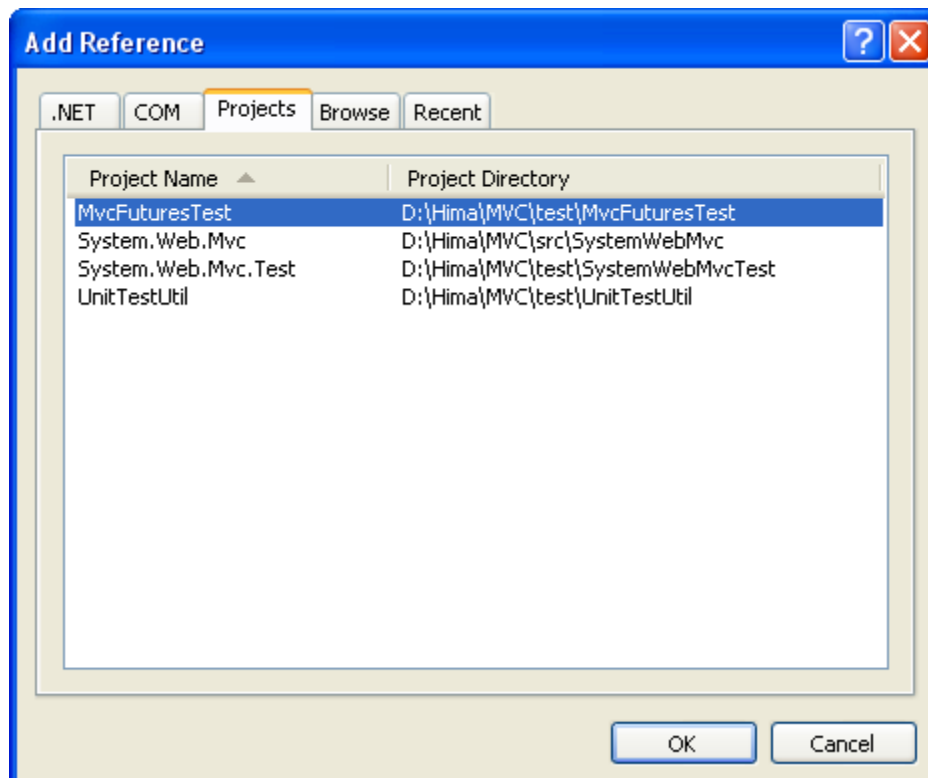
The Azure Services Platform is an application platform in the cloud that helps applications to be hosted and run at Microsoft Server Farm. It provides a *cloud operating system* called Windows Azure that acts as a runtime for the applications. The Windows Azure Tools for Microsoft Visual Studio lets you create, build, debug, and deploy scalable web applications and services on Windows Azure for the cloud. To develop web applications and services on Windows Azure, one needs to install the Windows Azure Tools for Microsoft Visual Studio that includes the Windows Azure SDK.

## Add References Default tab - Project

VS 2010 launches the "Add Reference" dialog behavior that significantly improves its performance.

There are 2 improvements in the Add Reference dialog:

- The "Add Reference" dialog in VS 2010 now defaults to opening the "Projects" tab instead of the .NET tab as in previous versions. This is done to load dialog quickly.
- Now we can switch among all the tabs in the reference section, browse or select a required assembly. We do not need to wait until .NET or COM components are loaded from the GAC. This is because .NET and COM tabs now load asynchronously, and don't freeze the IDE nor they block the UI thread while their lists are populated.

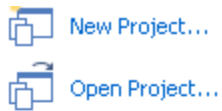


## VS 2010 Tips

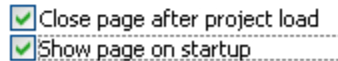
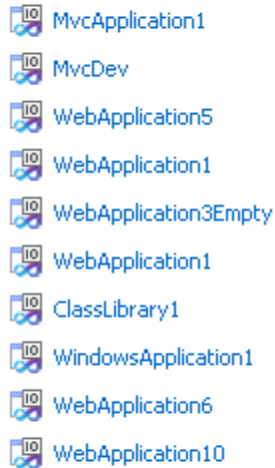
Here is some of the interesting stuff that you can play with using VS 2010 and use depending on your requirements and flexibility.

### VS 2010 Start Page

Visual Studio 2010 has a new "start" page with WPF look and feel. Whenever you open a project in Visual Studio, it also opens a "Start Page" in the project. If you select both the check-box options shown in the picture below, you will see the Start Page upon loading of the VS 2010 IDE, but as soon as you create a project, the Start Page will not be shown at all. If you want to view the start page at any time you can go to View - > Start Page option. The inclusion of the "New Project" link on the Start Page may force you to have the start page turned on, if you are playing or creating new projects.



#### Recent Projects



## Customization

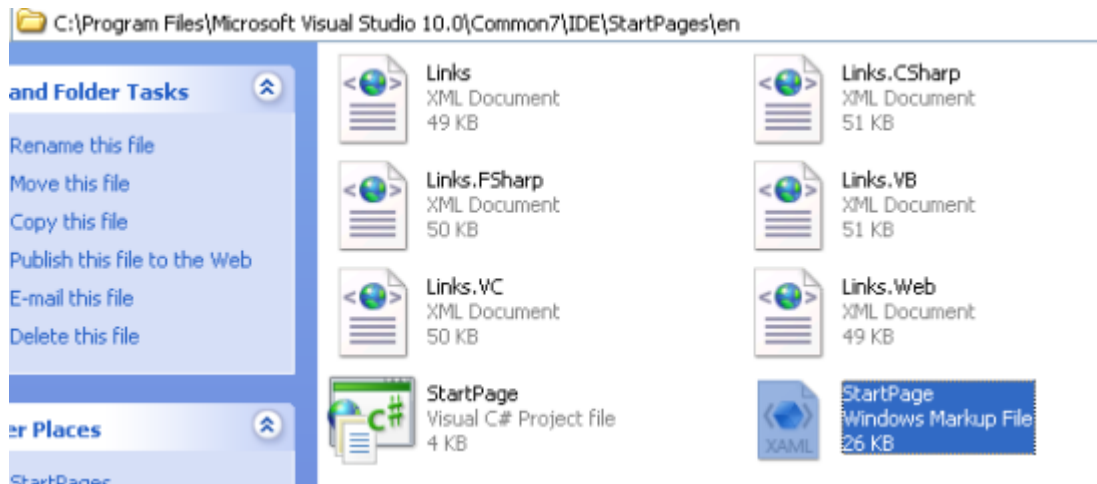
You can easily customize the start page in VS 2010, since it is a XAML page. You can put in the start page reminders for the team to not forget project deadlines and coding standards. You can even organize the start page with company-specific templates, custom templates or document repositories.

Here is how to do it.

Go to Tools->Options->Environment->Start up ->Customize Start Page ->specify the path of the xaml file.

The Start Page Project will be stored in this physical location of the system - \Program Files\Microsoft Visual Studio 10.0\Common7\IDE\StartPages\en

Edit the StartPage.xaml file using Visual Studio. When you save any changes to the file, the start page in Visual Studio will be updated automatically.



## Pin - Favorite Project as Recent

You can make your favorite projects stay in your recent project list even though you have not worked on them for some time. You can "pin" them to stay on the top of the recent projects. This list is available in start page, and is user friendly, and a big time saver.

## ALT + Selection replace

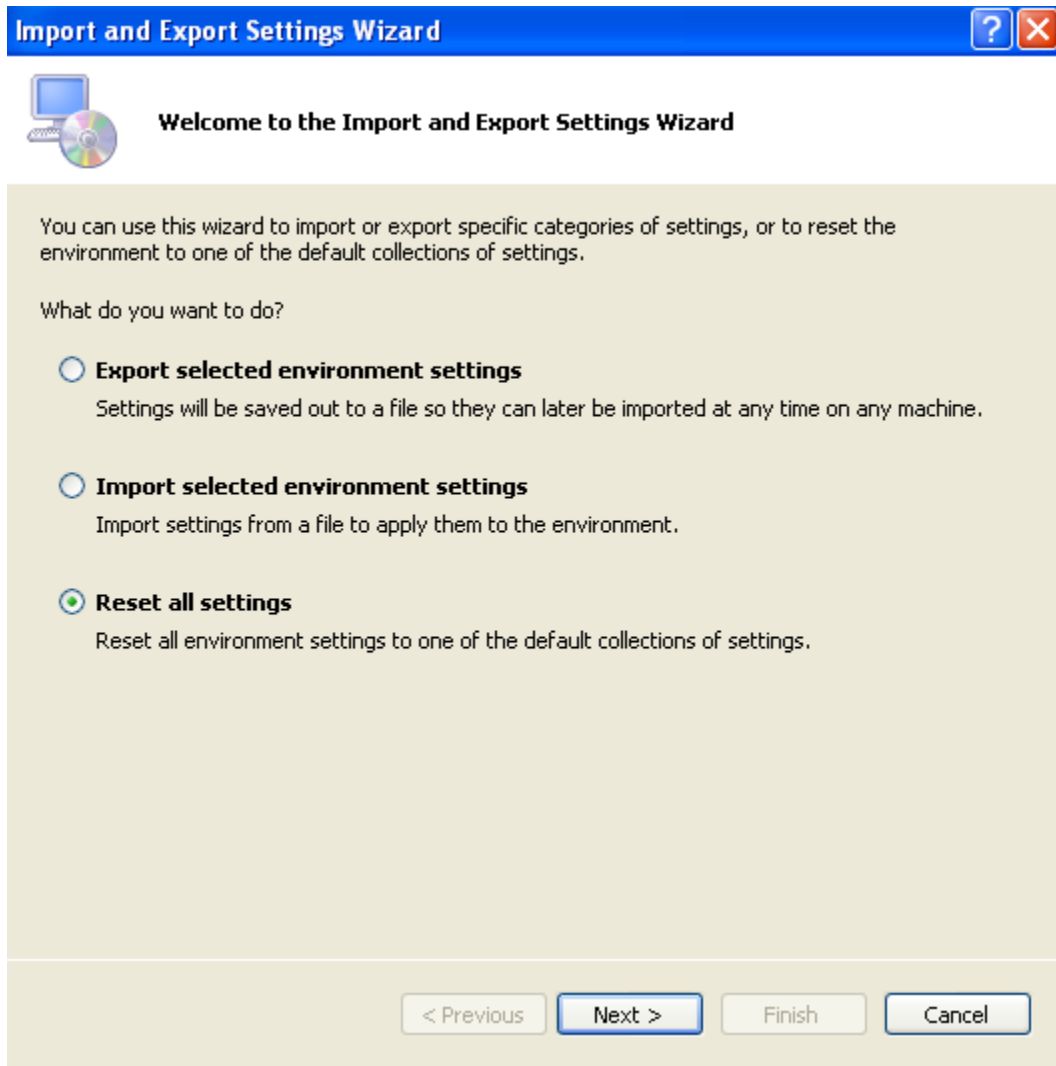
VS 2010 supports vertical selection by holding down the Alt key and selecting with the mouse. When you start typing, you can replace all selected rows and columns with the text you're typing. You can check it if you have VS 2010 installed. For example, select the `public`-access-modifier of properties or variables. You can easily change them to `private` using a single vertical selection.

## Zoom-In & Zoom-Out

You can zoom in and out the IDE by pressing Ctrl and scrolling with the mouse, as we do for Internet Explorer or Firefox. This option is available only in VS 2010 IDE. If you have VS 2010 and any of the previous versions installed side by side, you can easily check this feature.

## Reset VS 2010 IDE

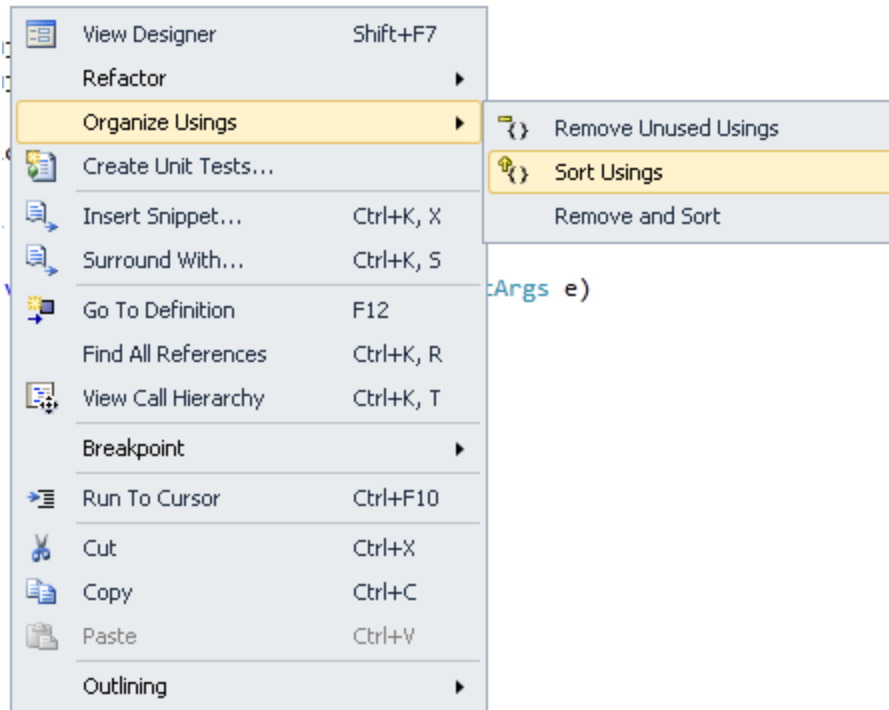
Sometimes it is desirable to reset the Visual Studio settings. You can do that by going to Tools -> Import and Export Settings. You may save your current settings or override existing ones, specify the settings you want to reset and just say finish.



You can also do this from the command prompt with `devenv /resetsettings`.

## Organize - Usings

Right click on any code file and you will find the 'Organize Usings' option just above Create Unit Tests. It has options like 'Remove Unused Usings', 'Sort Usings' and 'Remove and Sort'. The Remove Unused Usings option eliminates all unnecessary imports in the code file. The other two options, as the names suggest, are used for sorting using statements, and remove and sort using statements respectively.



## Disabling Add-ins

If your system runs into random crashes, you might want to try disabling add-ins installed in VS 2010. This can be done by going to Tools -> Add-in Manager.

If you ever want to disable Add-ins from starting on launch, you can hold down the Left-Shift key while Visual Studio is loading. This helps to determine if it is a Visual Studio issue or an Add-in issue. You will still be able to restart your Add-in manually during the Visual Studio session.

To reset all Add-ins from the Visual Studio command prompt use `devenv.exe/resetaddin`.

To reset a specific Add-in use the command  
`devenv.exe/resetaddin<NameSpace/Class>`.

Here, NameSpace.Class refers to the name of the main class of the Add-in.

### NOTE

The file devenv.exe is located at C:\ProgramFiles\Microsoft Visual Studio 10.0\Commom7\IDE

## Document Map Margin

The "Document Map Margin" feature helps to render a graphical view of a source file including information about the code, layout or third party add-ons for custom views, symbol highlights and comments. The basic idea is that Rock Scroll extends the scrollbar in Visual Studio to show a syntax highlighted thumbnail view of your source. This is very useful for long source code files. It's just one DLL and you can turn it off from Tools->Add-ins just by un-checking the checkbox.

The document map margin provides a zoomed out view of the code editor which allows users to quickly navigate to important landmarks in their code. This extension to the editor demonstrates extensible margins which allow developers to add views to the side or above & below the editor.

## NOTE

The Document Map Margin will not ship with the final release, but will be added as a free extension in the RTM.

## VS 2010 Extensibility

It's the ability to extend the Visual Studio IDE programmatically, using tools like Add-ins and wizards. You can create customized extensions to the IDE in Visual Studio 2010 using the Extension Manager. It helps developers to share, integrate and manage Visual Studio Extensions (VSX) easily. Managed Extensibility Framework (MEF) is the heart of the VS 2010 and helps to support extensions such as Project Templates, Item Templates, Visual Studio Packages, Managed Extensibility Framework (MEF) components, and custom extension types. It consumes data from the [Visual Studio Gallery](#) giving you access to community products that extend Visual Studio. In short the Extension Manager brings extension detection functionality into Visual Studio 2010.

End users are able to use the new extensibility features inside the Visual Studio IDE. You can browse, download or install extensions from the Visual Studio Gallery. The Visual Studio 2010 extension manager provides the ability to handle installed extensions from the IDE. You can now manage portfolio of extensions to view, upgrade, enable or disable or uninstall them. The extension manager will display the same content and extensions as the Visual Studio Gallery.

VS 2010 Extension Manager comes with a new file extension, VSIX, for deployment of Visual Studio 2010 extensions. VSIX files are built on the Open Packaging Convention (OPC) Zip format. VSIX files contain a manifest and a payload. The contents are automatically XCopy-deployed relating to the folder structure inside the OPC zip file during the installation. For Visual Studio users, it provides a single point for finding, downloading, installing and managing extensions.

## Summary

We have learnt some of the very exciting features and cool tips of VS 2010. I will be covering more features like language enhancements, ASP.NET web development enhancements and the new things in Silver light and WPF in the upcoming articles.

Try these from the Visual Studio.NET Command Prompt:

**devenv /?**

**devenv.exe /?**

**devenv**

`devenv /?` shows the options in command line.

`devenv.exe /?` shows the options in GUI.

`devenv` launches ide without options

What's happening is when you execute `devenv /?` (no extension, remember order of precedence BAT, COM, EXE) you are executing **devenv.com**. Without `/?`, `devenv.com` will just chain to `devenv.exe`.

Here's my `which.exe` output:

WHICH, Version 1.31

UNIX-like WHICH utility for Windows NT 4 / 2000 / XP

Written by Rob van der Woude

C:\Program Files\Microsoft Visual Studio .NET\Common7\IDE\devenv.com

C:\Program Files\Microsoft Visual Studio .NET\Common7\IDE\devenv.exe

And here's **devenv.com** from the Command Line:

```
C:\Program Files\>devenv /?
```

```
Microsoft (R) Development Environment Version 7.00.9466.
```

```
Copyright (C) Microsoft Corp 1984-2001. All rights reserved.
```

```
Usage:
```

```
devenv [solutionfile | projectfile | anyfile.ext] [switches]
```

You can invoke `devenv` with a first argument to specify a solution file or project file. You can also invoke `devenv` with a first argument that is any other kind of file that you just want to open in an editor. When you supply a project file, the IDE opens it in the context of a solution by looking for a



.sln file with the same base name as the project file in the same directory as the project file. If no such .sln file exists, then the IDE looks for a single .sln file that references the project. If no such single .sln file exists, then the IDE creates an unsaved solution with a default .sln file name that has the same base name as the project file.

Command line builds:

```
devenv solutionfile.sln /build solutionconfig [ /project projectnameorfile [ /p  
projectconfig name ] ]
```

Available command line switches:

/build	build the specified solution configuration
/project	specifies the project to build instead of solution must specify /build to use /project
/projectconfig	specifies project configuration to build must specify /project to use /projectconfig
/out	write build output to specified file
/rebuild	like /build but forces a clean first
/clean	clean up build outputs
/deploy	build the specified solution configuration and then deploy it
/run	run the specified solution configuration
/runexit	run the specified solution configuration and then terminate
/command	executes the specified internal command line after startup
/mditabs	use tabbed documents interface
/mdi	use MDI interface
/fn	use specified font name
/fs	use specified font size
/LCID	use specified language ID
/noVSIP	disables VSIP developers license key for VSIP testing
/safemode	only default environment and services load for stability
/resetskippkgs	allow VsPackages once flagged for loading failures to load again

Product-specific switches:

/debugexe	Open the specified executable to be debugged. The remainder of the command line is passed to this executable as its arguments.
/useenv	Use PATH, INCLUDE, LIBPATH, and LIB environment variables instead of IDE paths for VC++ builds.