UNIT 1
Walkthrough Visual Studio Part 3
(Visual Studio Debugging Windows)

Presented By : Aditya Joshi

Asst. Professor

Department of Computer Application

Graphic Era Deemed to be University

Dated : 27-01-2021

Agenda

- Watch Windows
- Immediate Window
- Locals and Autos
- Call Stack Window
- Threads Window

The Watch Window

The **Watch Window** allows you to see value of variables and expressions while debugging. It's kind of like the DataTip you get when hovering over a variable, except that you can write any expression you want. It's available from **Debug | Windows | Watch | Watch 1** or Ctrl + Alt + W + 1.

There are 4 watch windows in Visual Studio, which you can use in different contexts (Watch 1, Watch 2, etc.).

Any expression can be entered into the watch window. The same rules apply to expressions as to code. So if you write an illegal expression, you'll see the same compiler error.

To add items to watch do any of the following:

- Write them manually in a new row of the Watch window
- Right-click on a variable choose "Add Watch" in the context menu
- Right-click on a variable in the DataTip and choose "Add Watch"
- "Add Watch" button from QuickWatch

The Immediate Window

- The immediate window is available in the menu from **Debug | Windows | Immediate** or **Ctrl + Alt + i**. You can type in any expression and the immediate window will evaluate. It's kind of like the Watch window, but it acts more like a command line window in Windows or Linux.

Locals and Autos Windows

VS offers 2 automatic-watch tool windows:

- The Locals and

- Autos windows.

The Locals will show local variables of the current scope. It usually starts with this, which represents the current class.

The **Autos** window will show all variables used in the current line and in the previous line. These could be local variables, class members or static variables. The Autos also shows values returned from methods, which is useful at times.

- In both Locals and Autos, you can double click on any **Value** field and change the variable's value. This will actually its value, causing a possibly unwanted side effect.

- Search works same as in the Watch window.

Call Stack Window

- One of the most useful tool windows is the **Call Stack Window**. It shows the chain of methods that called one another, up to the the currently debugged method.

Call Stack Options and Features

- Besides the ability to switch frames by double-clicking, you can open the Call Stack's context menu by mouse right-clicking on any frame.

Threads Window

- The Threads Window is the final tool window in what I call the *Truly Vital Debugging Windows* group. This window shows all the currently active threads, and allow to switch between them.

- You can switch between threads by double clicking the row.

- To see the Call Stack of a thread, you can switch to a threads and then open the Call Stack window. Alternatively, the Threads window has a little arrow between the *Name* and *Location* column that allows you to see the call stack.

- You can Search the call stack for namespaces, names of methods, thread ID, and anything else that can be seen in the columns.