

#### Things to Shut Down

- Skydrive/Live Mesh
- Zune
- DropBox
- Crashplan

#### Visual Studio Prep

- Light Theme
- Lucida Console, 16 point
- Output pane docked as sidebar
- Zoomit
- Carnac

#### Things to start

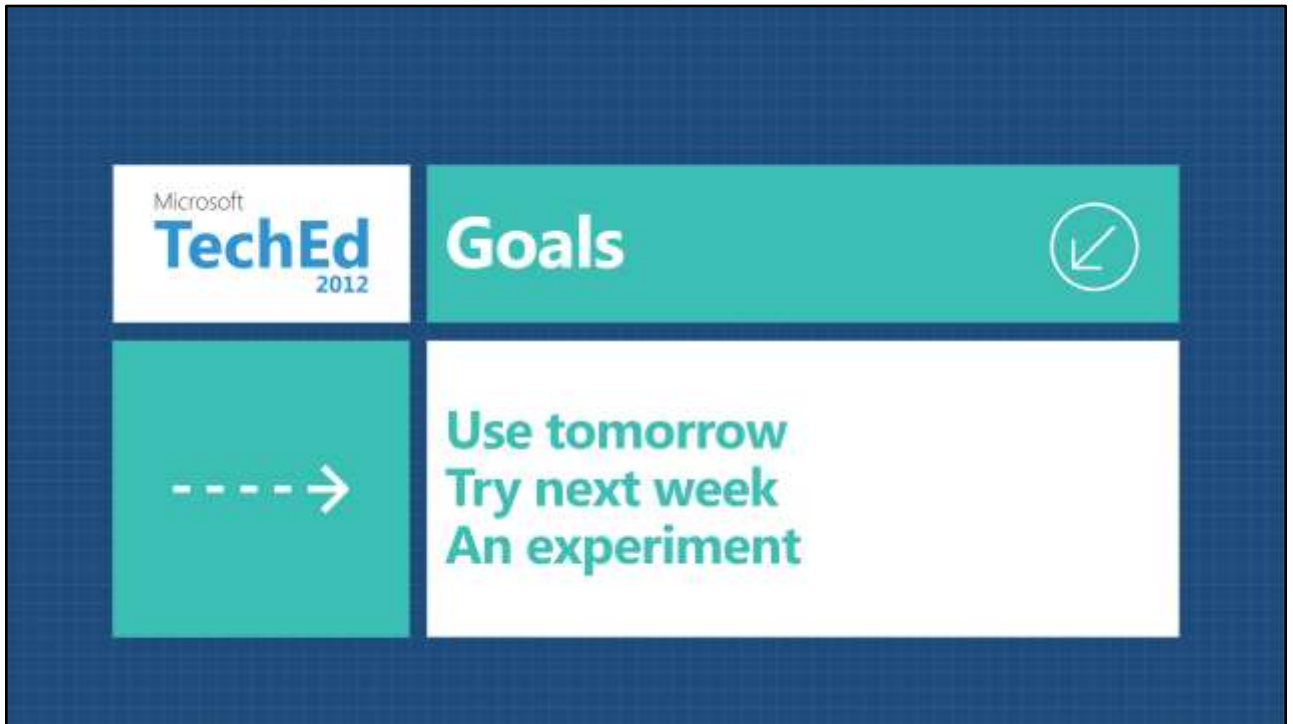
- Visual Studio 2012 – Blank Project
- Visual Studio 2012 – Mandelbrot Screensaver
- Visual Studio 2010 – Word Clock

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# Agenda



**Environment**  
**Understanding**  
**Navigation**  
**Development**



What should you take away from this presentation?

Something that you know you can make use of tomorrow.

Something that you think worth trying out next week.

Something to experiment with when you have some time.

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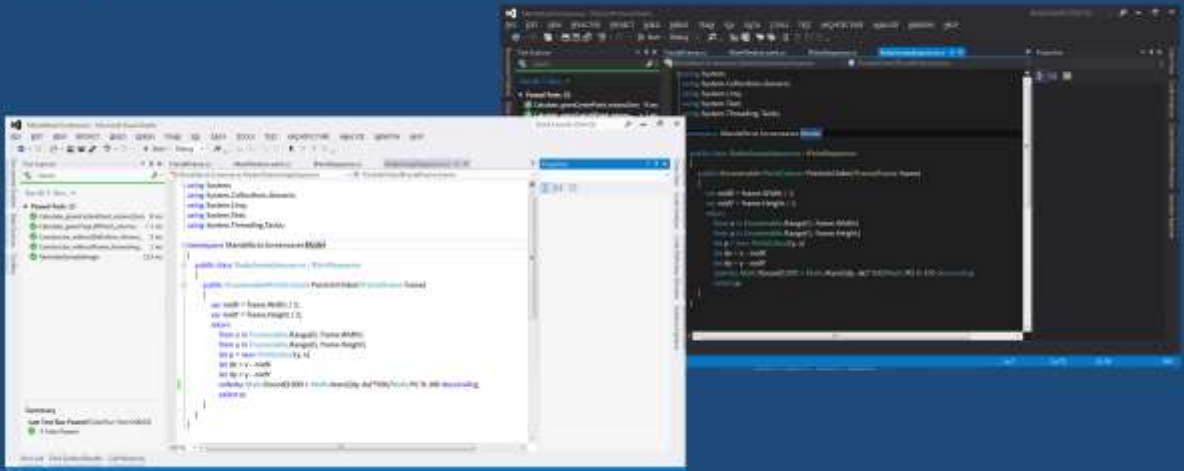
# Environment



How can I improve my  
working environment?

# Visual Studio theme

## Will you turn to the dark side?



Visual Studio now gives you a choice of a light and a dark theme

Demo: Tools | Options | Environment; Switch to Dark, then back again

### Highlights

- Choose the style that suits you.

Visual Studio 2012: Yes

Visual Studio 2010: Can customize editor colours. For more: <http://studiostyle.es/>

Credits: Screenshot taken from Visual Studio 2012

# Monitor adjustments

Don't stare into a bright light all day

- ⦿ Blacks should be black, not dark grey
- ⦿ Whites should be bright, but not too bright



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Problem: It's easy to give yourself headaches and/or eyestrain if you don't tune your monitor

## Highlights

- Monitors come from the manufacturer tuned to look good in the showroom, not to be easy on the eyes
- Best settings depend on the activity – games vs office
- Blacks should be black
- Whites should be no brighter than a pad of paper

Clip art from Office.com

# Font choice

## What's easier to read?

### ⌚ Font choice intensely personal

#### ⌚ Fixed vs Proportional

### ⌚ Fixed width fonts

#### ⌚ Limitations of typewriter technology

#### ⌚ Typewriters → electric typewriters → printers

Consolas

Courier New

Lucida Console

Calibri

Verdana

Segoe UI



We're always reading code, even while we're writing it, so optimize your reading experience

Demo: Quick Launch | "Fonts" | Open "Font" combobox

### Highlights

- Monospaced fonts are bold
- But monospaced fonts are an element of history, originating with the limitations of typewriters
- Proportional fonts are measurably faster to read
- BUT choose one where key symbols are easy to read

Since: Any version BUT works better from Visual Studio 2010

Visual Studio 2012: Yes

Visual Studio 2010: Yes



# Window layout

Make every pixel work for you

- 🕒 Customize Visual Studio to your needs
- 🕒 Output as Tabbed Document
- 🕒 Close any sidebars you don't use
- 🕒 Export layout
  - 🕒 Tools | Import & Export Settings
  - 🕒 All Settings -> General Settings -> Window Layouts



Don't waste pixels on things you're not actively using.

Customize the layout of your windows and sidebars to suit the way you want to work

Demo:

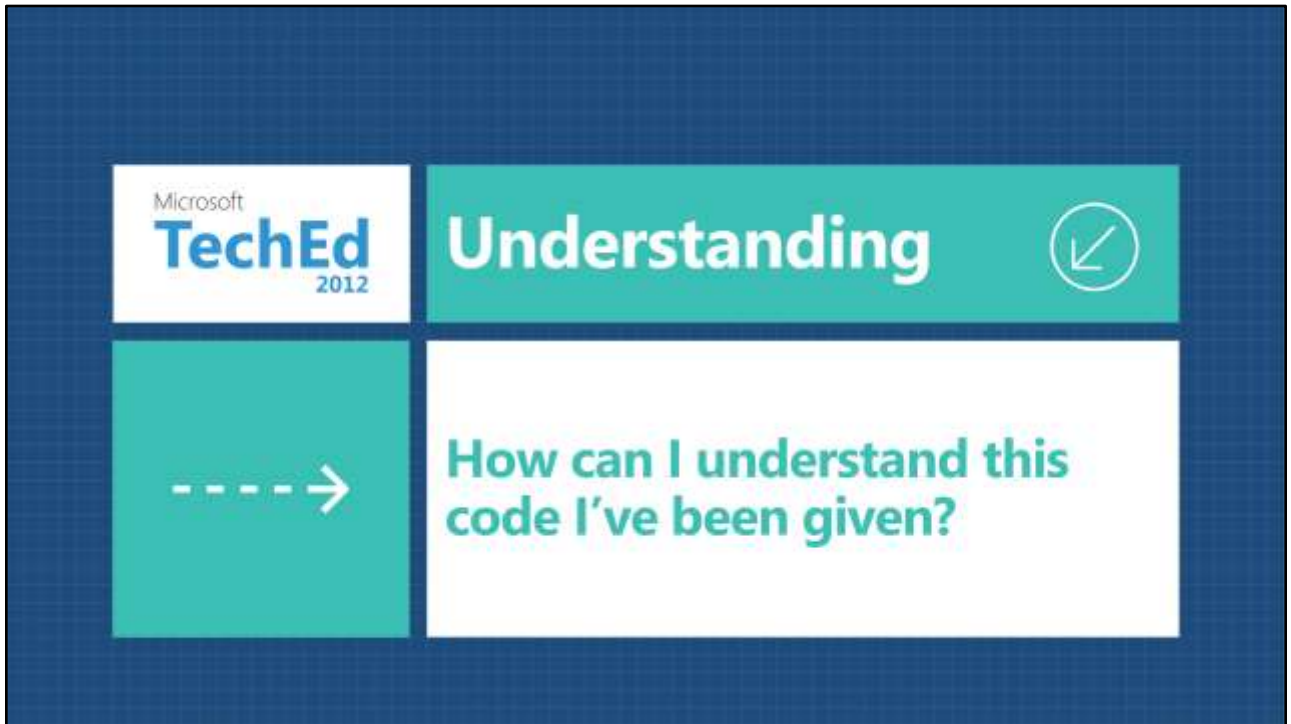
- Move Output pane to Tabbed Document
- Save your settings for later: Tools | Import & Export Settings | All Settings | General Settings | Window Layouts

Highlights

- Visual Studio is very fluid and customizable

Visual Studio 2012: Yes

Visual Studio 2010: Yes

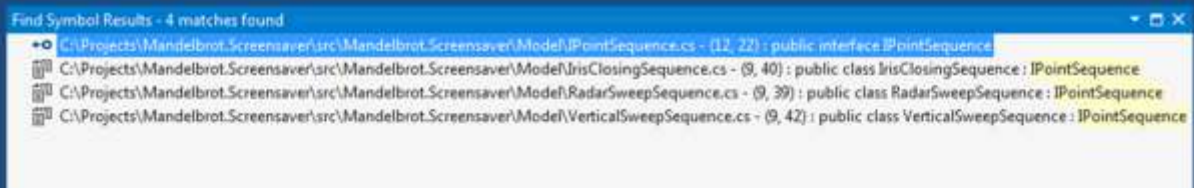


When you've been given a large codebase, how do you understand what you have?

It's rare to be the sole author of a large codebase, and even if you are, keeping it all in your head is a challenge.

# Find Symbol

## Find all the uses of a particular identifier



How do you know where a particular symbol is used?

Find Symbol shows you all the places

Demos

- IFractalFrame.Width

Highlights

- Shortcut: ^K^R or Shift-F12
- Doesn't find magic strings nor work with reflection

Visual Studio 2012: Yes

Visual Studio 2010: Yes

# Call Hierarchy

## Find calls to/from a selected method



How do you know who calls a particular method?

Call Hierarchy shows you callers

Demo: FrameRenderer.Render

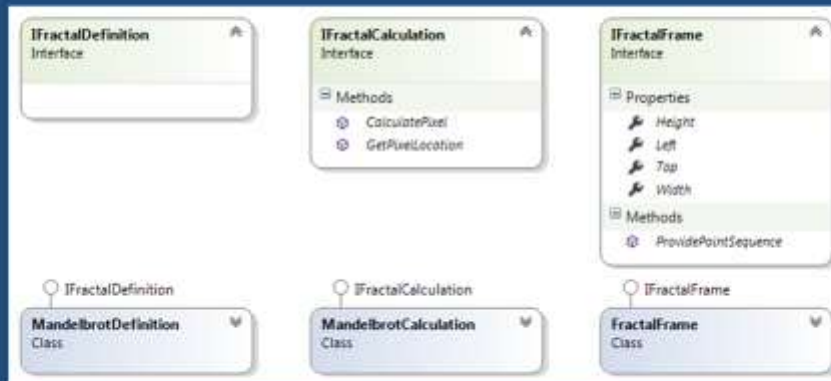
Highlights

- Hotkey `^K^T` or `^W^K`
- Requires the project to build

Credits: Screenshots taken from Visual Studio 2010 by Bevan Arps

# Class Diagrams

See interfaces and classes in relative context



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Solution wide navigation to classes/interfaces/structures

Demos

- FractalFrame
- Calculate
- FF

Features

- Shortcut: Ctrl-,

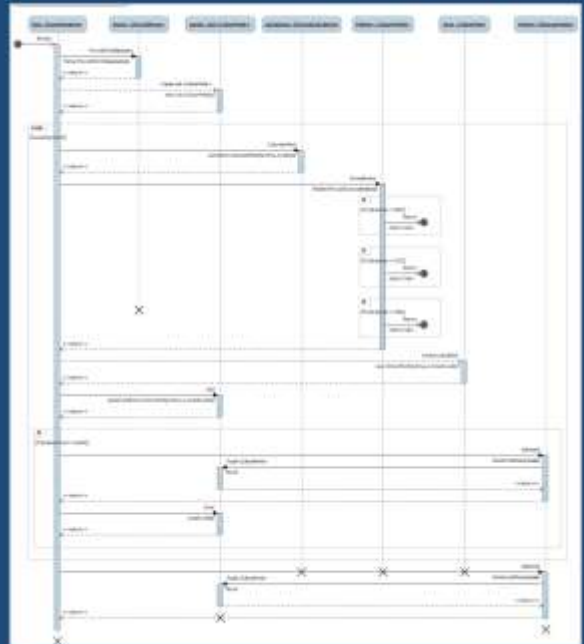
Visual Studio 2012: Yes

Visual Studio 2010: Yes

Screenshots taken from Visual Studio 2010 by Bevan Arps

# Sequence Diagrams

See how classes interact



Solution wide navigation to classes/interfaces/structures

## Demos

- FractalFrame
- Calculate
- FF

## Features

- Shortcut: Ctrl-,

Visual Studio 2012: Yes

Visual Studio 2010: Yes

Screenshots taken from Visual Studio 2010 by Bevan Arps

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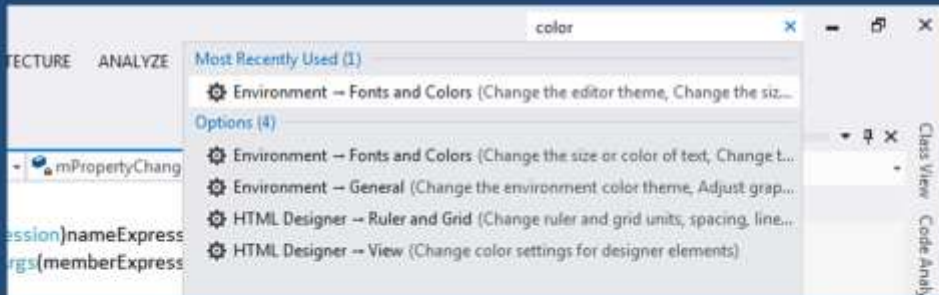
## Navigation



**How can I get to where I  
need to be?**

# Quick Launch

## Fast Access to Visual Studio Features



Quick access to Visual Studio features by keyword; select the item to activate it directly

Demos: "Font" "Analysis"

Highlights

- Shows Hot Keys

Visual Studio 2012: New

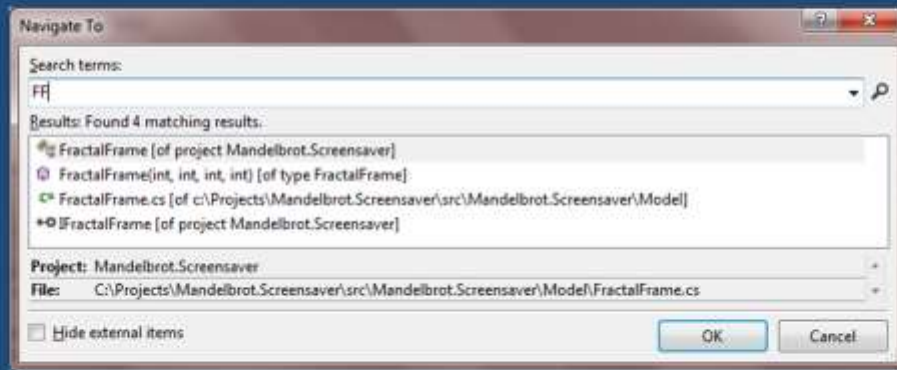
Visual Studio 2010: Productivity Power Tools (View|Quick Access)

Screenshots taken from Visual Studio 2010 by Bevan Arps



# Navigate to

## Go to members by name



Solution wide navigation to classes/interfaces/structures

### Demos

- FractalFrame
- Calculate
- FF

### Features

- Shortcut: Ctrl-,

Visual Studio 2012: Yes

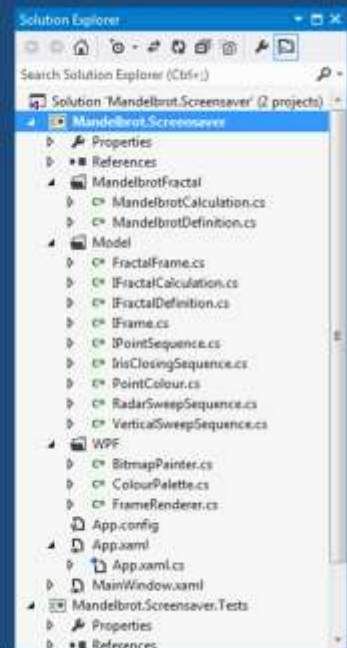
Visual Studio 2010: Yes

Screenshots taken from Visual Studio 2010 by Bevan Arps

# Solution Explorer

## Drill down and search

- 🕒 Drill down into file contents
- 🕒 Filters
  - 🕒 Open/changed files
- 🕒 Search
  - 🕒 Camelcase support
  - 🕒 Forward/back navigation
- 🕒 Sync with document



Screenshots taken from Visual Studio 2010 by Bevan Arps

Demo:

Using Mandelbrot Screensaver project, try search terms: Frame, PS, Presentation

Key points

- Search for "Frame" matches types and members
- Search for "PS" – PascalCase search matches point sequence
- Search for "Presentation" – referenced assemblies are found
- Sync w/Document – Tools | Options | Projects and Settings | Track Active Item in Solution Explorer

Since Visual Studio 2012

But Visual Studio 2010 users can install "Productivity Power Tools" and get the "Solution Navigator", a prototype

Document sync works in VS 2010

Credits: Screenshot taken from Visual Studio 2012

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# Development



**How can I be a more  
effective developer?**

# Code Snippets

## Predefined code blocks

- 🕒 Many match common C# keywords
- 🕒 Define your own
- 🕒 Also
  - 🕒 Smart tags
  - 🕒 Toolbox text



Code snippets are short pieces of code that you can insert by name

Demos:

Create Person Class

prop: FullName, FamilyName, KnownAs

Create PersonViewModel : INotifyPropertyChanged

Drag in code from toolbox

SmartTag to fix up "Expression"

propn: FullName, FamilyName, KnownAs

Highlights

- ^K^X – insert by name
- ^K^S – surround
- <name> TAB – easiest way
- Column copy/paste/edit: Load(Person person), Save(Person, person)
- Format Document ^K^D
- Edit|Advanced|Format Document

# Test Explorer

## Extensible unit testing

- ⌚ Easily run unit tests, using any framework!
- ⌚ Can trigger automatically after build
- ⌚ Integrates with Code Coverage tool

Code Coverage Results

Hierarchy	Not Covered (Blocks)	Not Covered (% Blocks)	Covered (Blocks)	Covered (% Blocks)
Bevan_EXCALIBER 2012-08-27 21_51_12.cov	390	62.00%	239	38.00%
mandelbrot.screensaver.exe	379	74.61%	129	25.39%
mandelbrot.screensaver.tests...	11	9.09%	110	90.91%

Test Explorer

Search

Run All | Run...

Passed Tests (5)

Calculate_givenCentrePoint_returnsZero	8 ms
Calculate_givenTopLeftPoint_returns...	< 1 ms
Constructor_withoutDefinition_throwsA...	2 ms
Constructor_withoutFrame_throwsArgu...	1 ms
GenerateSampleImage	113 ms

Summary

Last Test Run Passed (Total Run Time: 0:00:03)

5 Tests Passed

New in Visual Studio 2012, an integrated unit test runner that can run any kind of test – it has a pluggable architecture

### Demo

- Tools | Windows | Test Explorer -> Shows tests
- Run all tests
- Make a change to make a test fail, do a build, show how they run automatically, highlight option to do this
- Tools | Extensions and Updates -> NUnit Test Adapter
- Test | Analyse Code Coverage

### Key points

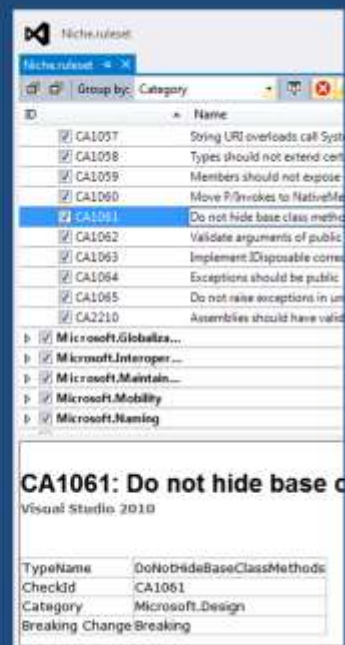
- Handles any unit test tool for which someone writes a plugin
  - Blog post "Writing a Visual Studio 2012 Unit Test Adapter" by "Mathew Aniyan" that tells you how
- Automatically running tests after a build makes it almost seamless
- Code Coverage

Visual Studio 2012: New in this release

# Code Analysis

## Automated code review

- ⌚ Think of it as an automatic code review
  - ⌚ Let it train you to do things better
  - ⌚ Pick the rules that make sense for you
- ⌚ But it slows down the build
  - ⌚ Add an "Analysis" build configuration
  - ⌚ Keep "Debug" simple and fast



Research shows that even the best testing techniques only find 40% of bugs. Key is to use a variety of techniques that come at the problem from different perspectives. Code Analysis can help you avoid many common pitfalls.

### Demo

- Switch Mandelbrot project from Debug to Analysis, build.
- Review the results in the sidebar
- To customize the rule set, select "Custom" from the combobox shown on the project properties "Code Analysis" tab. Choose "All Rules" as a base, then save. Now, press "Open" to turn on and off rules as suits your in-house style.

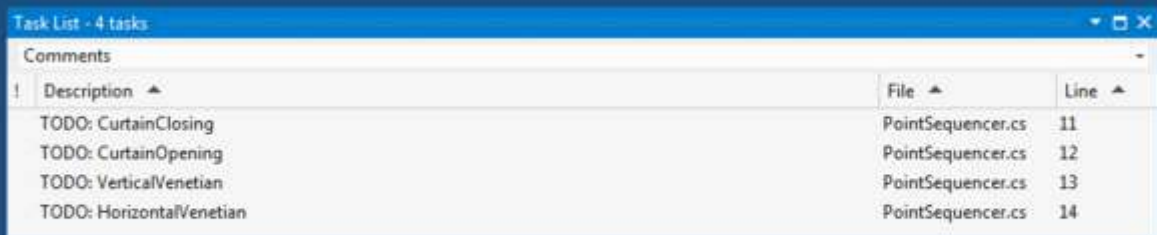
### Key points

- Automated rule checks to highlight common issues
- BUT: key to make it work for you
- Tip: Create a dedicated "Analysis" build configuration, so that "Debug" stays fast but you have the analysis to hand
- Tip: Create a custom rule set, check it in as part of your source; customize the rule selection to suit your situation
- Tip: Let the tool train you into writing better code that doesn't need cleanup

# Task List

Don't keep everything in your head

- 🕒 Based on comments in your code
- 🕒 Can add your own Tags



Task List - 4 tasks

Comments		
Description	File	Line
TODO: CurtainClosing	PointSequencer.cs	11
TODO: CurtainOpening	PointSequencer.cs	12
TODO: VerticalVenetian	PointSequencer.cs	13
TODO: HorizontalVenetian	PointSequencer.cs	14

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Take the advice of GTD guru David Allen and don't rely on keeping your todo list in your head.

## Demo

- View|Task List -> Comments
- Quick Launch "Task" -> Options | Environment | Task List
- Add "Bug" "Perf"

## Key points

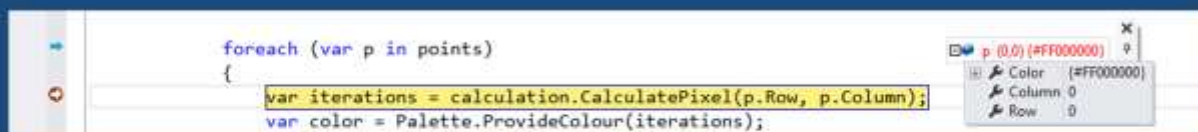
- A list of things to do, based on comments in your source.
- Different tags for different needs
- Simple implementation that might be a performance bottleneck – add a PERF comment with details of the faster way
- Know of an edge case that might bite but you don't have time? Add a BUG comments with details of the required fix



# Debugging

## Better insight into how it works

- 🕒 [DebuggerDisplay]
- 📌 Pin Symbol to watch



When things go wrong and you break out the debugger, here's how to make it work for you.

### Demo:

- Breakpoint ForEach in FrameRenderer.Render, Run.
- Show how we have a point, but it's opaque. Stop.
- Set [DebuggerDisplay] on ColourPoint, rerun. Step several times, showing how it changes
- Pin it to the source, then step several times more.

### Key Points

- Debugger display gives you essential information so you know which instances are interesting
- Pinned watches make it easier to see what's going on

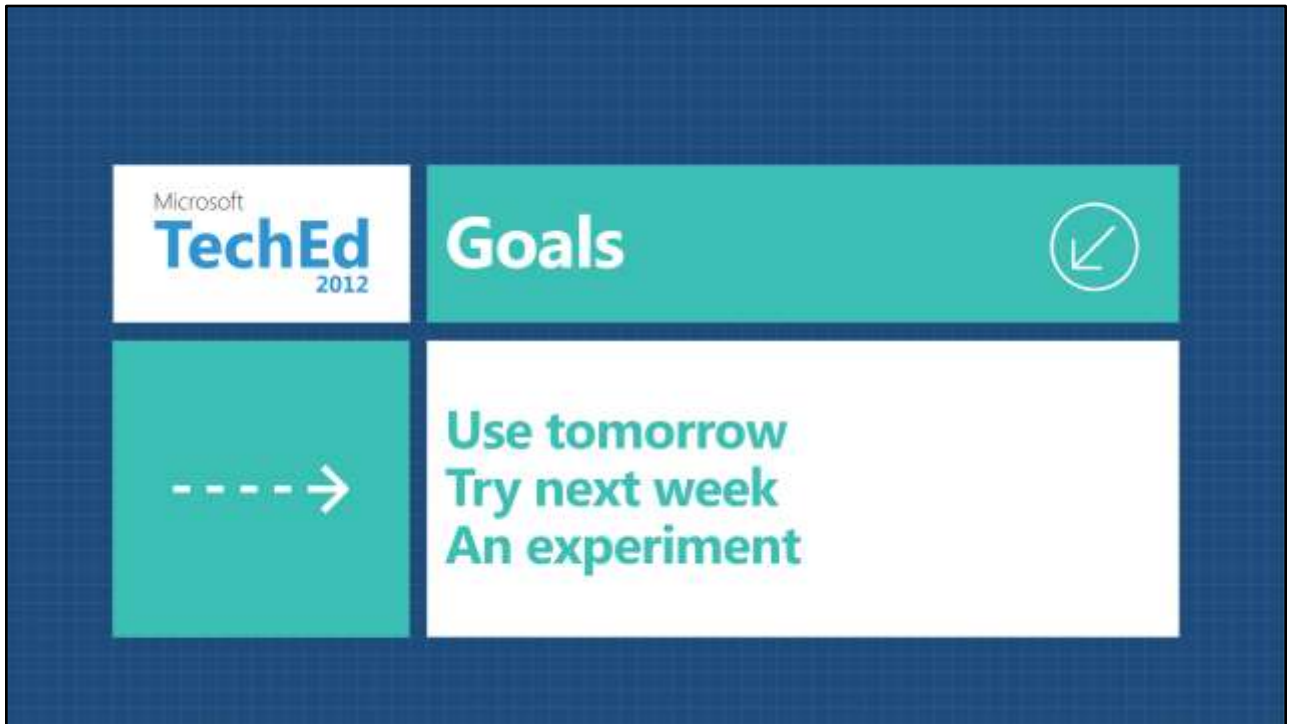


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## Summary



**Environment**  
**Understanding**  
**Navigation**  
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# Related Content

## 🕒 Breakout Sessions

- 🕒 DEV201: What's new in Visual Studio 2012
- 🕒 DEV307: Single Line Solutions from the .NET Framework
- 🕒 DEV314: What's New for Unit Testing in Visual Studio 2012

## 🕒 Contact Me Later By...

- 🕒 Email: [bevan@nichesoftware.co.nz](mailto:bevan@nichesoftware.co.nz)
- 🕒 Twitter: @unrepentantgeek
- 🕒 Blog: <http://www.nichesoftware.co.nz>

# Track Resources

🕒 Resource 1

🕒 Resource 2

🕒 Resource 3

🕒 Resource 4

## Required Slide

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**Track Owners** will supply the content for this slide, which will be inserted during the final scrub.

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Resources for IT Professionals  
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 msdn

Resources for Developers  
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# DEVELOP WOW



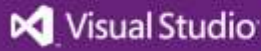
Prepare to code greatness.

See how as we launch the new  
Microsoft Visual Studio 2012.

Code Camp and Visual Studio 2012 Launch – this weekend – 9 September at Auckland University Business School – FREE  
[mscommunities.co.nz/codecamp.aspx](http://mscommunities.co.nz/codecamp.aspx)

Save the date – 13 September NZ time – and REGISTER NOW to attend the free virtual event:  
[visualstudiolaunch.com](http://visualstudiolaunch.com)





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