

# Avoiding Boredom Using T4

(the Text Template Transformation Toolkit)

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# About Me

- More into Databases than coding
- Low boredom threshold
- New to T4 this year
- Wrote my first code generator in the 80's

# Agenda

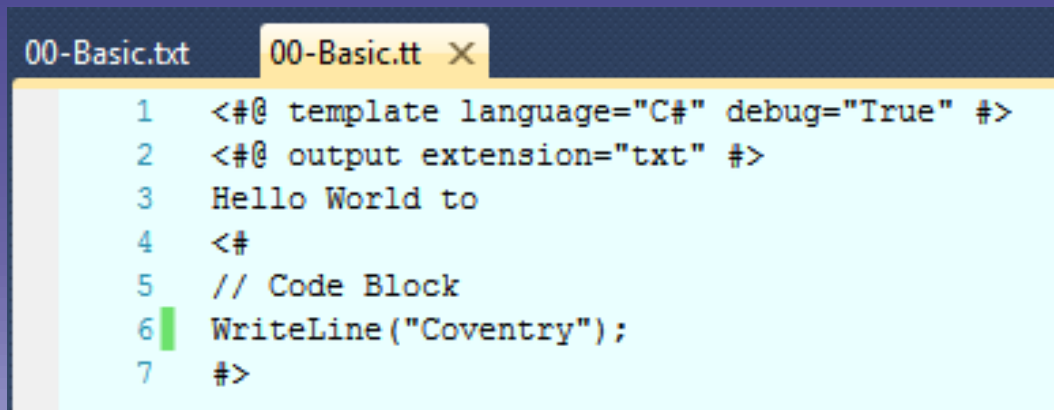
- What is T4
- T4 Editor & T4 toolbox
- T4 in action
  - Scripts
  - Templates
  - Generators
- What's new in VS2010

# What is T4

- Templating tool that can generate text files of any file extension
- Files generated can be included in builds without any user intervention
- Simple Classic ASP syntax style
- Scripts can be written in C# or VB.Net

# T4

- It is part of the standard installation (download in VS2005)
- No Syntax highlighting or IntelliSense as standard



```
00-Basic.txt 00-Basic.tt X
1 <#@ template language="C#" debug="True" #>
2 <#@ output extension="txt" #>
3 Hello World to
4 <#
5 // Code Block
6 WriteLine("Coventry");
7 #>
```

# T4 Editor

- Free and pro version (99.98 USD)
- Syntax Highlighting
- IntelliSense (very limited in free version)
- File includes  
and more

# T4 toolbox

- Open Source
- Output multiple files via 'Generators'
- Template class to allow template reuse
- Includes various ready to use code generators
  - EF, LINQ to SQL, T-SQL etc.
- Requires T4 Editor installed

# Demos



# T4 Irritants

- Template files (tt) second class citizen
  - Limited IntelliSense (with free T4 Editor)
  - Limited short cut keys e.g. No bulk comment
- Save on tt script actions code generation
- Very easy to make script hard to follow
- Debugging code generation exceptions hard (better in VS2010)

# What's new in VS2010

- Preprocessed Templates (put templates into your own DLLs)
- Include / Assembly directive improvements
  - reference environment & project variables
  - more than one level of relative path
- Debugging of code generation using second instance of VS
- MSBuild task for transforming templates at build time
- Deployment with VSIX packages (easier than building MSI)
- Parameter directive

# T4 Summary

- Saves time and bugs generating boiler plate code
- Easy to get started  
(With T4 Editor and T4 Toolbox)
- Limited in development environment
- VS2010 helps with debugging and deploying code generation

# Questions?

- Links & Demo Code [www.catalystcomputing.co.uk/NxtGenUG](http://www.catalystcomputing.co.uk/NxtGenUG)
  - T4 Editor:  
[t4-editor.tangible-engineering.com/T4-Editor-Visual-T4-Editing.html](http://t4-editor.tangible-engineering.com/T4-Editor-Visual-T4-Editing.html)
  - T4 toolbox: [t4toolbox.codeplex.com](http://t4toolbox.codeplex.com)
  - Other Resources
    - Articles & template downloads [www.olegpsych.com](http://www.olegpsych.com)
    - MSDN [code.msdn.microsoft.com/vsvmsdk](http://code.msdn.microsoft.com/vsvmsdk)
    - Adventure Works 2008  
<http://msftdbprodsamples.codeplex.com/releases/view/37109>
- email: [peter.marriott@catalystcomputing.co.uk](mailto:peter.marriott@catalystcomputing.co.uk)