PROJECT ROSLYN

Brian Rasmussen
Microsoft
Project Roslyn

Brian Rasmussen, Senior SDET
brianras@microsoft.com
Project Roslyn

- Compilers
- Rich APIs
- Extensibility
- REPL
- Scripting

CTP

VS2012 + N
where N > 0
Fixing Common Code Problems

**Issue**
Avoid `Count() > 0` on sequence

**Fix**
Change to `Any()`

**How**
Code Issue Provider and Code Action
Demo
Fixing Common Code Problems
Design Characteristics

Entering Roslyn

Immutable

Efficient

Complete

Fault Tolerant
Compiler Pipeline and APIs

Editor Services
- Code Actions
- Syntax Highlighting
- Inline Rename

Language Services APIs
- Workspace
- Find References
- Code Cleanup
- Source Code Generation

Compiler APIs
- Syntax
- Semantic
- Data and Control Flow Analysis
- Scripting

Components:
- Parser
- Symbols Metadata
- Binder
- IL Emitter
Exploring Code using the REPL

Diagnostics
Syntactic vs. semantic errors

Workspace
Loading a Solution

Examining Types and Symbols
Looking up the type of a “var”
Find References
Demo
The Roslyn APIs and C# Interactive
The Bigger Picture

Host Environment → Workspace

Solution → Solution² → Solutionⁿ

Compilation ← Project

SyntaxTree ← Document

Apply

Update

Update
Application Scripting with C#

Application
XNA Animation

Executing C# Script Code
ScriptEngine and Session

Host Object Model
Interface between application and script
Demo
Scripting
Projects

Compilify.net
Compile and run C# from the browser

Live C# (http://screencast.com/t/dR0qobSLN)
Immediate feedback

LearnParallelism.net
How developers use parallel libraries
Resources

Sites
Roslyn site (http://msdn.microsoft.com/en-us/roslyn)
C# FAQ (http://blogs.msdn.com/b/csharpfaq/)
Channel 9 (http://channel9.msdn.com/search?term=roslyn)

Questions
Roslyn CTP (http://social.msdn.microsoft.com/forums/en-us/roslyn)
Stackoverflow.com (http://stackoverflow.com/questions/tagged/roslyn*)
brianras@microsoft.com
Thank You!

Q&A

CTP

Feedback

Have Fun!