

# Creating and Debugging a Basic Diagnostic



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Roslyn

Template

Debugging

Testing



# Roslyn

The .NET Compiler Platform

Incremental

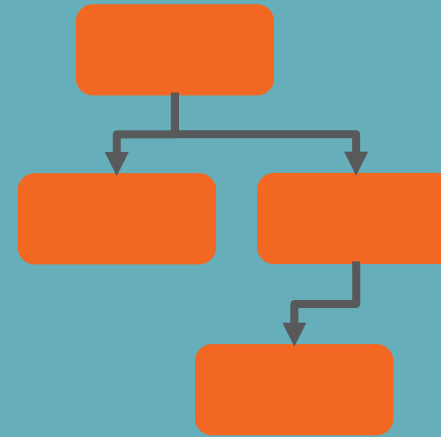
Multi-threaded

Uses immutable types

Fidelity round-tripping to source

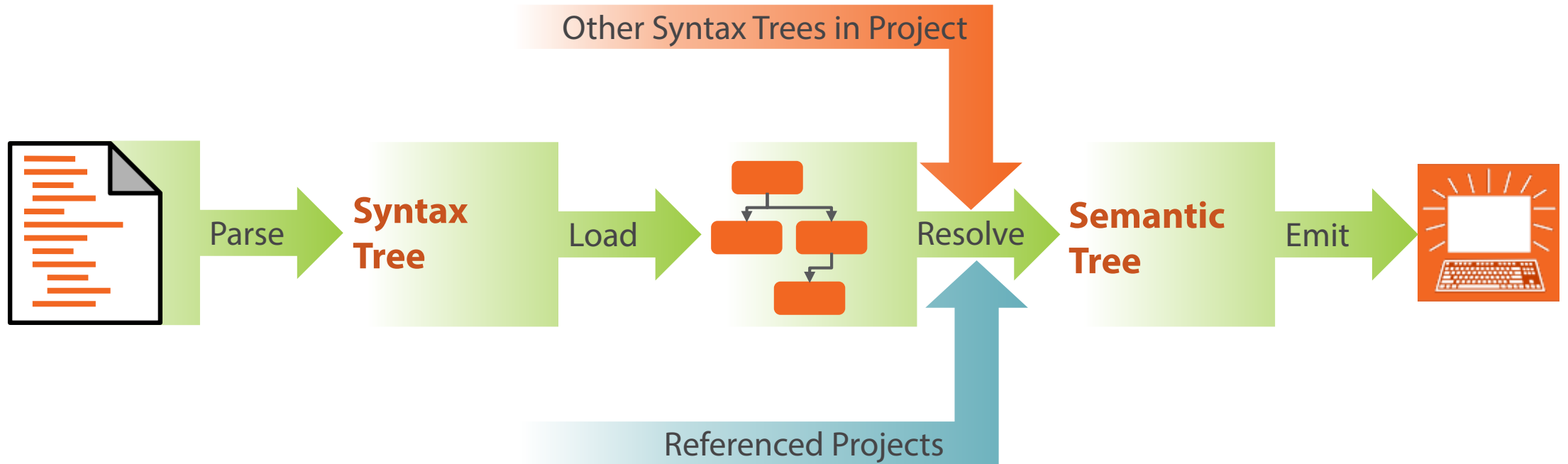


Syntax Tree

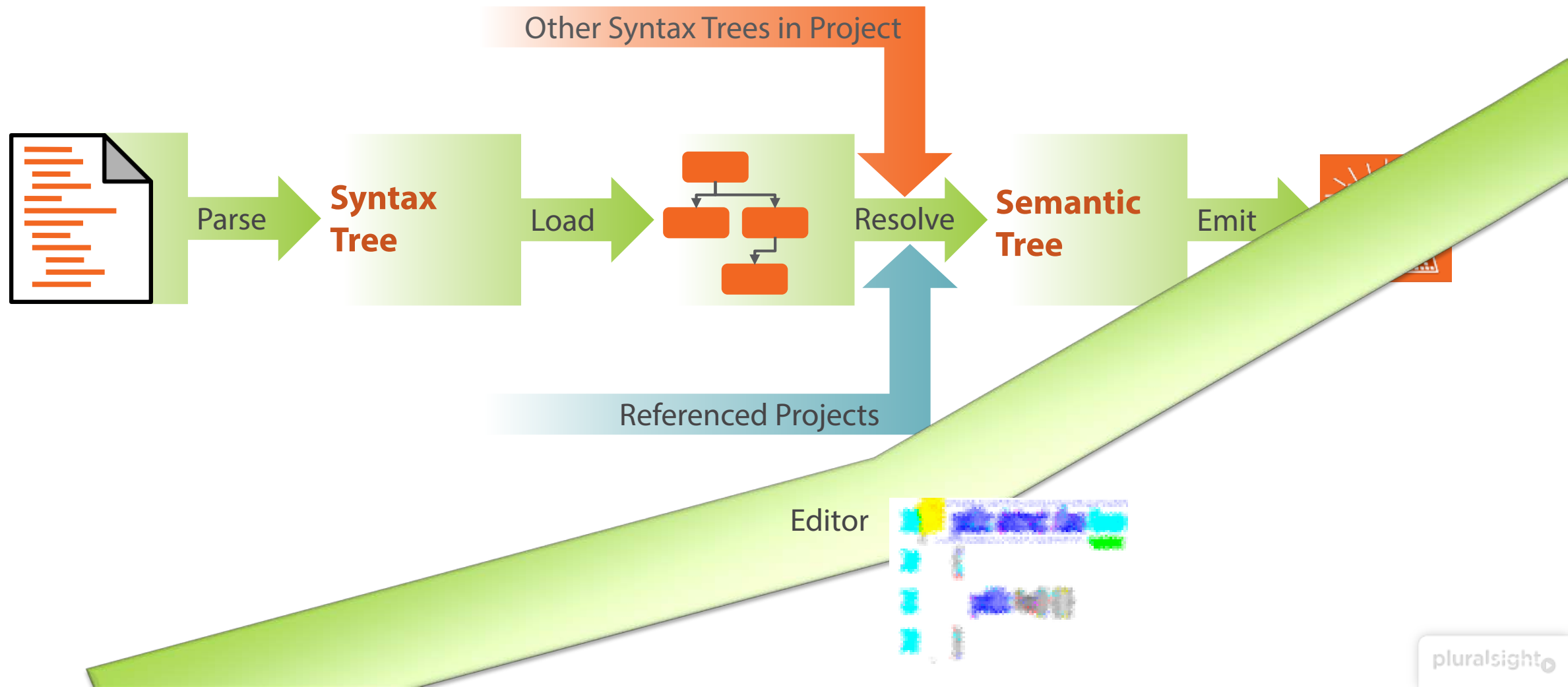


Semantic Tree

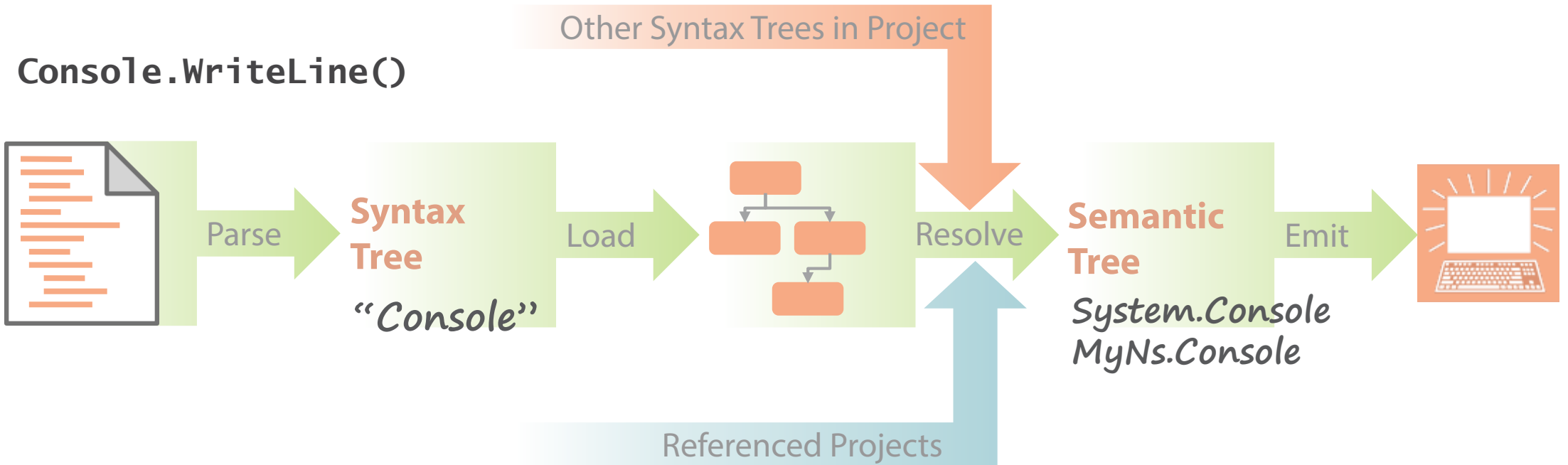
# Compilation Process



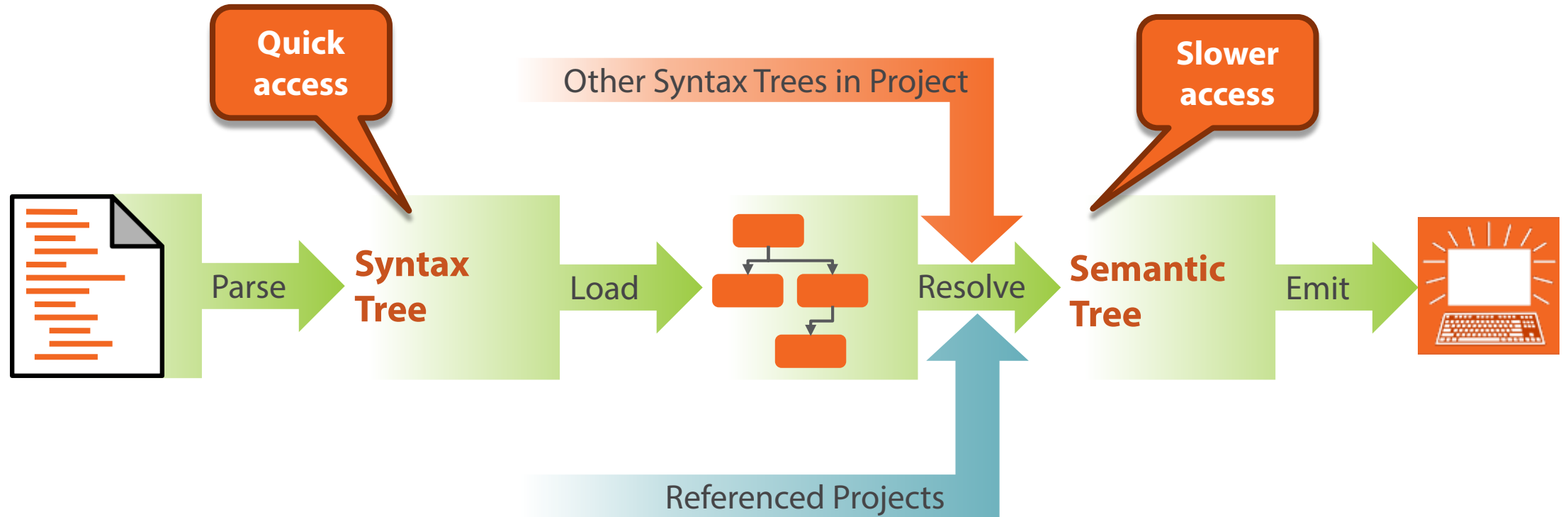
# Compilation Process



# Meaning is Built During Compilation

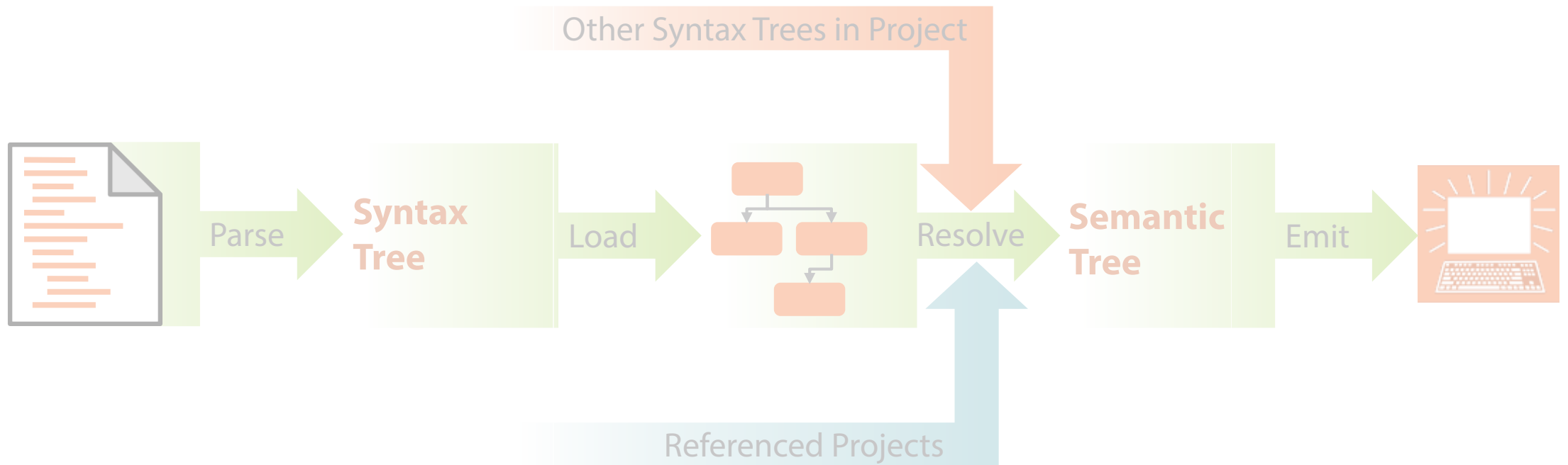


# Ease of Creation





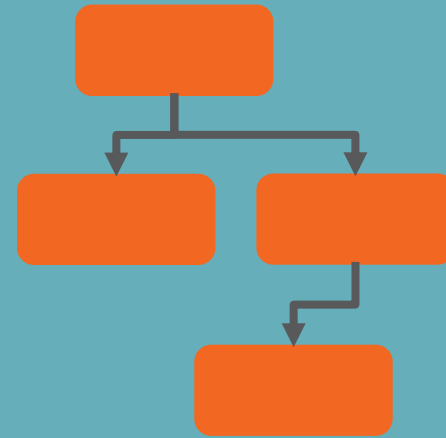
# Incremental Compilation





Syntax Tree

Your code



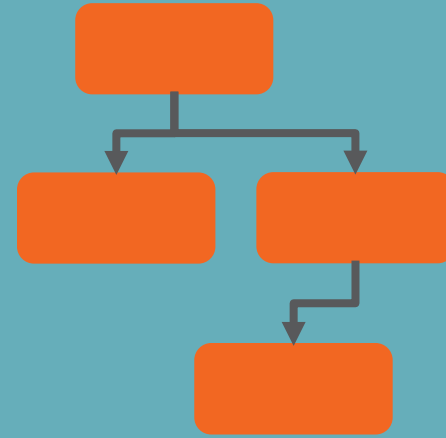
Semantic Tree

Everything



## Syntax Tree

Represents a single file  
Every aspect of the file  
Immediately available  
Hit very often



## Semantic Tree

Contains resolved info  
Only aspects for emitted app  
More expensive to load  
Hit less often

# Roslyn

Incremental compiler

Syntax trees represent the source code of a single file

Semantic trees contain symbols, types and meaning

Roslyn is complicated

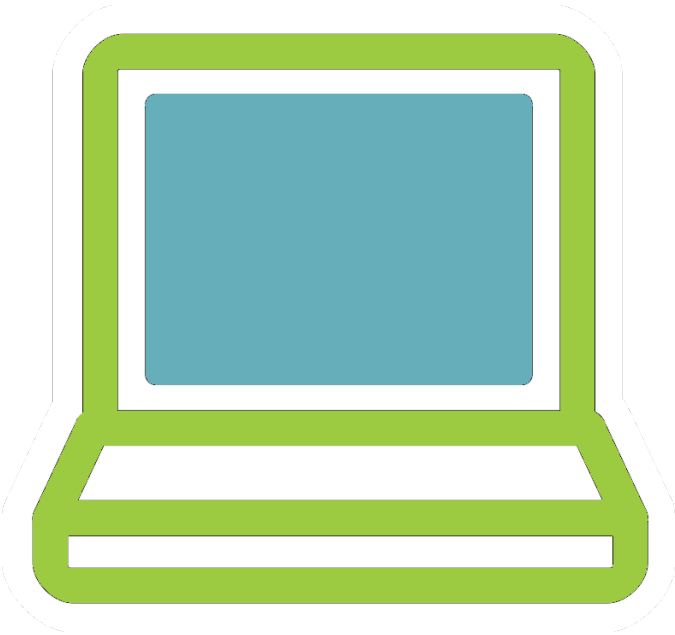
- Tools like Syntax Visualizer are important

# Preparing Your Machine



Install Visual Studio Preview in a Virtual Machine

# Preparing Your Machine



[www.VisualStudio.com](https://www.visualstudio.com)

- Visual Studio preview (install in a VM)
- Visual Studio SDK

Visual Studio Extensions:

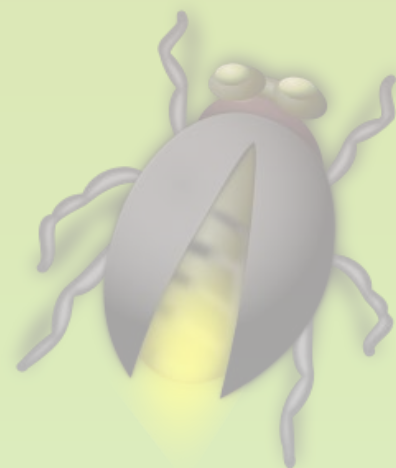
- .NET Compiler Platform SDK Templates
- .NET Compiler Platform Syntax Visualizer



**Create**



**Run**



**Debug**



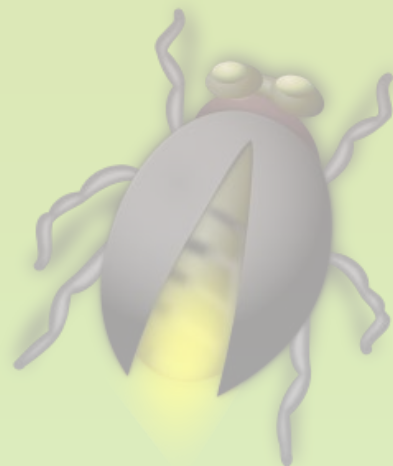
**Test**



**Create**



**Run**



**Debug**



**Test**





**Create**



**Run**



**Debug**



**Test**



**Create**



**Run**



**Debug**



**Test**

# Summary

Roslyn

Template

Debugging

Testing

Roslyn provides the data and hooks

Templates make creating analyzers easy

Debug with F5 and Experimental Hive

Test infrastructure provided with templates