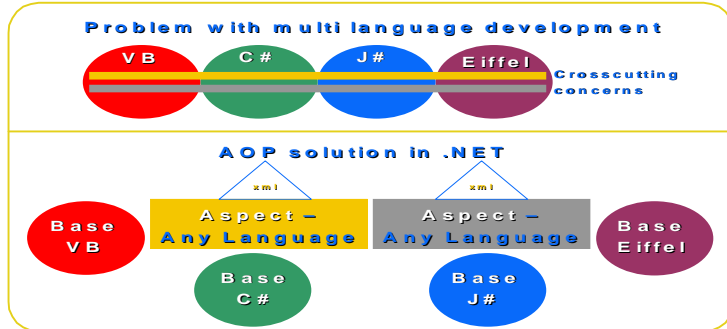


# SourceWeave.NET: Cross-language Source-Level Weaving

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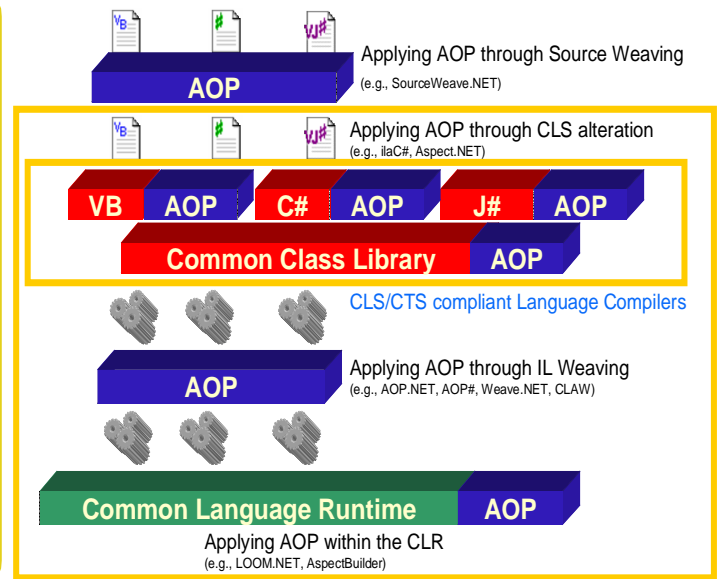
## Project Aims

- Support Language independant SOC
- Through a rich joinpoint model
- At source code level
- Without any language extensions
- Without any platform modifications

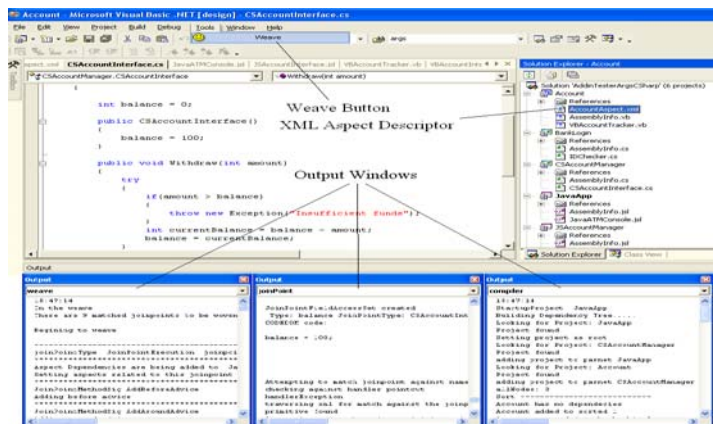
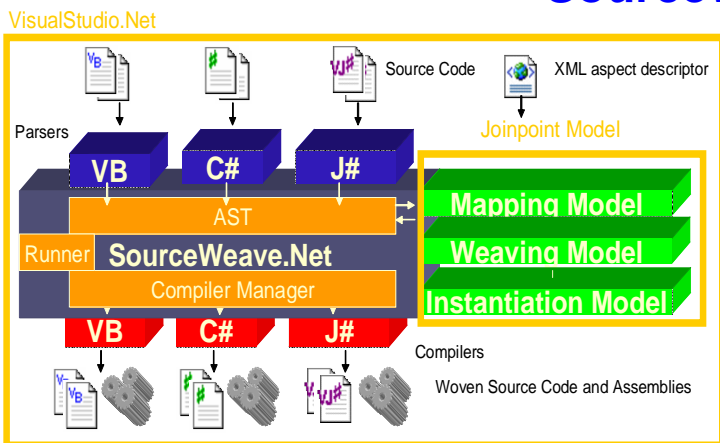
## AOP in .NET

Strategies for extending .NET for language independant AOP are:

- 1 CLI or CLR alteration**  
Performance degraded, Primitive + intrusive joinpoint model
- 2 IL manipulation**  
Generally Primitive joinpoint models, breaks binding between IL and source code, cannot debug
- 3 CLS/CTS or compiler alteration**  
Changing core framework and coordinating the change with language providers is infeasible
- 4 Source code manipulation**



## SourceWeave.NET



## Process

- Parsers** - convert base and aspect source code into a CodeDom AST graph
- Mapping model** - identifies joinpoints as specified in the XML Aspect Descriptor
- Weaving and Instantiation model** - weaves the crosscutting behaviour at the joinpoints
- Compiler Manager** - maps woven code back to original language and compiles

## Future Work

- Extend CodeDom and implement CodeDom Tools
- Creation of an Aspect Descriptor Wizard allowing developers to avoid writing verbose XML documents for describing aspects
- Extend pointcut designators to include language differentiators and language specific constructs