Software Analysis and Comprehension
Project Proposal: srcML Tool Implementation on a C# Environment

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Description:

Common, or global, coupling happens when two modules share the same global data. Therefore, changing the shared resource implies changing all the modules.

The proposed project is an implementation of srcML to detect Common Coupling. The programming languages that srcML supports are those written in C, C++, C#, and Java. In this project we will use source code written in C#, and the tool will be implemented using Microsoft Visual Studio.

Specific technologies to be used:

srcML for Windows (32 bits)
srcML.NET for Visual Studio (ABB.SrcML.VisualStudio.Interfaces 3.1.11.26)
Visual Studio 2015 (Community)
Source Code in C# from projects to be selected. The following project are being considered:
- Mono: Mono open source ECMA CLI, C# and .NET implementation.
- MonoGame: One framework for creating powerful cross-platform games.
- Newtonsoft.Json: Json.NET is a popular high-performance JSON framework for .NET.
- Codehub: App to browse and maintain your GitHub repositories on any iOS device.

Sando for Visual Studio, to consume srcML and perform searches.

Major deliverables:

Step-by-step tutorial to setup srcML in Visual Studio.
Original source code in C#.
Output in srcML format of the C# code used for analysis.
Final Report describing the work done.

Considered References:

Maletic, J., and Collard, M., 2015, *Exploration, Analysis and Manipulation of Source Code Using srcML.*
Maletic, J., Decker, M., and Collard, M., 2013, *srcML: An Infrastructure for the Exploration, Analysis and Manipulation of Source Code: A Tool Demonstration.*

Maletic, J., Decker, M., and Collard, M., 2011, *Lightweight, Transformation and Fact Extraction with the srcML Toolkit.*

srcML C# Language Documentation. Retrieved from: http://www.srcml.org/doc/cs_srcML.html

srcML.NET Roadmap. (2015) Retrieved from: http://vinayaugustine.com/2015/11/13/srcml-net-roadmap/