

Laboratórios de Desenvolvimento de Software - LEI

Visual Studio

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Visual Studio

- Visual Studio rapid coding features:
 - Class designer;
 - Code snippets and refactoring;
 - Testing;
 - Documentation.

C# Preliminaries

- Classes
 - Fields;
 - Methods;
 - Properties;
- Interfaces;
- Enumerations;
- Structs;
- Attributes.

Code Snippets

- Pre-defined chunks of code that improve productivity;
 - Frequently used structures;
 - Code patterns hard to remember;
- Visual Studio includes default code snippets and allows the user to create new ones.

Code Snippets

- Storing code chunks;
- Insert snippet;
- Surround with snippet.

Class designer

- Eases the generation and refactoring of classes;
- Is dynamically synchronized with the code;
 - Both the code and the diagram are always up to date.

Class designer

- Entities
 - Type of .NET (classes, interfaces, enums, ...);
 - Each has particular properties;
- Connectors
 - Relations between entities (inheritance, association).

Refactoring

- Consists of reworking code without changing its functionality.
 - Simplifying methods;
 - Extracting commonly used code patterns;
 - Optimizing code;
 - Renaming.

Refactoring Actions

- Extract method;
- Encapsulate field;
- Extract interface;
- Manage method parameters;
- Rename;
- Promote Variable to Parameter;
- Method stubs;
- Organize usings.

Testing

- Testing is an essential component of software development;
- It involves repetitive and error-prone tasks;
- Visual Studio has built-in support for unit test generation.

Testing

- Test classes are defined in a separate project;
- Test cases are defined to assert the behavior of the unit;
- Visual Studio helps managing large number os test cases;
- Also support for advanced testing (like tests over ranges of values).

Documentation

- Defined through XML comments;
 - Can be use to generate documentation;
 - Is also used by IntelliSense to improve productivity.

Documentation

- Visual Studio recognizes and interprets a set of special tags:
 - `param`
 - `returns`
 - `exception`
 - `code`
 - `example`
 - ...

Bibliography



N. Randolph, D. Gardner, M. Minutillo and C. Anderson
Professional Visual Studio 2010.
Wrox, 2010.