**Game-Fifteen-5**

**Refactoring Documentation**

# Refactoring source code

* Format the code with Ctrl+K+D
* Put { and } after all conditionals and loops statements
* Remove empty lines and separate methods, conditional and loop blocks with an empty line
* Put all key words for a particular expression on the same line
* Split lines containing long statement and conditional statements into Boolean variables

# Redesigned project structure

* Created **Game.Common** project
* Created **Game.Core** project
* Created **Game.UI** project
* Extracted all classes in separate files, which are placed in an appropriate folders
* All enums are separate in different files
* Unit test project added to the solution
* Windows Forms project added to the solution

# Naming refactoring

* Change all variables names into camelCase
* Change all private fields into \_camelCase
* Change all properties methods, classes, interfaces, solution into PascalCase
* Every magic number or string is put at region Constants in their classes
* All fields that are not changed in properties are made readonly

# Class refactoring

* Each class is designed by the SOLID and DRY principle
* Access modifiers introduced to all classes
* Documentation added where necessary

# Methods refactoring

* Make methods testable
* Access modifiers introduced to all methods
* Documentation added where necessary

# Design patterns introduced

### Creational:

* Singleton
* Prototype

### Structural

* Flyweight
* Decorator
* Bridge

### Behavior

* Command
* Strategy
* Iterator
* Observer
* Template Method

# Final refactoring

* Refactored all files with StyleCop
* Refactored all files with JustCode