**Homework: High Quality Classes**

This document defines the homework assignments from the ["High Quality Code" HYPERLINK "http://softuni.bg/courses/high-quality-code/" Course @ Software University](http://softuni.bg/courses/high-quality-code/). Please submit as homework a single **zip** / **rar** / **7z** archive holding the solutions (source code) of all below described problems.

* **Abstraction**

Use the VS **solution** "**Abstraction**".

* Refactor its code to provide good abstraction.
* Move the properties and methods from the class Figure to their correct place.
* Move the common methods to the base class's interface.
* Remove all duplicated code (properties / methods / other code).
* **Encapsulation**

Use the VS **solution** "**Abstraction**".

* Establish good encapsulation in all classes.
* Ensure that incorrect values cannot be assigned in the internal state of the classes.
* **Cohesion and Coupling**

Use the VS **solution** "**Cohesion-and-Coupling**".

* Refactor its code to follow the principles of good abstraction, loose coupling and strong cohesion.
* Split the class Utils to other classes that have strong cohesion and are loosely coupled internally.
* **Inheritance and Polymorphism**

Use the VS **solution** "**Inheritance-and-Polymorphism**"

* Follow the best practices in high-quality classes.
* Redesign the classes and refactor the code.
* Extract abstract base class and move all common properties in it.
* Encapsulate the fields and make sure required fields are not left without a value.
* Reuse the repeating code though base methods.