# Homework: High Quality Classes

This document defines the homework assignments from the ["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.

<https://softuni.bg/Forum/3299/Homework-KPK-QualityClasses-4-Inheritance-and-Polymorphism-avtomatichno-izvikvane-na-ToString>

## 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.