# Teamwork Project Assignment ([C# OOP Course @ SoftUni](https://softuni.bg/courses/csharp-oop-advanced-high-quality-code))

Design and implement **a C#-project** by choice. It could be a well-known game like Minesweeper, Tetris or Xonix or a game designed by your team, **but it better be a Role-Play Game (RPG)**. You may also create project different than a game, but it must strictly follow the criteria.

You, as a team, are **free to decide** what platforms, development tools and team collaboration tools to use. You might perform live meetings at SoftUni or at some other location, online meetings, use chat systems, organize mailing lists, Facebook groups, use project management tools, **source control tools (this is mandatory)** and any other technical and non-technical resources to build your project, but please **work in a team**. Each team member should be able to **prove his or her contribution** during the project live defense. Remember that each team member will get **equal score** at the project public defense.

You will be distributed in a team with 4-5 other students.

## General Requirements

* **Use C#** – the entire work should be implemented in C#
* **GUI, console-based application or web application**
  + You may use some GUI library like Windows Forms or WPF
  + **Do not use game development engines like Unity, Unreal, etc.**
* **Work in a team** – all team members should contribute
* **Use Git Version Control System and a public repository (e.g. GitHub, Bitbucket, …)**

## Deliverables

Submit a link to a source control system (e.g. Github) or a file repository (like Dropbox) containing the following:

* The complete **source code** of your project.
* A **presentation** of your project (e.g. PowerPoint slides) or other **brief documentation** (1-2 pages) of your project. It should provide the following information:
  + Project name and purpose – what you have created
  + Team name, list of team members
  + Contributions of each team member
* Any other information (optionally)

## Minimum Requirements

**You must fulfil every single criterion listed below. If these requirements are not met, you won't get any points for your project.**

Please define and implement the following object-oriented assets in your project:

* At least **10 interfaces** (with one or more implementations)
* At least **15 classes** (implementing the application logic)
* At least **1 abstract classes** (with inheritors)
* At least **1 custom exception class** (with usage in your code)
* At least **3 levels of depth in inheritance**
* At least **1 polymorphism usage**
* At least **1 enumeration**
* At least **1 event** (with subscribers)
* At least **1 design pattern** (e.g. Composite, Singleton, Factory, Wrapper, Bridge, Command, etc.)

You might read about design patterns in [Wikipedia](http://en.wikipedia.org/wiki/Software_design_pattern), [Sourcemaking](http://sourcemaking.com/design_patterns), [DoFactory](http://www.dofactory.com/Patterns/Patterns.aspx) and others.

## Assessment Criteria

* **Project** – **25**
  + **Code Quality** (correct use of patterns, following language conventions, etc.)
  + **Functionality** (rich and seamless functionality, demonstrating application of course material will be scored higher)
* **Teamwork** – **50**
  + **Source Control** (use of Issues, Branches, regular commits by all team members)
  + **Task Management** (coherent implementation process, following increment steps)
  + **Project Scope** (you've met all goals that you started with)
  + **Team Communication** (team members are kept up to date with each other's progress)
* **Defense** – **25**
  + **Answer Questions** (defend your work!)
* **Bonus** – **10** (awarded for achievements outside this assignment)

## Public Project Defense

Each team will have to deliver a **public defense** of its work in front of the other students, trainers and assistants. Teams will have **only 10 minutes** for the following:

* **Demonstrate** the application (very shortly).
* Show the **source code** and explain how it works.
* Explain how each team member has **contributed**.
* Optionally you might prepare a **presentation** (3-4 slides).

Please be **strict in timing**! Be **well prepared** for presenting maximum of your work for minimum time. Bring your own laptop. Test it preliminary with the multimedia projector. Open the project assets beforehand to save time. You have **10 minutes**, no more.

## Give Feedback about Your Teammates

You will be invited to **provide feedback** about all your teammates, their attitude to this project, their technical skills, their team working skills, their contribution to the project, etc. The feedback is important part of the project evaluation so **take it seriously** and be honest.