**OOP Team "Avocado" – 2d Space Shooter  
(Documentation)**

<https://github.com/stoberov/TeamAvocado-GameProject-OOP>

This is the documentation for the team work assignment for the OOP course of Telerik Academy. The main idea of the project was to simulate a company’s working environment by having eight people working together on a project and to motivate the students to show what they’ve learned during the course.

**Summary of the game:**

A rather simple, yet a very fun to play 2d shooter game created using the XNA game studio 4.0 for Visual Studio. The main point of the game is to kill enemy ships, avoid colliding with the incoming asteroid and get the best highscore possible. To make the game more interesting it contains 4 different types of enemy ships, each having different characteristics (such as speed, shooting speed, bullet delay, health, etc). There are also bonuses such as health and ammunition which aid the player on his way of achieving a new personal best highscore. The player’s ship is moved using the “WASD” keys and bullets are being shot by either pressing or just hold the spacebar button. The game is initially started by pressing Enter.

**Fulfilled mandatory and optional requirements:**

1. **5 interfaces** – ICollidable, IControllable, IDestructable, IEnemy, IMovableObject, IProjectile, IRenderable, IShooting (All of which can be found in the Interfaces folder)
2. **15 classes** – Asteroid, BonusDamage, BonusHealth, Explosion, HUD, NormalEnemyBullet, Player, PlayerBullet, PowerEnemy, BossEnemy, CommandoEnemy, DefaultEnemy, SoundManager, SoundPublisher, SoundSubscriber, Starfield, GameEngine, Program (entry point of the program which starts the engine)
3. **3 abstract classes** –MovingObject, BonusObject, Ammunition, Ship, Enemy
4. **3 levels of depth in inheritance** – MovingObject – Ship – Enemy – (Enemy type)
5. **1 polymorphism usage** – List<IEnemy>, List<BonusObject>
6. **1 structure** – SoundCaller
7. **1 enumeration** – State (Holds the different states of the game)
8. **1 event** – Sound classes
9. **1 design pattern** – SoundManager,Starfield(creational design pattern Singleton)
10. **Constants** – in all enemy classes and other classes as well
11. **User interface (UI)** – The whole game has graphics
12. **1 custom exception class –** DeadPlayerException.cs (thrown when player health reaches zero);

**List of team members who took part:**

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