**TEAM “Jodi-Picoult”**

*Project Documentation*

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1. **Team Members**

*All six members of team “Jodi-Picoult” are listed in the table below (in alphabetical order).*

|  |  |
| --- | --- |
| *Name* | *Student System Username* |
| Geno Genov | G.Genov |
| Georgi Mitev | g\_m\_mitev |
| Krasimir Zarev | KrasiBenassi |
| Krum Bagashev | skloser |
| Simeon Tzvetkov | STzvetkov |
| Teodor Karabeliov | teodor\_k |

1. **Project Description**

Our team has decided to create a game dedicated to the most adventurous, romantic, dangerous and … profitable profession in the history, i.e. – the piracy. But not the one related to torrents, keygens, zamunda.net, etc. It is the original, bloodthirsty, with pistols in both hands and sword in their jaws, a bit ragged, but bold and brave gentlemen of fortune that we want to impersonate with our player. Or at least their captain. Or maybe just the ship? Every big undertaking has its humble beginning.

The player is given control over a pirate ship which he/she could move about the play field – a part of the great ocean with islands, settlements … and of course enemy ships (see the attached screenshot below). When the player-controlled ship collides with the most unlucky sea vessel this day in the open sea, a battle screen opens where a gunfight between the two ships takes place. When the Player wins the battle (any doubts about this ending?), he exits the battle mode and continues to roam the seas in search for new prey.

The RPG aspect of the game includes various upgrades of the ship and items collected after successful battles or (if lucky enough) from ship wreckages found after severe storms. Those upgrades (of hull, weaponry, etc.) affect the battles, the ship speed, etc.

There is an economic element in the game as well. All the civilian settlements on the shores have some specialization: trading centers produce either trading goods, grains or fruits; fishing villages produce … fish (what a surprise!); oil platforms prod… ops! This is for a future release ☺

Global map:



Battle mode:



* 1. Structure of the project

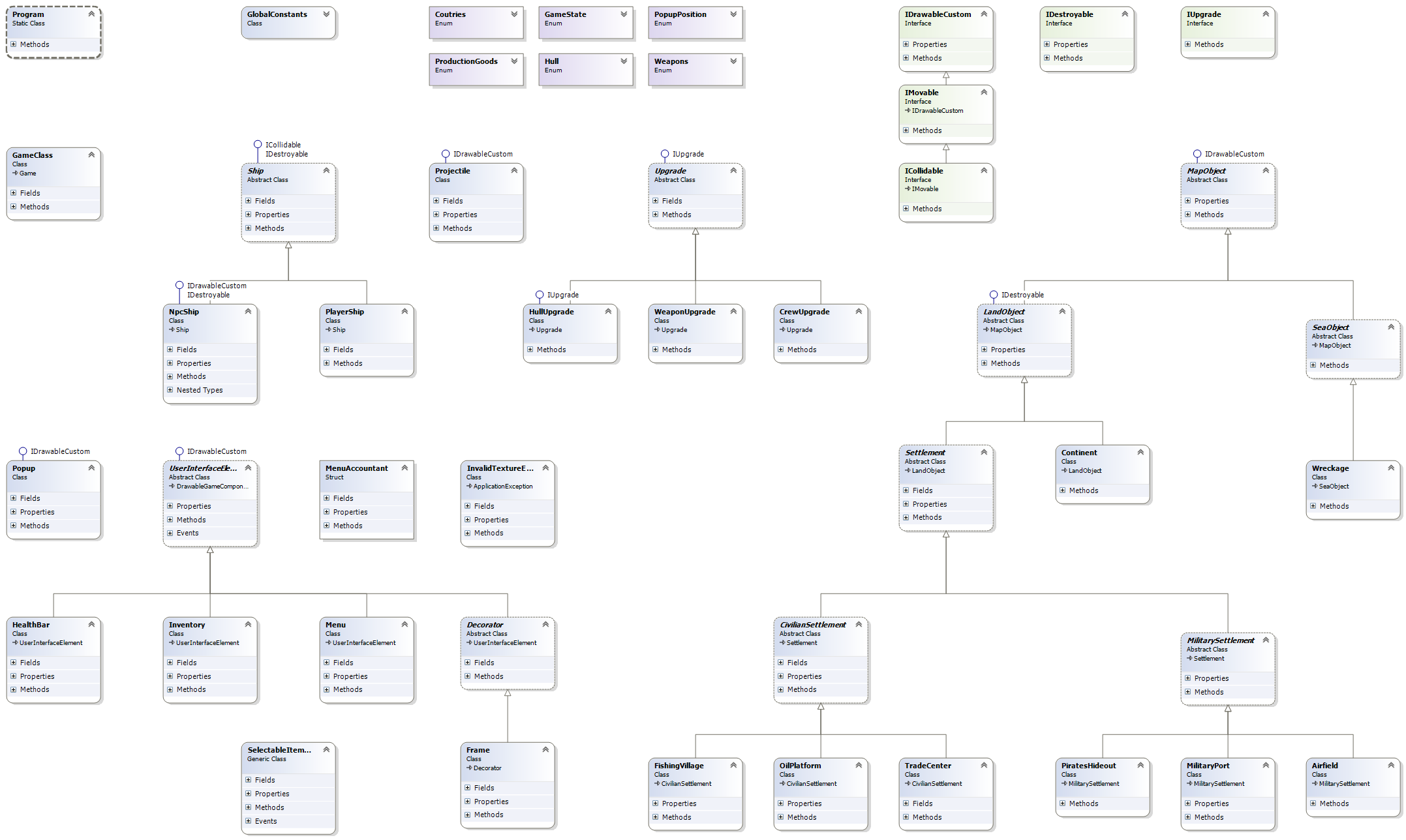
The game’s design follows the main concepts of the object-oriented programming. There is a corresponding class for each object from the real world: ship, upgrade, settlement (all kinds of), projectile, etc. Classes are organized hierarchicaly by proper using of inheritance (see the class diagram below). There are interfaces defining each “ability” a specific class can implement (examples: IDestroyable, IMovable, IUpgradable – pretty descriptive names).

The Monogame framework was used for the implementation of the graphics, time management and other important features of the game.

* 1. Requirements coverage

1. At least 5 interfaces – 5 IDrawableCustom, IMovable, IColidable, IDestroyable, IUpgrade
2. At least 15 classes - 31 GameClass, Projectile, Popup, UserInterfaceElement, HealthBar, Inventory, Menu, SelectableItem, Decorator, Frame, Ship, PlayerShip, NpcShip, Upgrade, HullUpgrade, WeaponUpgrade, CrewUpgrade, MapObject, SeaObject, Wreckage, LandObject, Continent, Settlement, CivilianSettlement, FishingVillage, OilPlatform, TradeCenter, MilitarySettlement, PiratesHideout, MilitaryPort, Airfield
3. At least 3 abstract classes – 9 UserInterfaceElement, Decorator, Ship, Upgrade, MapObject, SeaObject, LandObject, Settlement, CivilianSettlement, MilitarySettlement
4. At least 1 exception class – 1 InvalidTextureException
5. At least 3 levels of depth in inheritance – 5
6. At least 1 polymorphism usage – 3
7. At least 1 structure – 1 MenuAccountant
8. At least 1 enumeration – 6 GameState, PopupPosition, Countries, ProductionGoods, Hull, Weapons
9. At least 1 event – 7 OnOpen, OnClose, OnExit, OnPlay, OnSelect, OnShaw, OnHide
10. At least 1 design pattern – 1 Decorator – UserInterfaceElement, Decorator, Frame

Class diagram



1. **Git Repository**

*This is the URL of our Git Hub repository (****Project “Jodi-Picoult”****):*

<https://github.com/STzvetkov/Jodi-Picoult>