Implementation Report

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This document aims to highlight and justify the modification of the software between assessment three and four to accomodate for the updated requirements and architecture.

Repository Link: https://github.com/SEPR4/APirateGame
NB: Submission content on "master" branch.

(+) - New Class, **(*)** - Modified Class, **(-)** - Removed Class

Implementation changes	Justification
Crew Members (Upgrades) [Req 2.20] To fulfill this new requirement we have added a selection of CrewMembers (upgrades) unlocked after defeating each College boss. They can be selected with 2-6 number keys (num 1 back to default shot). We had previously planned on being able to upgrade the player's ship via item collection, however, based on the new requirement we decided to change this system into the CrewMember system which more clearly meets the requirements.	
(+) CrewMember class	Abstract class defining variables common to all crew members, including: id, name, key (to active) and cost. Includes abstract method 'fire()' which triggers the CrewMember's ability.
(+) CrewBank class	Class to register and store all classes implementing CrewMember.
(+) DoubleShotCrew class	Class extending CrewMember which shoots two projectiles when activated. This CrewMember is unlocked after defeating the first college.
(+) FireShotCrew class	Class extending CrewMember which shoots a flaming projectile when activated and on contact with an enemy ship, sets it on fire. This CrewMember is unlocked after defeating the second college.
(+) BoostCrew class	Class extending CrewMember which gives the player a speed boost when activated. This CrewMember is unlocked after defeating the third college.
(+) PowerShotCrew class	Class extending CrewMember which shoots a single, powerful projectile when activated. This CrewMember is unlocked after defeating the fourth college.
(+) TripleShotCrew class	Class extending CrewMember which shoots three projectiles when activated. This CrewMember is unlocked after defeating the final (fifth) college.
(+) FireAnimation class	New animation class to visualize boats on fire as a result of new 'FireShotCrew' ability.
Kraken (Obstacle) [Req 2.8 & 2.21] In order to meet our existing requirement of encounters with non-pirate NPCs and the new requirement of an obstacle that must be avoided (not defeated), we have added the Kraken. This monster spawns, along with regular pirate NPCBoats, in the sea between colleges. The Kraken cannot be damaged and so must be avoided and is more powerful than similar difficulty boats but is much slower.	

(+) NPCEntity class	Abstract class defining variables common to NPCs in the game such as range and AI behaviour.
(+) NPCMonster class	Class extending NPCEntity specifying the appearance and behaviour of the new Kraken monster. The Kraken cannot be damaged and must be avoided, as per the requirements, therefore, moves slower than NPCBoats.
(*) LivingEntity class	Moved functions and variables specific to NPCs into new NPCEntity class.
(*) EntityManager class	Added new 'spawnEntities()' function to coordinate spawning of NPCs around the map. This includes spawning of College NPCBoats, Kraken and random NPCBoats.
Integrated Tutorial [Req 2.17] As part of our original requirements, we had planned to have a tutorial for the game. In order to meet this requirement, although not as fully as we might've liked, we have implemented an information screen at the start of the game.	
(+) HowToPlayScreen class	This class extends the Screen class and is presented to players at the start of a new game. It highlights the story, objectives and basic controls. If the player restarts the game from the EndScreen, they are not shown this tutorial.
Misc Changes.	
(*) MinigameScreen class	Cleaned up code from addition by previous team.
(*) PauseHUD class	Cleaned up code from addition by previous team and made useful additions such as displaying objective progress (colleges captured and crew members unlocked).
(*) StatsHUD class	Added 'Q' to display main game map (as opposed to zoom with 'M'). This aims to give the player more direction on where to go next (following the game's story).
(+) Art	New graphics for following elements: DepartmentScreen background, MenuScreen background, PauseHUD overlay, StatsHUD and MessageHUD borders, FireShot projectile, Kraken monster and it's wave projectile.