

GAME DESIGN DOCUMENT



WOLF
FLOW
GAMES

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1. Design History

End of March and first week of April → Concept, Index, Chapter 2, 3 (unless 3.5), 5.1, 5.2 (Almost done), 6, 7.1, 7.2, 7.3.

10/04/2017 → Game Design Document 1.0

17/04/2017 → Improved chapter 2.4.2 and chapter 5.2, started chapter 5.3.1

19/04/2017 → Extended chapter 5.2.1

29/04/2017 → Review of chapter 5.2.1 and 7.3

08/05/2017 → Review 7.2 and 3.4, improved 7.3

09/05/2017 → Chapter 3.5 started, 5.3 , 5.7

10/05/2017 → Chapter 3.1.1, 5.3.1

12/05/2017 → Completed the chapter 3.3

16/05/2017 → Modified chapter 5.2, removed an old feature that lock the channel once an arrh was scored

17/05/2017 → Chapter 5.5 Map scheme and canals

19/05/2017 → Added demographic statistics in chapter 3.1

22/05/2017 → Fixed some value in chapter 7.3.1

24/05/2017 → Flowcharts in chapter 5.7

27/05/2017 → Review of statistics in chapter 7.4

30/05/2017 → Chapter 11 (Sound Design)

02/06/2017 → General review of all chapters, some fix in each chapter

03/06/2017 → Visual References review

04/06/2017 → Wireframe of in-game screens, Chapter 5.3.1

07/06/2017 → English review

08/06/2017 → Chapter 8 (AI), Storyboard Trailer

09/06/2017 → Insert table chapter 3.5

10/06/2017 → Chapter 10 (Game World)

11/06/2017 → Chapter 6.1

12/06/2017 → Chapter 6 review

13/06/2017 → Chapter 5.3.1 , 5.7.3 complete

14/06/2017 → Chapter 9 (Story)

14/06/2017 → Chapter 14 Prototype

14/06/2017 → Final review

2. Game Overview

2.1 Game Title

“Forbidden Seas” game’s title is based on the concept and the idea behind the game itself. An unreal/fantasy world, located in the middle of a mysterious sea in which ships fight against each other.

2.2 Genre

“Forbidden Seas” is a blend between Multiplayer Online Battle Arena games(MOBA) and racing/pursuit based games.

2.3 Theme

The context of the game is a cartoonish and stereotyped piratical environment, enriched with dramatic elements and characters that come from different times and places around the world.

2.4 Vision Statement

“Forbidden Seas” is a MOBA game in which you control a fleet and fight against other fleet led by the other players, in order to obtain the greatest amount of treasures in the shortest possible time. It is inspired by the traditional “Capture the flag” game mode (CTF), spreaded in many multiplayer online games, but in this case the phase in which the player have to protect the flag and score a goal is emphasized. In “Forbidden Seas” when you catch the flag (symbolized by a treasure) you have to choose and navigate that channel in the map, among all the others, that will transfer you to the port in the fastest way possible, as soon as the race phase begin.

2.4.1 Game logline

There's a bunch of treasure around the seven seas! Go find these first of everyone and became the greatest pirate of all times, ARRH!

2.4.2 Gameplay synopsis

The game gives to the player the power to become the greatest captain over the seven seas. In order to establish her supremacy, she will have to recruit the cruelest and ferocious sailors around the world and create her own crew.

Once she has created her own crew, she is ready to fight in the biggest gold rush that the world has ever seen. The game is played in an aquatic arena in the middle of an unknown spot in the seven seas, the player with her own Flagship will have to fight against the other players and achieves more treasures than anyone else.

As many MOBA games, in Forbidden Seas the player takes a match against other players, from a minimum of 4, to a maximum of 8. Every match is structured in three phases, that follow one another without pause:

1 - In this phase the treasure is locked and cannot be obtained. During this time, the opponents have to gain "Reputation" performing some actions, like killing or damaging the enemies, or collecting coin floating on the water. Reputation is a currency used during a match to recruit other ships (at maximum two in addition to the admiral one), that will enlarge the player's fleet. These support ships act independently (controlled by AI) based on a behavioural type chosen by the player in real time. Also three power-ups spawns in the arena, meaning that the players have to fight to obtaining a power-up in addition to the Reputation. This phase eventually ends after a fixed amount of time.

2 - In the second phase the treasure is freely catchable, so from this moment on, every player has to be faster than the others and obtain the treasure. Once the treasure is catched, in any moment it can be lost by being killed; not only by enemy players, but also by sea monsters that spawn randomly in this phase (like the kraken or piranhas), or other games elements like mines. When the treasure is lost, it will remain floating in the same spot the ship transporting it was killed, ready to be catch by someone else. During this phase the power-ups will spawn regularly. If any support ship is destroyed, the player can just summon another one, if she have the required amount of Reputation. This phase ends when a player transporting the treasure successfully gains access to one of the channels in the map. (The behaviour of the support ships is described in chapter [8.2](#).)

3 - This phase starts when a player reaches one of the channels connecting the open sea to the ports. To score a point, named "ARRH", the player has to reach the chosen port with the treasure safely.

If a player loses the treasure inside a channel, unlike in open sea, the treasure will respawn in the center of the sea, where it was at the beginning of the match. Same occur if the player scores an "ARRH", at this time also every other player inside a channel will respawn in her spawn point. In this phase, the racing component is emphasized. This phase ends when the "ARRH" is scored or when the treasure is lost.

Phase 2 and 3 loops until a player collects a fixed number of "ARRH" or the time is up, accordingly to the game mode.

Every ship is equipped with two types of weapons that give to the player the possibility to perform a main attack and a special attack (more powerful, but less frequently usable). The player can control his own Flagship in this way: adjusting the speed of the boat, veer left or right, and perform an attack.

3. Audience, Platform and Marketing

3.1 Target Audience

The ideal target of our game consist of players who like the competition, in particular against other players, with a component of strategy dictated by the use of the attacks and their cooldown.

The killers: this kind of players like games where there is a component of competition, generally against other players, and the goal require to kill and shoot. This game have both the components, in fact the player needs to combat against other players in order to catch the power ups and the treasure, shooting and fighting. This kind of players don't like slow games, they like hectic and chaotic games, where the skilled player prevails on the lucky one. They like the "thrill of hunt", component that they can find in this game when they have to chase the player that has the treasure and stop her before she reaches the docks of the port. In the end they want to be rewarded during and after the play, in particular when they win. In this game they could play in the competitive mode to increase their grade and become the greatest captain ever!

This last aspect isn't only for the killer-type players, but is shared with the achiever one, that wants to unlock contents and level up. This game offers the possibility to increase the captain rank, gain reputation, and, since the player reaches a certain amount of reputation, to unlock special skins or boats.

The greatest amount of players that we estimate will play *Forbidden Seas* are 16-18 years old, but the average age will probably be higher, in fact we expect even 30+ years old players. Based on a poll of one of the most played MOBA we expect this distribution based on the age:

- 35% are 16-18 years old
- 25% are 19-21 years old
- 15% are 22-24 years old
- 11% are 13-15 years old
- 10% are 25-29 years old
- 4% other

Our servers will be located in north america, europe and asia, because we expect that most players will play from there.

Analyzing the game with the Bartle taxonomy of players type, we could see approximately the types of player that could like our game:

- Killer: 55%
- Achiever: 25%
- Socializer: 15%
- Explorer: 5%

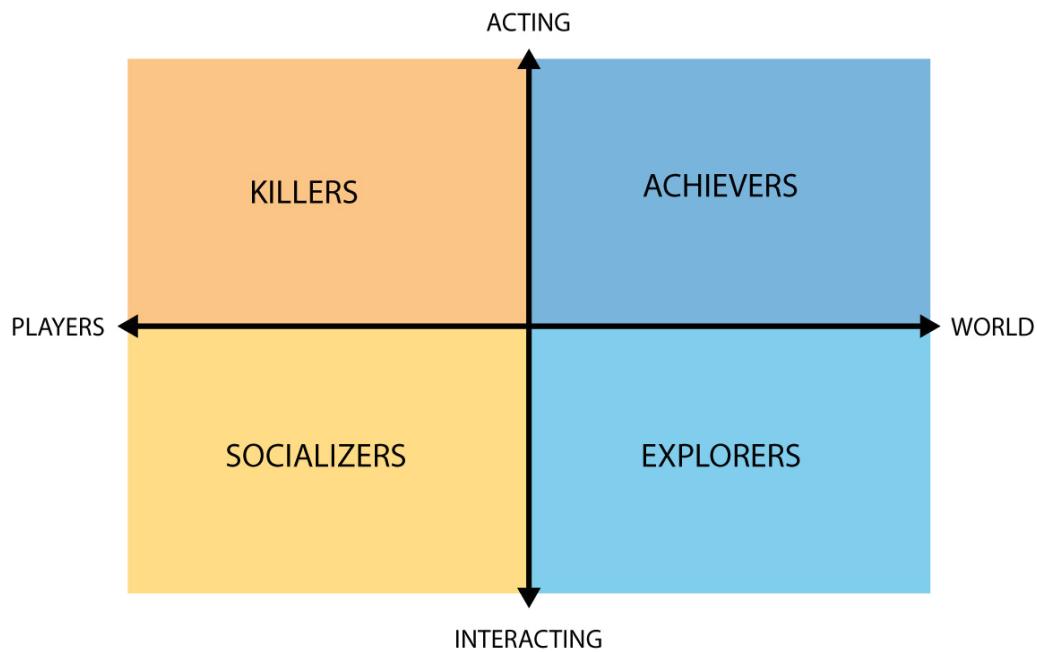


Fig. 3.1 Bartle's taxonomy scheme

It's possible to associate to every Bartle's type of player a different Keirsey-Stewart temperament. Those are generally evaluated using the Mayer-Briggs test for personality type indicator. So we can associate the four principal portraits (Artisan, Idealist, Guardian, Rational) to the respective types of player (Killer, Socializer, Achiever, Explorer).

Every principal portraits is divided in four subclasses, and in our case we are focusing on the Artisan subclasses, that are:

- Promoter
- Crafter
- Performer
- Composer

To know to which class you belong (16 in total) could be useful to do a personality test based on Myer-Briggs type theory.

3.1.1 Personas

James

- Age: 20
- Occupation: Engineer student
- Location: Boston, Massachusetts
- Personality test result: Champion (ENFP)

James is a student of engineering innovation at the Boston University, he moves and takes a house for rent with other 2 students. He spends the day studying and attending lessons. Once he returns home in the evening, takes dinner with his roommates and relax playing video games. He likes multiplayer games, because he likes to interact with people. He has got a Xbox One at his parent's house, and a mid-market computer. He and his roommate decide to take an 100Mb internet DSL flat contract.

Ewa

- Age: 26
- Occupation: Graphic designer
- Location: Warsaw, Poland
- Personality test result: Architect (INTP)

Ewa is a 26 years old girl, that has just graduated in cinematography & post production at the Warsaw film school. She likes to draw and paint and she wants to work in the cinematic sector, but she has found a work as graphic designer. She lives alone in an apartment and she has a powerful laptop that she uses for work and play, and she loves video games so she has got a PS4 and a Nintendo 3DS that uses when she takes the bus to go to work. She has a 100Mb flat connection.

3.2 Platform

The main target platform is the PC. It has been chosen it in order to let the players use mouse's wheel like a slider to adjust the speed of the ship. We want to use this specific type of input in order to give to the player more challenge and to experiment a different gaming experience compared to most widespread and famous MOBA games.

This feature won't exclude the possibility to design a similar input scheme for the gamepad. This would open the doors to the world of consoles, like PS4, XBOX One and also Nintendo Switch. But it would also bring other complications in terms of marketing stuffs.

3.3 System Requirement

3.3.1 Hardware Requirements

A Personal Computer with at least this requirements:

- CPU: SSE2 instruction set support
- 2GB RAM (Estimated)
- Dedicated graphic card with at least 1GB VRAM (Estimated)
- Graphics card: DX9 (shader model 3.0) or DX11 with feature level 9.3 capabilities
- Audio card
- Broadband internet connection
- Mouse and keyboard

3.3.2 Software Requirements

- OS: Windows 7, Mac OS X 10.10
- DX9 or OpenGL 4.0

3.4 Top Performer

We want now analyze the possible competitors for our game, because they have some elements in common, and we want to see what is the unique part of our game.

- **League of Legends:**

Developer: Riot Games

Platform: PC

Year: 2009

We are considering LoL as a possible competitor, because it is one of the most played and famous free-to-play MOBA. This game has got more than 100 playable characters, 3 different maps for different game modes.

Generally, in LoL players are subdivided in two teams (red and blue), that are composed by 3 to 5 players, and they have to destroy the enemy Nexus. During the game the players can buy items to increase their in-game champion stats, and when they level up, they can unlock or increase their abilities. This game is free to play, and the player can unlock skins for champions as reward for her good games with a system of crafting.



Fig 3.4.1 League of legends gameplay screenshot

- **Heroes of the Storm:**

Developer: Blizzard entertainment

Platforms: PC

year: 2015

This is another famous free to play MOBA, where two teams fight each other to destroy the enemy base. In this game the movements from the base to the lane is on a mount. This game has a different mechanics from LoL, because killing minions grants an increase of the team experience, and at the level up every member of the team level up, and they can choose an upgrade for their abilities. There isn't an items shop in game.



Fig 3.4.2 Heroes of the Storm gameplay screenshot

- **Guns of Icarus**

Developer: Muse Games

Platforms: PC, Playstation 4

Year: 2012

Guns of Icarus is a game where you are a member of a crew, with a certain role, and you have to destroy the enemy zeppelins. There are three different roles (engineer, pilot and gunner), and you have to work with your teammates to let the zeppelin fly.

This game have an interesting battle mechanic, because the player can choose the cannon or gatling to use and the type of bullet. The environment is particular, because is a battle in the sky, with zeppelins.



Fig 3.4.3 Guns of Icarus gameplay screenshot

- **Smite**

Developer: Hi-Rez Studios

Platforms: PC, Xbox One, PlayStation 4

Year: 2014

Smite is a MOBA, with 4 different play-mode, each one with a unique map, where every player chooses a god or a character based on the mythology, and fight in team to defeat the other one. In every game mode, except the arena one, the objective is the same, take down the enemy towers in order to reach the enemy titan and defeat him. The arena Game mode take place in a coliseum map, where the teams have to fight each other to take down the amount of point of the enemy by killing them or pushing the friendly minions into the enemy portal.



Fig 3.4.4 Smite gameplay screenshot

3.5 Feature Comparison

The differences of “Forbidden Seas” from the top performers listed before, is surely the environment and pirate setting, and the mix of two game genres: MOBA and racing.

- **League of legends** is a MOBA game. The player could choose a champion, or a random one is assigned depending on the game mode, over 136 available. Every champion belongs to a main class, based on its stats, and the main classes are: Fighter, Tank, Assassin, Support, Marksman, Mage. The player starts from the summoner level 1, and after every play gains experience, to the max level 30. Every 10 level better runes are unlocked, and the player needs Influence Point (IP) to buy them. The rune increase a certain statistic in game, like armor, life, attack damage, and so on. Not only runes, but even masteries increase the state, or give bonus in game. The IP are the reward after every game. Initially the player has play a couple of games against bots to be introduced into the game system mechanics, then she is ready to play against other players. After every game the player increases the mastery of the champion she used during the game, from 1 to 5, then she has to take a minimum of S- rank, gave from the game system based on the KDA and farm, to take a token that could be used to increase the mastery to a maximum of 7. Every time a player take an S- or more rank with a character she receives a Hextech Chest, once for champion, and, if she wins, she could obtain a key fragment that combined with other 2 fragment makes a key, useful to open the Chest. Into the chests is possible to find a random skin shards, champion shards, summoners icons, ward skins, blue or orange essences. The essences are needed to unlock permanently skins or champions. The in-game view is an isometric perspective. Our game has got a few champions, or better classes, 7 in total. The amount of classes could increase. Is possible to unlock some skin, that doesn't change the shapes and nature of the ship. The reputation, that is taken in a game, is the currency that could be

used to unlock the skins and the classes. There isn't an end-game rating based on KDA at the end of the games, and neither a loot nor crafting system. The camera in our game is a third person camera that follow the player from behind the ship.

- **Heroes of the storm** is a MOBA game, with 66 playable characters taken from the different games developed by Activision Blizzard. There are just 3 game modes: Coop vs AI, 5 vs 5 and brawl. If you choose the first two game modes the players have to fight in team of 5 people against 5, controlled by AI or other players, and have to destroy the enemy Nexus to win. The particular feature of HotS is that even if the game mode is the same, the map change from game to game, and the environment has to be used to obtain buff that makes easier the victory. During the game the experience that the players gain goes to increase the level of all the team, and there isn't an ability point to assign and increase the power of a certain ability, but there are more choices that add effects to the abilities.
Our game has got just one map, and during the games the player gain reputation, that is necessary to spawn a support ship.
- **Guns of Icarus** is a game where the player controls a member of a crew that has to fight other zeppelins in the sky. The player chooses a role like engineer, pilot or gunner, and helps the crew in order to keep the zeppelin safe and destroy the enemies. Every role gives a bonus doing a specific action, for example the engineer repairs things faster than the other role, but is possible to shoot, pilot and repair with every class the player choose. In our game the player controls the ship and not the single person on it, and the classes are the different types of boat.
- **Smite** is a MOBA with 87 playable character, which takes inspiration from japanese, hindu, mayan, egyptian, roman, greek, norse and chinese gods and the mythology characters. There are 4 game modes each one with a unique map: Conquest mode is a three lines map with a jungle between the lanes, Assault mode is a single line map without jungle, Siege mode is a two lines map with jungle, and Arena mode has a circular map. The goal in the conquest, assault and siege modes is to reach the titan in the enemy base and defeat him. To do this the player needs to fight in team and destroy the towers to advance. The view is a third person, so the player sees the character from behind.

Features	League of Legends	Heroes of the storm	Guns of Icarus	Smite	Forbidden seas
In-Game level up	Yes, champion level up	Yes, team level up	No	Yes, champion level up	No
Player level up	Yes	Yes	Yes	Yes	No
In-game Shop	Yes	No	No	Yes	No
Shop	Yes	Yes	Yes	Yes	Yes
Camera	Isometric	Isometric	Third person	Third person	Third person
Buddies	No	No	No	No	Yes
Minions	Yes	Yes	No	Yes	No
Champion mastery	Yes	Yes	Yes	Yes	No
Movement	Point and click	Point and click	WASD	WASD	Mouse wheel and keys AD
Game modes	Destroy enemy Base	Destroy enemy base	Destroy enemy zeppelin	Destroy enemy base, points match	Time mode, point match

We introduce a different type of game mode, that is a time mode where the players have to score more points (ARRH!) than the enemy, and isn't necessary to fight the other players to score it. Even the movement system is different, in fact this isn't a point and click game as the usual MOBAs, but the mouse wheel is needed to make the ship moves. One particularity is the colorful, low poly and toon environment that the analyzed competitors don't have.

3.6 Business Model

The business model used by "Forbidden Seas" involves in the introduction of in-game payments and purchases for additional contents to enrich the game experience. Completely based on microtransactions, "Forbidden Seas" offers to the player an item shop, located in the Contraband Galey page, in which she can buy via micropayment a virtual currency spendable to buy every digital content inside the game, like new ships' classes, skins, extra VFX or SFX and other things like that.

In the early stage of life of the game, will be provided only a PayPal based payment. But later the game will be extended to other payment method like Visa, Mastercard or Skrill (former MoneyBookers).

In the Game Technical Document at chapter 14.3 is analyzed the revenue estimation based on this business model.

4. Legal Analysis

The game is a new IP. The piratical setting, that is very widespread in the video game market, is unique by considering it in conjunction with the mechanics and procedures included in "Forbidden Seas".

All the digital contents included in the game will be design and create directly by our development team that will include 2D and 3D artists and a sound designer. If it is necessary to use third party contents, these will be acquired; all the licenses required to put these contents in a new commercial project, if it is necessary, will be acquired, too.

So, the main legal problems that can involve Forbidden Seas are about the development of the digital contents. A great effort will be made by the team in order to not fall in copyright violation in the production of every piece of the game.

5. Gameplay

5.1 Overview

In an online and distributed environment, from 4 to 8 players fight each other inside an arena in order to score more points than anyone else. To score a point, a player has to catch a flag faster than others, she has to protect it from the rides of other players and carry it to one of the four hotspots around the game map.

5.2 Gameplay Description

The player enters the lobby and chooses a class to play, then waits until the game starts. The game starts only when the room is full and all the players have chosen the class to play and have pressed the ready button. As each match starts the players will spawn randomly in one of the four corners of the map, one player for each corner. At the beginning of the game each player controls only his Flagship in a perspective and third person view. So the point of view is behind the Flagship and located on the top of it looking in the direction of the movement with an angle of 20° from the horizontal. This position of the camera allows the player to view correctly at the same time her Flagship, her additional support ships and where she is going. In case a player disconnects, the match will go on if there are at least 3 players left, otherwise the match ends and all the contenders will be transported to the lobby again.

A Flagship can move forward, veer left or right and increase or decrease her speed. The angular speed or veer amount per seconds depends on the maneuverability statistic of each class. Basically it can perform two different types of attack, a main attack with a short cooldown and a special one with a long cooldown (An accurate description of how a boat can move and attack will be given in chapter [5.2.1](#)).

A fight can involve more than just two ships in real time and in any moment during a match. The aim of each player won't be "kill as many other ships as possible" in the time limit, but is to catch

as many treasure as possible and carry these to the port one by one. (The map and the environment will be described in detail in chapter [5.6](#).)

In the first phase of each match the treasure and the channels that start from the boundaries of the arena are locked, so in this time frame the players can go around the map to kill each other, to gather collectables or trying to achieve some powerups. These actions will help Flagships' owners to prepare themselves for the gold rush and to increase their "Reputation points", the in-game currency of Forbidden Seas, in order to summon their support ships.

In the corner of a triangular area in the center of the map there will be 3 places, one for each angle, in which the player can achieve a power up. According to the spot, in order to achieve one of these power ups, the player have to do certain actions like destroying something or staying for a fixed amount of seconds inside a particular area. When caught, a power up will respawn after some time in the same place (A detailed description of power ups will be given in chapter [5.2.1](#))

A support ship is an additional boat that the players can summon when they reach a certain amount of Reputation. When a player summons a support ship she will spend a fixed amount of her Reputation. A support ship it is always controlled by the AI and it will follow its Flagship, fighting with it until it will be sunk because of the enemies attacks. A support ship is smaller and less powerful than a Flagship but it can be specialized in terms of statistics and behaviour: in fact it can be a tank or an attacker boat, with its stats fitted accordingly. During a match the player can also chose in real time which type of behaviour a support ship must have: a defensive behaviour or an offensive one, and it can be modified in every moment. A Flagship can have at most two support ship at the same time and can decide their behaviour, for instance they can act defensively to protect the Flagship or they will try to attack other ships (For a detailed description of support ships' classes and stats go to chapter [7.2](#) and [7.4.2](#)).

Obviously who will be able to prepare himself for the best will be in advantage when the treasure will appear in the second phase.

When the treasure shows up, it will be followed by a glorious and sparkling fog and by a blaring sound that announces the begin of the rush. To score an "ARRH!", that is a point in the Forbidden Seas world, the player have to carry the treasure to one of the four ports at the end of the channels that start from the boundaries of the arena. After a port receives the treasure, the latter will reappear in its spawn point after few seconds. At that time every boat inside a channel will be teleported in its spawning point inside the map in order to restart the rush on equal terms.

When a ship catches the treasure, it will appear in its stern and it will start to glow. This will help other players to recognize who carries the treasure. Also the minimap in the corner of each player's screen will show who is carrying the treasure.

A compass in one of the corner of the player's screen will point every time to treasure's position also when it hasn't an owner and it's just floating on the water (A detailed description of the GUI will be given in chapter [5.3.1](#)). This feature allows the player to identify the enemy with the treasure. In case the player takes the treasure, the compass needle is replaced by the treasure image.

The player can steal the treasure from another player, by sinking it. When a ship sinks, it will drop the treasure from its stern and she will leave it to float on the water. A player dies, alias her ship sinks, when her health becomes 0. After that, she will respawn at her assigned spawn point after thirty seconds, without any bonus or malus suffered before die. If a ship sinks inside a canal, the treasure will reappear in its spawn point in the center of the arena after five seconds.

Players can lose health not only because of the others, but also because of random events that occur during the match, or because some negative status suffered that inflict damages over time. Same rules are applied to a support ship but when it sinks or dies it will disappear and the amount of Reputation spent to summon it won't come back.

According to the game mode chosen, the player that scores the highest amount of ARRH! or the player that scores a fixed number of ARRH! first, will be the winner of the match (Game Modes will be described in detail in chapter [5.4](#)).

5.2.1 Game Mechanics

Navigation

The navigation is the system used by a character inside "Forbidden Seas" to move around the game's world. A flagship, or a character, can move forward and can veer left or right. The player can also adjust the speed of the ship through the rotation of the mouse's wheel. Rotating the wheel the player can gradually increase her speed, but visually she switch amongst four different speed levels. In fact in the right low corner of the UI there will be a wheel indicating the current speed level.

Level	Name	% on max speed
1	STOP	0
2	SLOW	25
3	HALF	50
4	FULL	100

Speed's levels scheme.



Fig 5.2.1.1 Visual reference of the speed indicator that will be represented in the HUD.

The rotation amount (Υ) over the seconds depends on the maneuverability stats (M) of each class and on the current speed (s) of the boat according to this formula:

$$\Upsilon = I * \alpha * M * \Psi(s)$$

$$\Psi(s) = \begin{cases} S/\beta & \text{if } s < S/\beta \\ s & \text{if } S/\beta < s < S \\ S & \text{if } s > S \end{cases}$$

where I is the horizontal input, α and β are constants empirically determined, M is a parameter that depends on the maneuverability, S is the maximum speed that a boat can reach and $\Psi(s)$ is a function that depends on the current speed of the boat. Any altered status that influence the speed of the boat won't influence also the rotation amount. So if a power up increases player's speed, that status won't be a malus for the point of view of maneuverability of the ship but a better bonus.

Maneuverability Level	M
Low	0.7
Mid	0.85
High	1.0

Maneuverability levels scheme.

Combat system

A boat can attack in real time without any specified target but in order to inflict some damage to another boat, this must be inside the area of influence of her attack. Every attack works as an area of influence, with a shape and a range that depends on the performer's class. So an attack can be considered ranged if it extend for more than 10 meters from the source or conversely a melee attack.

The player can perform two different types of attacks: a main attack, that is less powerful but with a short cooldown, or a special attack that have a long cooldown but can be more powerful or can give to the player special abilities.

Main Attack

The main attack can be performed by the player pressing the left button of the mouse. It can be long ranged or melee according to the class of the flagship. For instance the Pirates class have a long range main attack, instead the Venetians class have a melee main attack. Generally a main attack has a cooldown shorter than two seconds.

(For a detailed description of the main attack of each class go to chapter [7.4](#))

Special Attack

A special attack can be performed by the player by pressing the right click of the mouse. It is different from the main attack and can be melee, long ranged, it can influence an area of the battlefield for an amount of time, it can inflict a negative status to an enemy or it can strengthen who did it. Generally a special attack has a long cooldown for instance a ten seconds long. (For a detailed description of the special attack of each class go to chapter [7.4](#))

Flag and Hotspot

In "Forbidden Seas" the flag is represented by the treasure. So the treasure is the "hot potato" that the player has to carry to the hotspots in order to score a point. In "Forbidden Seas" the hotspots are the ports situated in the end of each channel that start from the boundaries of the arena.

The treasure will be available after three minutes from the beginning of the match and the first one that touches it will catch it. When a player catches the treasure, it will be transferred in the back of her flagship in order to be carried to the port. But when a carrier dies the treasure will be available again, floating on the sea in that spot if it falls inside the arena or it will be respawned after 5 seconds in the center of it if it falls within a channel.

Whenever a player carries successfully the treasure to a port, she scores an "ARRH!", that is a point. So the treasure will be respawned in the center of the arena after ten seconds. At that time also the players that are still inside the channels will be respawned in their spawn point.

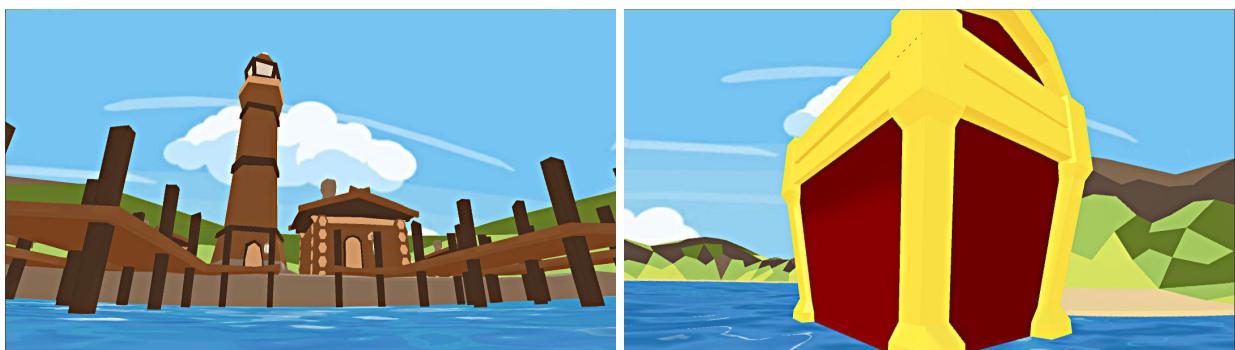


Fig 5.2.1.2 Port and Treasure visual references.

Yo-ho-ho Bar

Whenever a Flagship catches the treasure it increases its Yo-ho-ho Bar. Also for each second a player maintains the treasure in the galley of her Flagship the bar is incremented by 0.83%. When the bar is full a Flagship acquires the skill to perform a "Yo-ho-ho Boost!". So in order to fill the bar the player has to maintain the treasure in her hold for 120 seconds (not consecutive). In case of death, the yo-ho-ho bar will lose a 15% of the progress.

Yo-ho-ho Boost!

This is an ultimate skill that a player acquires whenever she fills her "Yo-ho-ho Bar". When a Flagship performs a "Yo-ho-ho Boost!" it doubles its speed and achieves a quadruple regen factor for 10 seconds.

Reputation

Reputation is the currency used in Forgotten Seas during a match. Increasing her Reputation the player can summon at max two additional ships as a support to her battles. To increase her reputation a Captain can sink another ship, pick coins spreaded around the map, gain a new power up, catch the treasure or score an “ARRH!”.

Action	Reputation
Picking a coin	50
Killing a Flagship	1000
Killing a support ship	500
Gaining a power up	200
Catching the treasure	500
Scoring an “ARRH!”	2000

Reputation reward scheme.

The Reputation acquired by a player can also be decreased by certain actions that a player suffers.

Action	Reputation Lost
Be Killed	500
Losing a support ship	100

Reputation penalty scheme.

Power Up

Inside the arena three differents power ups will be spawned at the beginning of the match. There are two ways to obtain them. To gain the power up that gives to the player a damage up bonus of 20%, she have to stay inside a determined area for at least 10 seconds. Instead, to gain the power up that gives to the player a speed up bonus of 20% or a regeneration factor of 50 hp/s, she have to destroy a game element for each one, visually represented by big buoys.

Whenever a player obtains a power up, on her screen the icon related to the positive status that it gifts will be displayed (these status will be described in the next paragraph) . Then, the ingame representation of the power up disappears, so it will respawn in the same place after 60 seconds to be newly accessible.

Then the ingame object, that represents the power up, that has been obtained by a player disappears, and it will respawn in the same place after 60 seconds to be newly accessible.

Power Up	Bonus	Duration	Condition
Poseidon's Wrath	20% Damage Up	30s	Stay inside an area for 10 seconds
Aeolus' breath	20% Speed Up	30s	Destroy a buoy (3000 HP)
Isis' blessing	50 hp/s	30s	Destroy a buoy (3000 HP)

Power ups' summary.

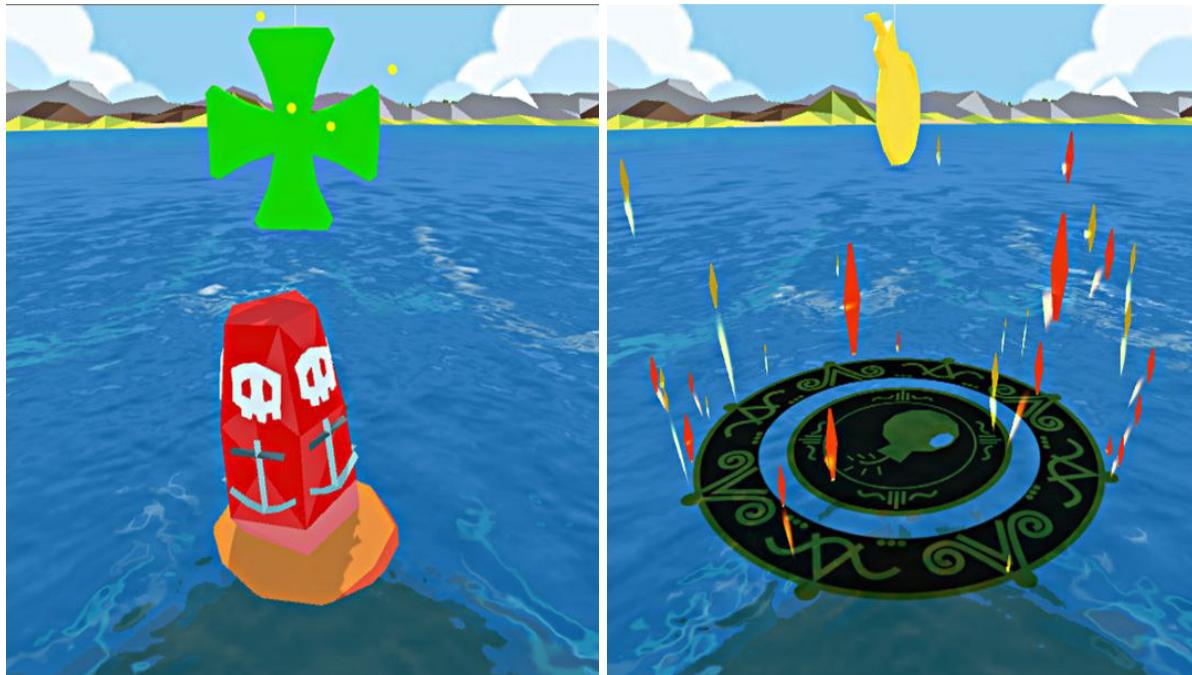


Fig 5.2.1.3 Power ups visual references.

5.2.3 Status effect system

Every ship can incur in an alteration of its statistic based on a status effect. This can be either a positive status, ensuring a bonus in terms of stats boost or heal recovering, or a negative status, with a stats malus or DoT (Damage over Time).

Positive status

Status	Effect	Duration	Amount	Icon
Yo-ho-ho Boost!	Increase speed and Heal over time	10 s	+100% speed and 150 hp/s	
Regen	Heal over time	30 s	50 hp/s	
Damage Up	Increase damage dealt	30 s	+20% dmg	
Speed Up	Increase speed	30 s	+20% speed	
Submersion	Hide under water and being untargetable	10 s	none	

Positives status' summary.

Negative status

Status	Effect	Duration	Damage	Icon
Poison	DoT	15 s	50/s	
Blind	Blank the screen	10 s	none	
Confusion	Controls are inverted	10 s	none	
Burn	DoT - can be passed on touch	15 s	30/s	

Negatives status' summary.

5.3 Controls

5.3.1 Interfaces

Once the game client starts, it shows a login screen. In the background there is the 3d model of the treasure floating on the water.

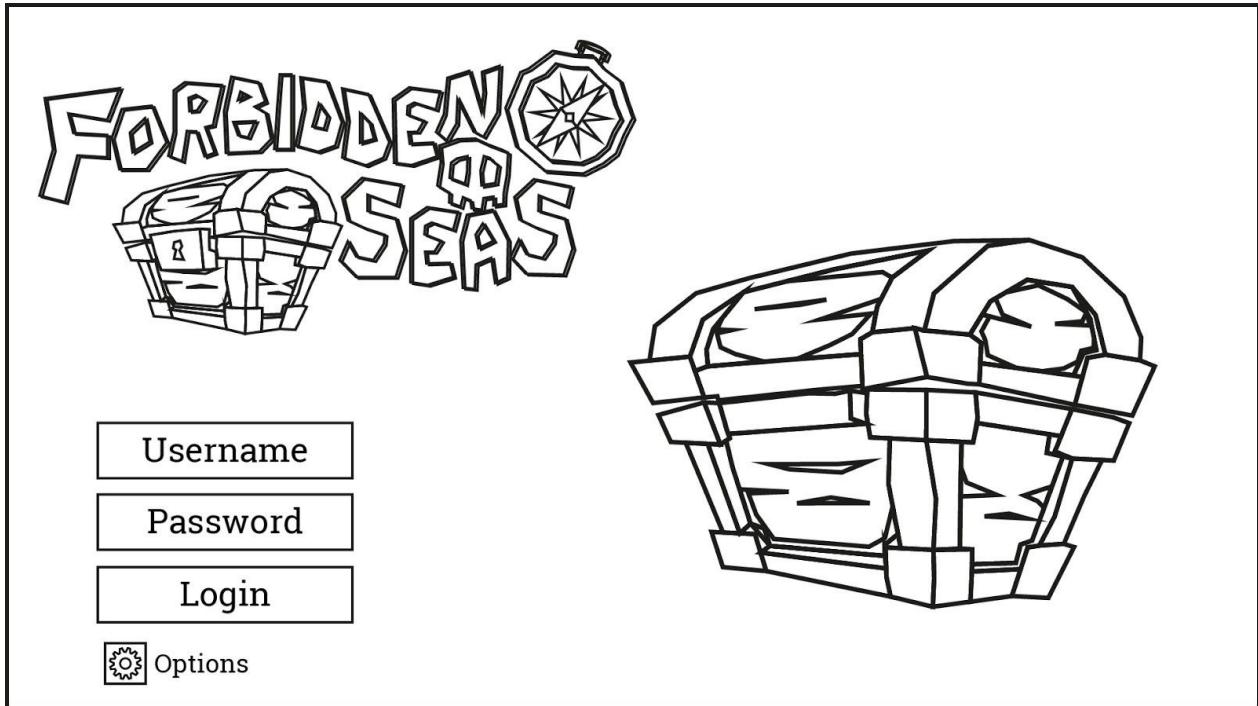
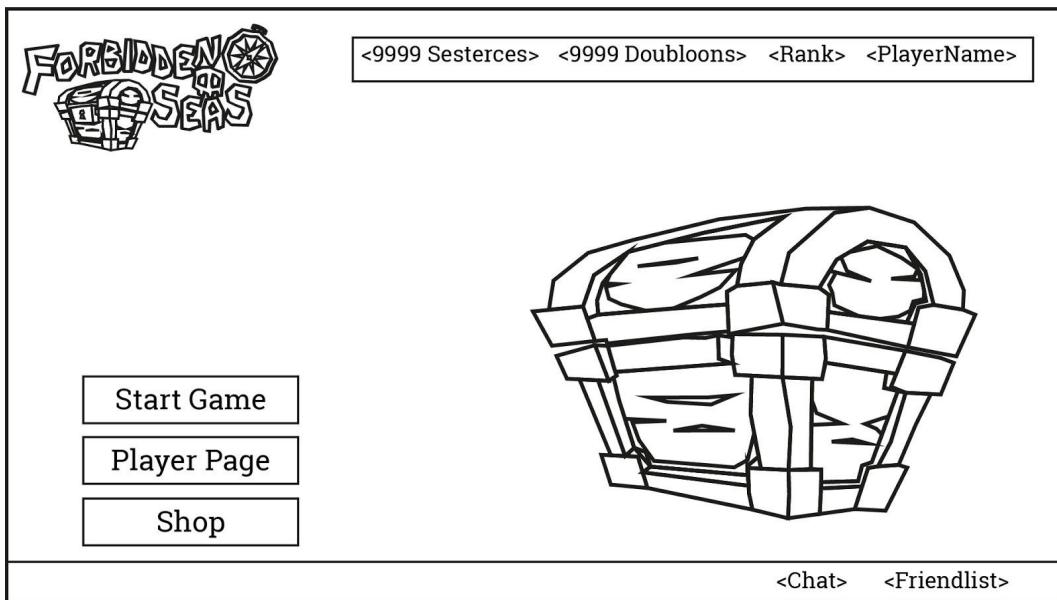


Fig. 5.3.1 Login screen

After the authentication, it appears the home page, where the player can check her currency, and navigate to the player page, the shop page or she can start a new match.



Selecting “Start Game” the player can choose a game mode among the available ones.

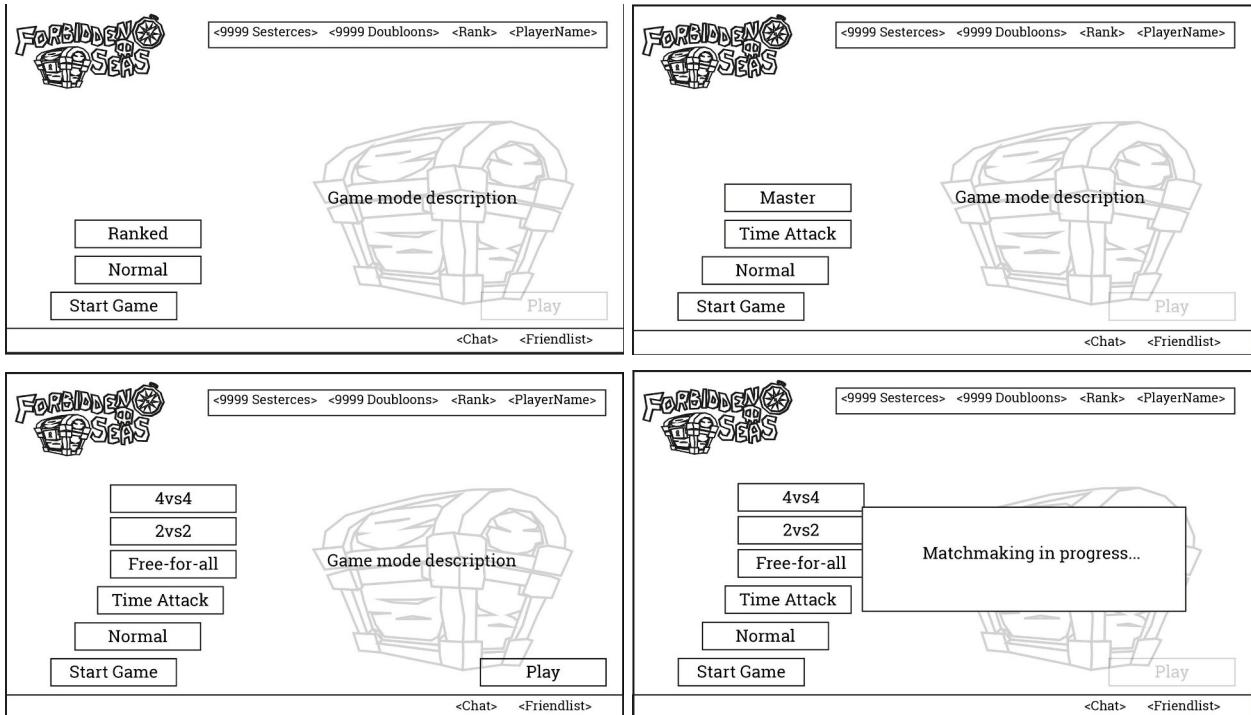


Fig 5.3.3 Game mode selection

When the player chooses the game mode, the matchmaking starts. While the matchmaking is in progress the player can continue to navigate into the game client to do other things. When the system find all the players, it appear the lobby screen where she can chose a class and, eventually, the aesthetic appearance of the ship.

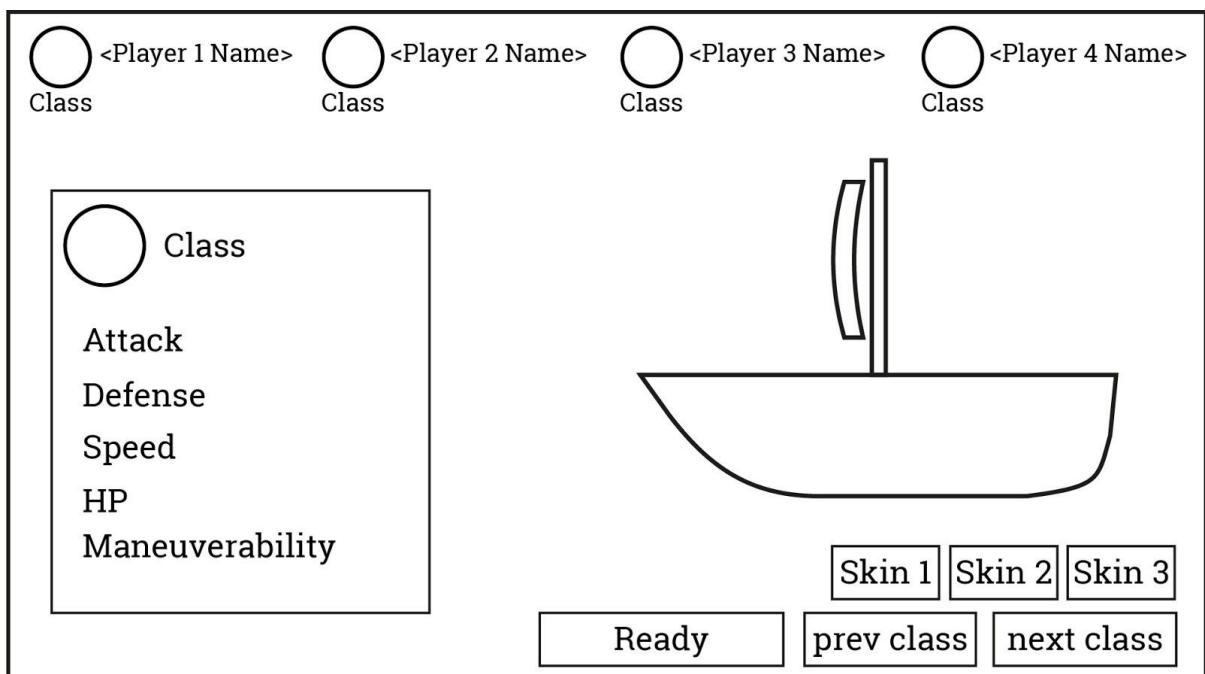


Fig. 5.3.4 Lobby screen

When all the players press “Ready” button, an arena is selected randomly among the availables and the match starts. During the game, the HUD is organized with the core elements embracing the central area of the screen around the ship. This is designed for the maximum visibility. At the corners of the screen there are the map, the speed indicator, the compass (pointing to the treasure) and the number of Arrhs/Reputation. In the top of the screen it shows the match timer.

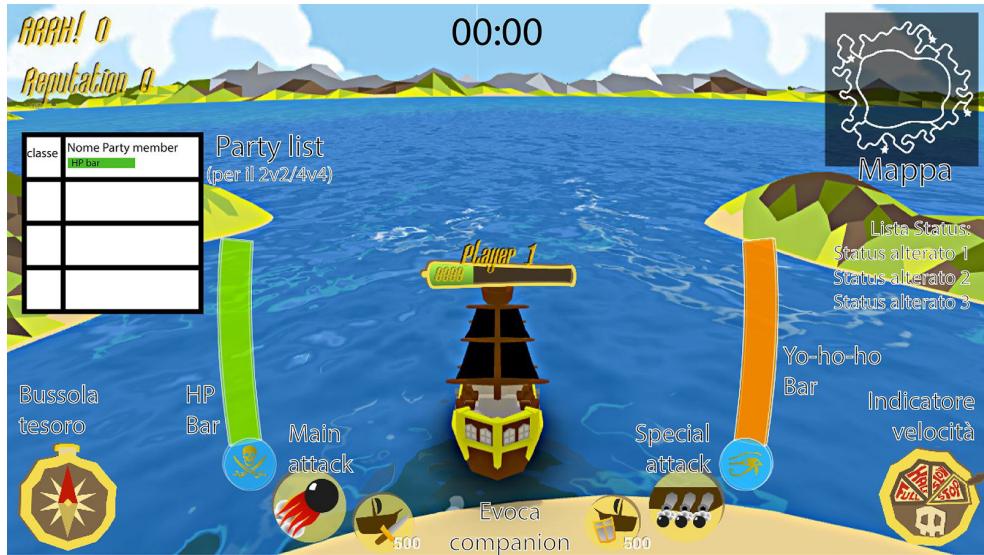


Fig. 5.3.5 HUD

From the Home screen the player can access to her personal page, where she can find an overview of her progress, her Ranked statistics, the match history and the list of the unlocked ships, skins and additional contents.

The image contains four screenshots of the game's Player page, each showing different sections of the player's profile:

- Overview:** Shows the player's name, a large profile picture of a pirate ship, and summary statistics: <9999 Sesterces>, <9999 Doubloons>, <Rank>, <PlayerName>. Below this are buttons for "Ships", "Rank", "Match History", "Overview", and "Player Page".
- Rank:** Shows the player's rank, actual rank, and actual points. It includes a ranking table for four players (Player1 to Player4) and their corresponding points (<99>, <98>, <97>, <96>). Buttons include "Ships", "Rank", "Match History", "Overview", and "Player Page".
- Match History:** Shows a table of matches with columns for "Match", "K/D/Arrh", and "Reputation". The table lists five matches with values like <9/9/9>, <9999>, etc. Buttons include "Ships", "Rank", "Match History", "Overview", and "Player Page".
- Ships:** Shows a grid of six ship slots. The first slot is "Ship1" (locked), the second is "Ship2" (locked), the third is "Ship3" (locked), and the fourth is "Ship4" (locked). Buttons include "Ships", "Rank", "Match History", "Overview", and "Player Page".

Fig 5.3.6 Player page

Furthermore the item shop, called "Contraband Galley", can be accessed from the same Home page. Here the players can buy new classes and aesthetic upgrades spending the in-game currency, or spending the special currency obtainable with in-app purchase.

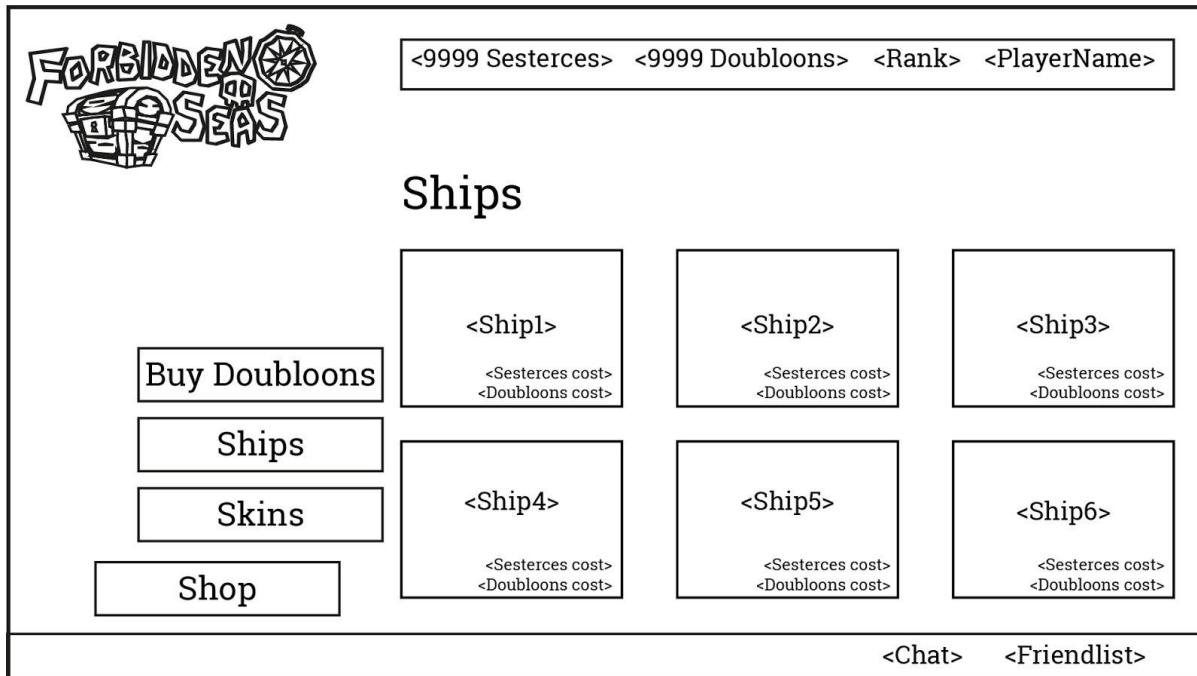


Fig. 5.3.7 Shop page

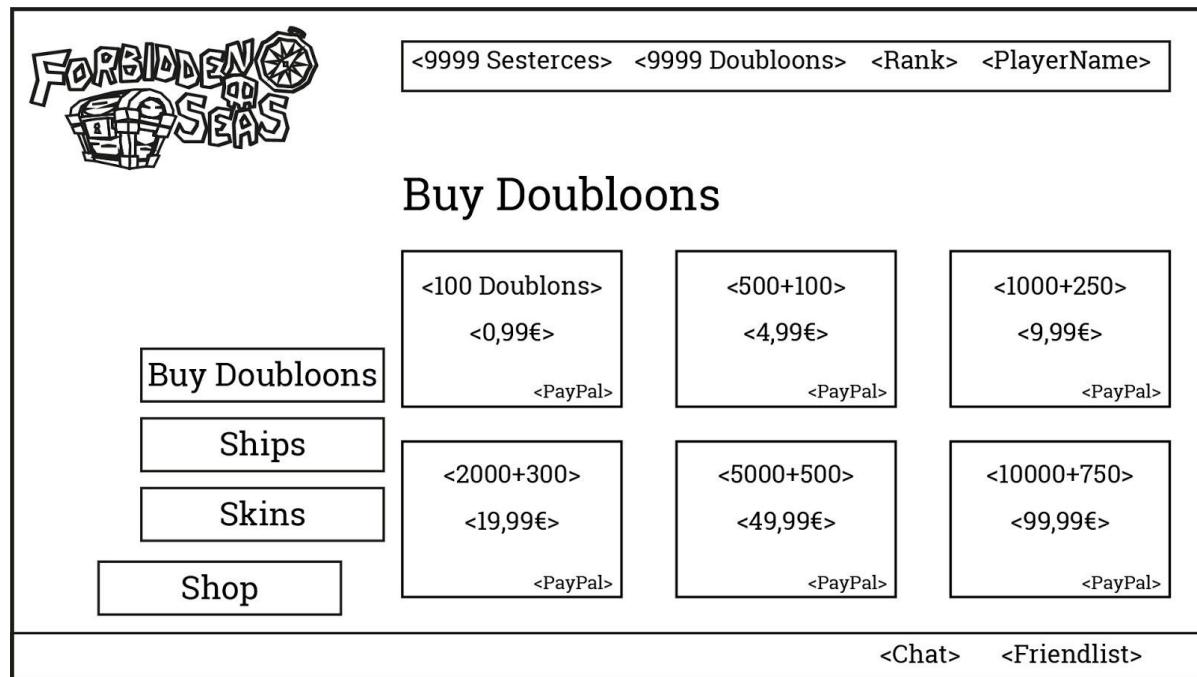


Fig 5.3.8 In-app purchase

5.3.1 Keys Map

Forbidden Seas is designed for a PC user experience, consequently the controls are mapped only to keyboard and mouse. In a future platform conversion scenario, specifically for console, the controls have to be redesigned accordingly to be enjoyable to play with a gamepad.

Action	Key
Turn left/right	A/D
Speed up/Slow down	Mouse Wheel
Main Attack	Left Mouse Button
Special Attack	Right Mouse Button
Menu	ESC
Match Ranking	TAB
Summon Tank Support	S
Summon Attacker Support	W
Switch to Defensive Mode	Q
Switch to Offensive Mode	E
Yo-ho-ho Boost	Spacebar

5.4 Game Modes and Winning Condition

5.4.1 Time attack mode

At the beginning of the match a countdown starts. When the time is up, the player that scored the highest amount of "ARRH!" win the match, in case of a draw, the player that collect the highest amount of reputation win the match. Normally, in this game mode there will be four player that fight each other.

5.4.2 Master mode

In this game mode, the first player that gain a fixed amount of "ARRH!" wins the match. Normally, in this game mode there will be four player that fight each other.

5.4.3 2v2 or 4v4 modes

Either time attack and best score modes can be extended to teams matches, featuring two teams composed by two or four players. So we can have:

- 2v2 Time attack
- 2v2 Best score
- 4v4 Time attack
- 4v4 Best score

5.5 Maps

For the first release of the game only one map will be available to play, but in the future new maps will be introduced into the game as free expansions of the game.

When every player inside the lobby is ready to play, a map will be randomly chosen by the system to create a new match set in it.

The first map designed is set in a caribbean like environment. The arena is composed primarily by a huge water' sheet with some islands distributed inside it. It presents a rectangular shape but with irregulars boundaries. From the corners of this rectangular-like arena, four channels start. Each canal's profile is different from the others but it is composed by the same elements: six different modules, that coherently duplicated and juxtaposed, create a canal. Every canal has, more or less, the same length and is connected to the adjacents with a short canal in order to create a complex net. These littles canals connect directly the entrance of one canal with the neighborhood of the harbor of one of the other canal halving the time necessary to deliver the treasure. But these shortcuts will be full of obstacles and traps, like explosives mines that can seriously damage the player, or trunks and rocks that simply obstacle her. So, even if these ways seems to be shorter than normals canals, they will be definitely more dangerous and their navigation could take more time.

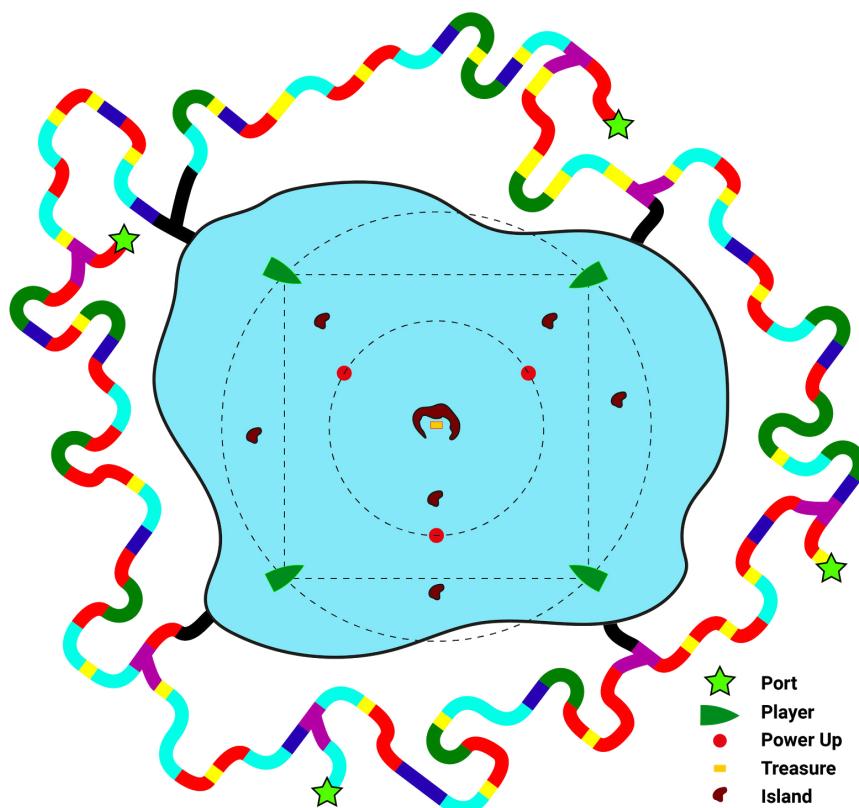


Fig 5.5.1 First map scheme.

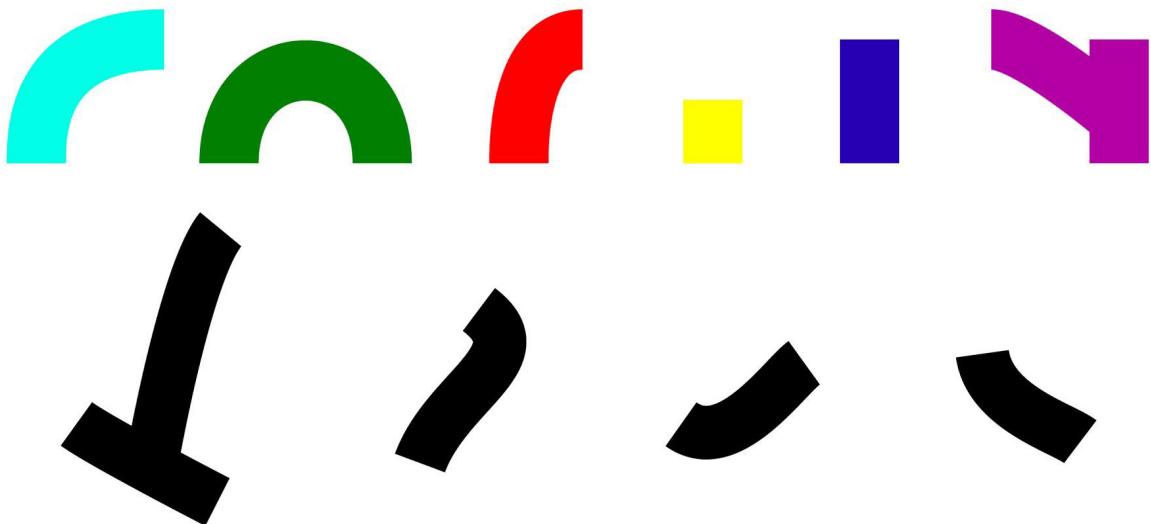


Fig 5.5.2 Modules used to build canals for the first map.

The players spawn inside the arena at the corners of a square area centered in it. So in the beginning of the match they will be equally far from the treasure's spawn point. As mentioned in chapter 5.2.1, the power-ups will spawn inside the arena at the corners of a triangular area centered in it. The "Poseidon's Wrath" will spawn in the lowest corner of that triangular shape in order to be contested by two players at the same time in the early game's phase. Instead the other two power-ups will spawn, one in the left corner and the other one in the right.

5.6 Player's progression

5.6.1 Reward

A player can gain a series of functional and aesthetic rewards by playing matches in normal mode. At the end of every match, the cumulative amount of Reputation obtained during the match will be multiplied by two in case of win and converted in **sesterces**, one of the currencies used outside a match in Forbidden Seas. In case of lose, the gained sesterces are equal to the reputation gained ingame. It is possible to spend this currency in the "Contraband Galley", where you can purchase new ship classes and special contents.

In the Contraband Galley it is possible to buy new ships, skins/effect, or **douloons**. Douloons are another type of currency that can only be bought in the Galley. The doulon can be used to buy skins, bundle, ships and other additional contents.

5.6.2 Ranks

A player can progress through a rank system by winning matches in ranked mode. Based on the ranked points gathered, the players are sorted in three tier, subdivide by their own in three division:

Tier	Division	Insignia
Lieutenants	Ensign	
	Junior Lieutenant	
	Senior Lieutenant	
Commanders	Junior Commander	
	Senior Commander	
	Captain	
Admirals	Rear Admiral	
	Vice Admiral	
	Fleet Admiral	

Each player starts from the lowest division. At each division she has to gather 1000 ranked points (**P**) to progress to the next division and tier. In the end of each match the player can gain or lose an amount of points that depends on some factors. The formula below shows how the ranked points will be calculated after a match.

$$P = \begin{cases} 58((0.25\alpha((R_{max} - R)mod(3))) + (R_m - R)/4 + 1) & \text{if you win} \\ -60((0.25(1 - \alpha)((R_{max} - R)mod(3))) + (R_m - R)/4 + 1) & \text{if you lose} \end{cases}$$

where **a** is the percentage of win in the last five matches, **Rmax** is the ordinal number of the maximum rank, **R** is player's rank from 1 to Rmax and **Rm** is the mean value among enemies' ranks.

Whenever the player reaches 0 ranked points she will be declassed to the previous division (unless she is already in the lowest one) and in this case she can only gather but not lose new ranked points. Instead, whenever a player reach the higher division she will continue to gather and lose points. These points will be used to create an overall ranking for the higher division. But obviously if a top tier reaches 0 ranked points she will be declassed.

5.6.3 Achievements

By performing some actions, players can gain achievements. This is useful to extends the game longevity, especially for achievers player (in Bartle's taxonomy). Also, they are valid for Steam Achievement or Playstation Network Trophy / Xbox Live Achievement (in case of future console conversion).

Achievement List	Action
Cannons polisher	Collect 10 kills
Cannonball lifter	Collect 50 kills
Santa Barbara keeper	Collect 100 kills
Terror of the seven seas	Collect 500 kills
Stern fisherman	Score 10 ARRH!
Steal the thieves	Score 50 ARRH!
Chest trower	Score 100 ARRH!
Pirates king	Score 500 ARRH!
You are a pirate	Win 1 game
It's a start	Win 10 games
Impressive	Win 100 games
I'm the boss now	Win 500 games
Titanic	Lose 1 game
Fine, but not very good	Lose 10 games
Sorry, lag!	Lose 100 games
Wasn't better to play battleship?	Lose 500 games
Hit and sunk	Die 10 times
Bones collector	Die 50 times
Concrete shoes	Die 100 times
Sleeps with the fishes	Die 500 times

Is it the beginning?	Win 3 games in a row
Tryhard	Win 4 games in a row
You did it!	Win 5 games in a row
Grilled chicken	Get burned 50 times from blaze
Plague rat	Get poisoned 50 times from miasma
Are you trying to burst a new record?	Die 10 times in a game
Uncle scrooge	Obtain a total of 1000000 sesterces
Undead	Never die in a game
Raise the anchors, jacks!	Sails for 10 miles
Spring that rudder	Sails for 100 miles
Weren't you gone too far?	Sails for 1000 miles
Tough, but fair	Hit 100 mines
You're so attractive	Sank 100 times by monsters.
Forbidden Seas lover	Play at least one match a day for a month
Shut up and take my money	Spend 10000 sesterces
And now!?	Unlock every achievement
ARRH!	Score 100 ARRH! with Pirates
Skoll!	Score 100 ARRH! with Vikings
Banzai!	Score 100 ARRH! with Orientals
The next pyramid is for you	Score 100 ARRH! with Egyptians
Viva San Marco!	Score 100 ARRH! with Venetians
Poseidon's boy	Score 100 ARRH! with Greeks
You hit rock-bottom	Score 100 ARRH! with Submarines
Yo-ho-ho and a bottle of rum	Make 10 Yo-ho-ho Boost in one match
Time flies if you are with your rum	Play for 200 hours
Do what you want, 'cause a pirate is free, you are a pirate	Visit 100 ports without the treasure in your galleys

5.7 Flowchart

The first flowchart shows the client functions that the player can use. After she logs in, she can see her personal page, goes to the options page, or to the lobby section. The Player Page and the Lobby section are shown in detail in the next flowcharts.

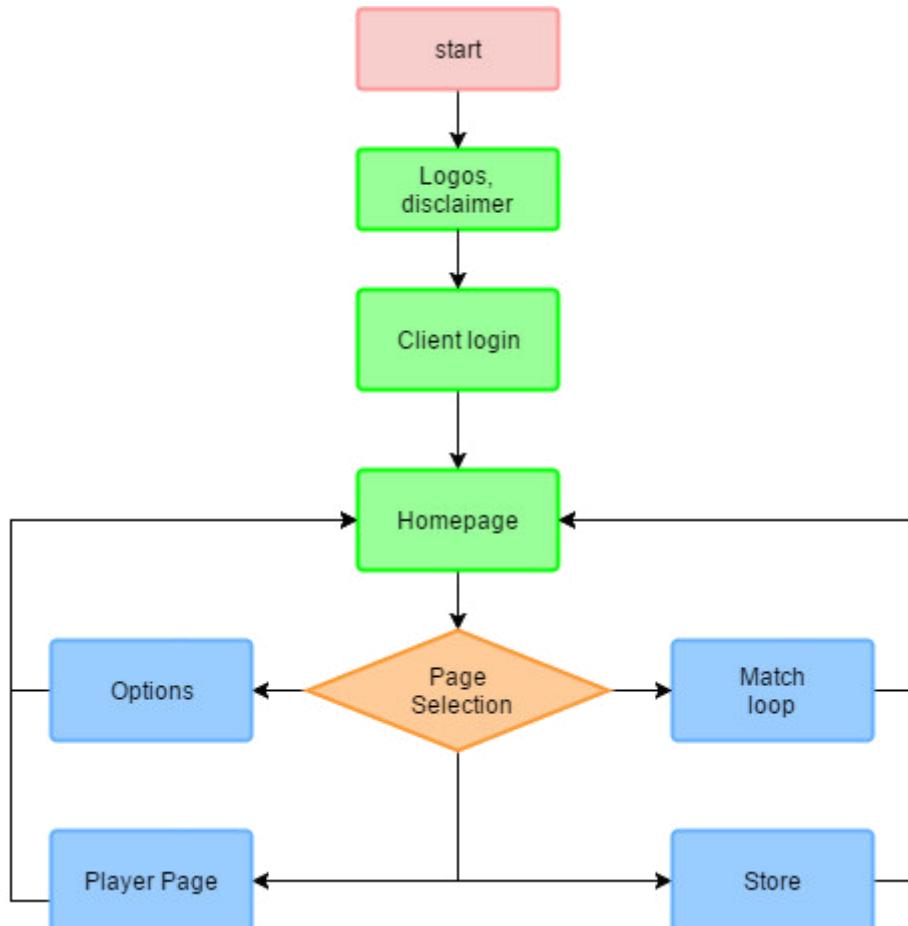


Fig. 5.7.1 Flow Chart of the client

In the personal page the player can see her statistics, like the number of games won and lost, the list of the last matches played, her rank reached in the ranked mode. She can return in the main menu whenever she wants.

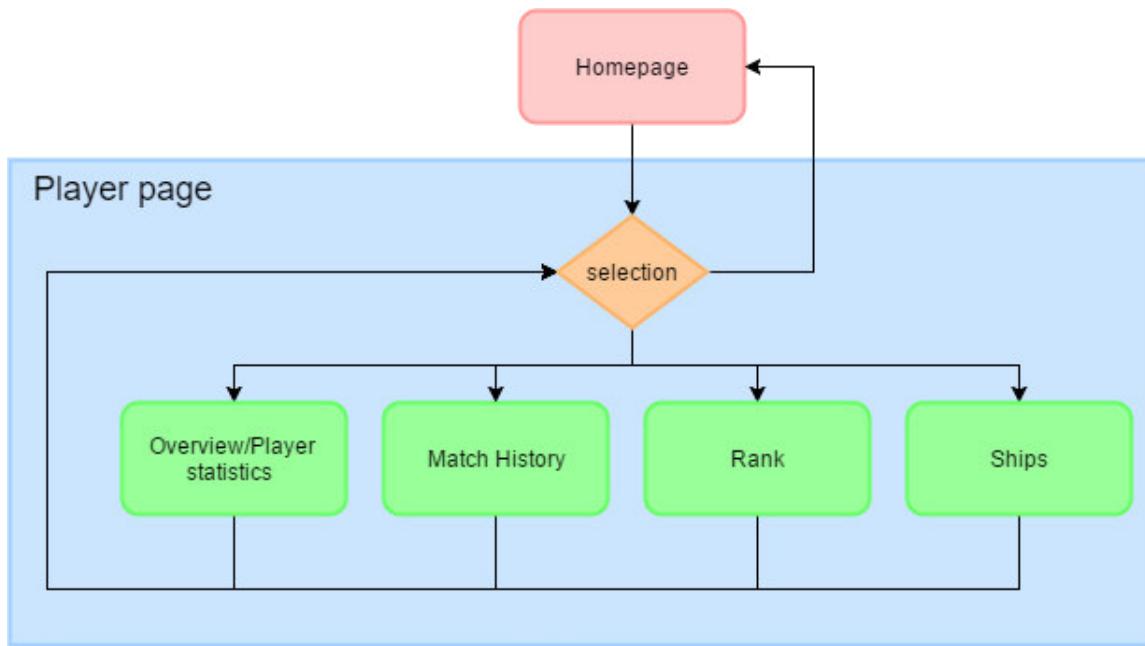


Fig. 5.7.2 Personal page flow chart

If she chooses to play a game, she goes to the New game page. In this page the player can choose the type of game she wants to play, normal or ranked, and then starts the matchmaking. Once there are enough players the game starts.

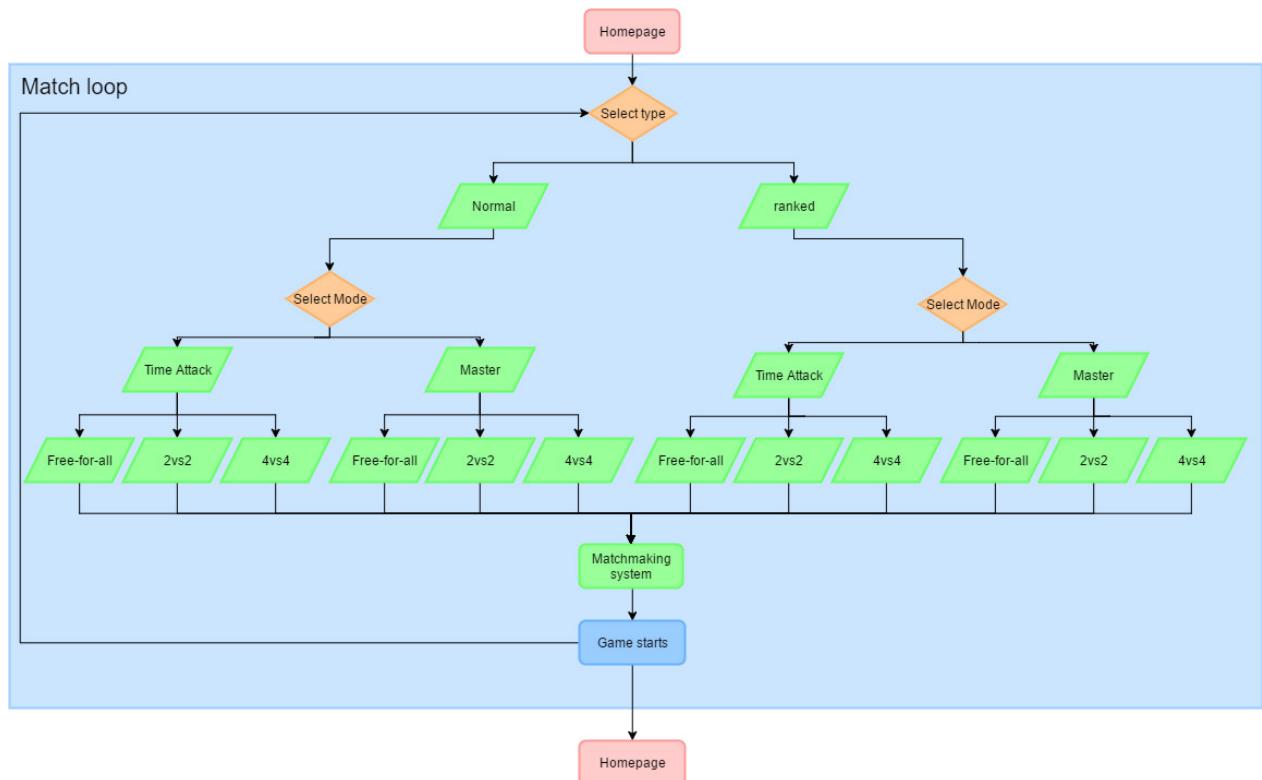


Fig. 5.7.3 New Game Flow Chart

Once the game starts, the players have to choose their ship and, when everyone is ready, the game starts. After the game is over, the players can see their score and KDA, then, if it is in their will, they can play again or return to the main menu.

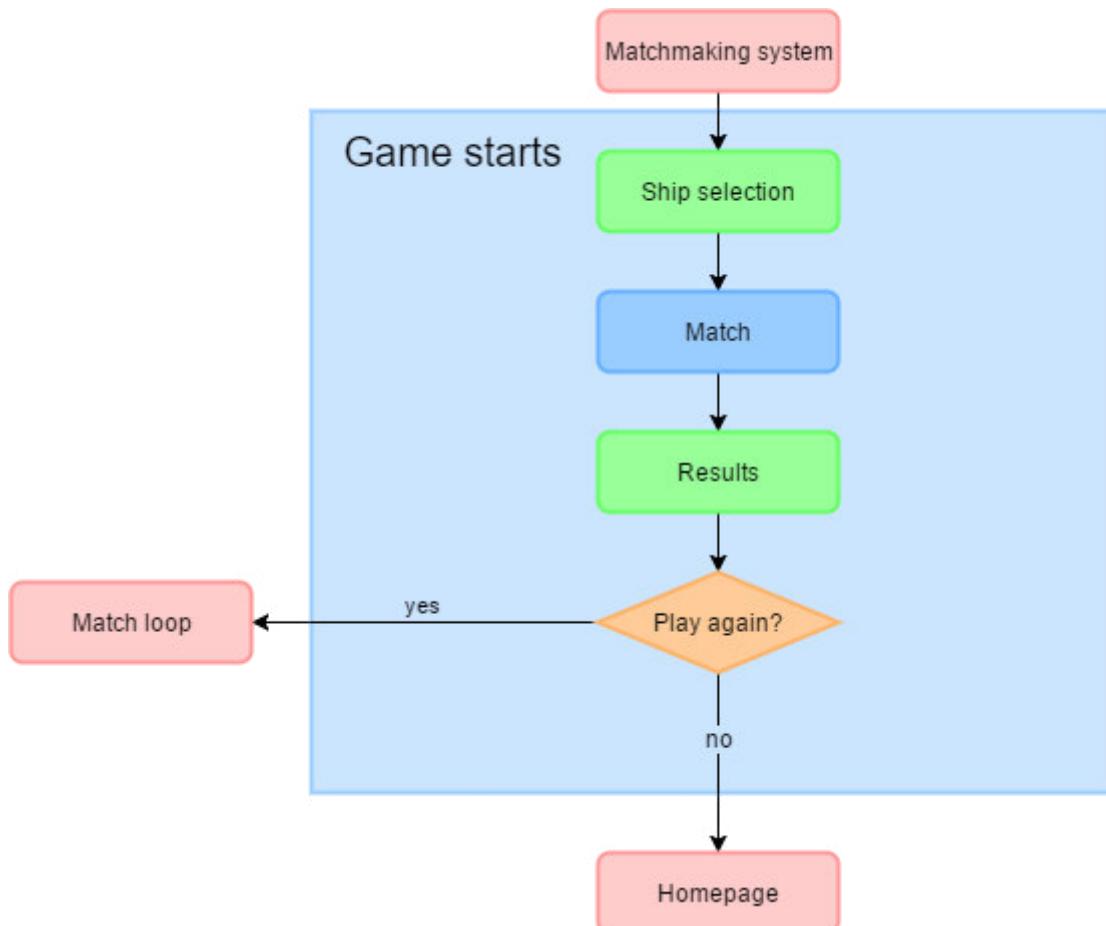


Fig. 5.7.4 Game start flow chart

The whole game follows a specific pattern that is shown in the next flow chart. Initially the players spawn, and they can fight each other, collect coin or buff, and summon support ships. After a fixed amount of time the treasure spawns and the players can collect it. Once the treasure is taken, there are a couple of possibility. If the player with the treasure die, the chest floats on the water; if the player dies in the arena, otherwise the treasure will respawn in the center of the arena. If the player with the treasure reach the port, she scores an ARRH! and then everyone respawns in the arena.

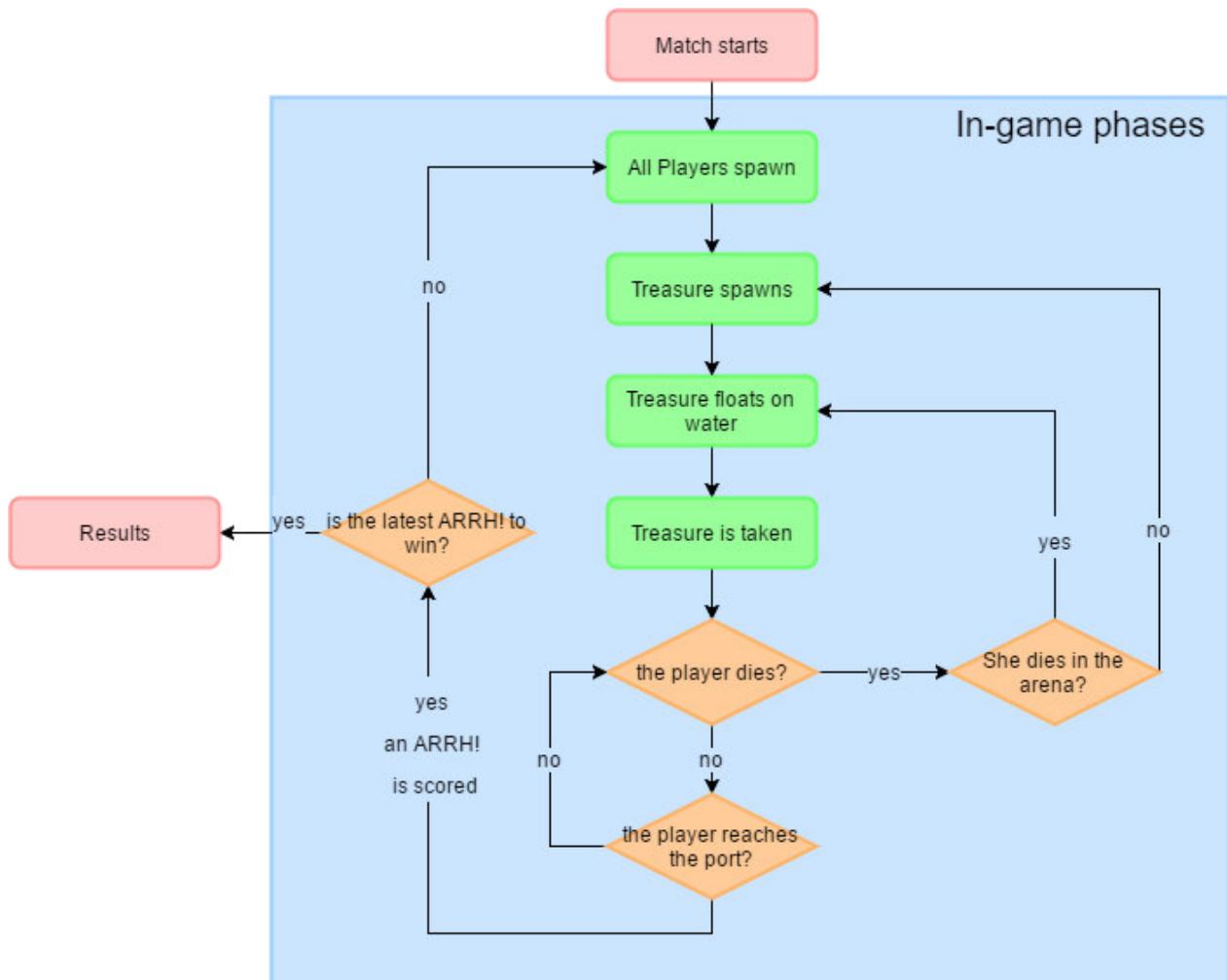


Fig. 5.7.5 In-game flow chart

6 Player's Identity

As an online game, once a player starts "Forbidden Seas", she has to create her own account. After the signup process and the first login, before starting to play, each player needs to create her avatar. During the game the player will act as the chief of a great fleet, she will be defined Captain and this title will be used during the whole game whenever an event in which she is involved will happen. Then she has to define her nickname to be recognized inside the game.

6.1 Social

Inside the game, every player can grow up her social connections. In fact she can add other players to her friend list and chat with them in any time they are both online. Also, there is a blacklist, for privacy reason and/or for avoiding undesirable players.

7. Game Characters

7.1 Class System

Forbidden Seas features a class system. Each class represents a different type of ship, sailors, statistics and a different set of skills. The player can choose between seven classes:

- Pirates
- Vikings
- Venetians
- Orientals
- Greeks
- Egyptians
- Submarines

Every ship is provided of two weapons: one main attack (usually ranged) and a special attack (usually melee range) with a much longer cooldown.

7.1.1 Pirates

Inspired by the piracy of the XVII century, the pirate class uses the *pirate galleon*, equipped with a massive cannon. The pirate galleon has a high fire potency but a low range and little maneuverability, due to its mass. If the player wants to one-shot her enemies, this is the ship she wants.

7.1.2 Vikings

From the icy northern seas of the 700s period, it comes the *viking drakkar*. It have a mid-ranged attack, a wide cone blaze that is erupted by the dragon on the front of the ship, gifted by the great wyrm Jörmungandr. It also has an high speed. It is useful when you want to fight 1 vs many or run as quickly as possible.

7.1.3 Venetians

The “Serenissima Repubblica di Venezia” was a powerful nation with a great navy power all over the oriental Mediterranean sea. Inspired by this, the player can choose the *war-type gondola*. Featuring an high speed but a low potency fire, the war-type gondola give its best when the player have to run, either away from her enemy or right way to the port. This is also the only ship without a ranged main attack: in fact the main attack of the war-type gondola is a 360 degrees wipe out with the oar.

7.1.4 Orientals

In the ancient China there was a great tradition of fireworks manufacturing. We can find this legacy on the *chinese junk*. Featuring a high defence, a wide firework attack either from the front and the back of the ship and a medium maneuverability but a low speed.

7.1.5 Greeks

Gifted by the mighty Poseidon, the *greek trireme* ruled over the Ionian sea for centuries. This ship has an arrow's flurry as main attack, and greek fire as special melee attack.

7.1.6 Egyptians

Along the banks of the Nile, the *solar ship* was an important part of the rituals in honor of Ra. His luminous presence grants to the solar ship the ability of blind his own enemies as special attack, matched with a deadly beam as main attack.

7.1.7 Submarines

The *nautilus* was the first practical submarine, back in 1800. Hijacked into the seven seas, the nautilus' objective now is to catch the famous treasures, launching torpedo and hiding himself under water to slink through the enemy lines.

7.2 Support ships

Each player, after the class selection, can control one flagship. After gaining the correct amount of Reputation points, she can summon one to two support ships that end to compose the player's fleet. The player can summon two different subclasses of support ships: a tank support or attacker support. Each support ship has the same speed of its Flagship and can perform only the main attack of it. The support ships can't catch the treasure so whenever they collide with it, they will pass through it like a ghost. If the flagship dies, the support ships she controls die too.

7.2.1 Tank support ship

The tank support ship has an higher defensive stats than the attacker ship and also a increased amount of health but both lower than its flagship. This support ship give to the player the possibility to create a valid defensive strategy during the game.

7.2.2 Attacker support ship

The attacker support ship has an higher fire potency stats than the defensive ship but lower than its flagship. This support ship give to the player the possibility to create a valid offensive strategy during the game and increase her kill's count.

7.3 Enemies and traps

During the game, some enemies are placed in the arena and in the canals. One of the enemy is the kraken, a monster that moves around the arena and deals damage to the players. If the players get too close, the kraken will chase them and try to kill them. This enemy is controlled by AI. Other enemies are the piranhas, monsters that stay near the channels' entrance and attack the players if they get too close. Even this enemies are controlled by AI.

The kraken and the piranhas are enemies that stay only in the central arena. In the canals there are some mines that explode if the player gets to close. Once the mine explodes, the player loses health point, and she is pushed away from the explosion.

7.4 Characters Statistics

(All values inserted in tables in this chapter are approximate and they will be balanced during development and after playtesting)

7.4.1 Class Statistics

Ship	Health	Speed	Maneuverability	Defense (-X% dmg)	Ranged Weapon	Melee Weapon
Pirate galleon	1000	120 m/s	low	15%	Cannon	Cannon hail
Viking drakkar	900	70 m/s	mid	10%	Blaze	Thor's hammer
War-type gondola	800	80 m/s	high	5%	Cross rifle	Oar wipe-out
Chinese junk	1400	60 m/s	low	15%	Fireworks	Miasma
Solar ship	800	80 m/s	high	5%	Ra's Beam	Ra's Eye
Nautilus	1200	50 m/s	mid	10%	Torpedo	Sub
Greek trireme	1000	70 m/s	high	20%	Arrow's flurry	Greek fire

7.4.2 Support Ships Statistics

Class	Health (X% Flagship's Health)	Fire Potency (X% Flagship's Main Attack)	Defense (X% Flagship's Def)
Tank	70%	50%	70%
Attacker	50%	70%	50%

7.4.3 Weapon Specifications

Weapon	Type	Fire potency	Cooldown	Range	Shape	Ship
Cannon	Ranged	450	2.5 s	40 m	Front Line	Pirate Galleon
Blaze	Ranged	300	2.2 s	24 m	Front Wide Cone	Viking Drakkar
Oar wipe-out	Melee	550	2 s	10 m	Circular AoE	War-type Gondola
Fireworks	Ranged	250	2 s	20 m	Front and Back Cone	Chinese Junk
Ra's Beam	Ranged	300	2.2s	32 m	Frontal Strict Cone	Solar Ship
Torpedo	Ranged	400	2.5s	36 m	Two Parallels Front Lines	Nautilus
Arrow's Flurry	Ranged	250	2.2s	[20 - 30]m	Emi Frontal Ring (90°)	Greek Trireme
Cannon hail	Melee	600	10 s	10 m	side cones	Pirate Galleon
Thor's hammer	Melee	500	10 s	10 m	semi circular front AoE	Viking Drakkar
Cross rifle	Ranged	400	10 s	30 m	3 ways cones	War-type Gondola
Miasma	Melee	Apply poison status	10 s	10 m	DoT AoE	Chinese Junk
Ra's Eye	Melee	Apply Blind Status	10s	10m	Status effect	Solar Ship
Sub	Melee	Apply Submersion Status	10s	none	Status effect	Nautilus
Greek Fire	Melee	Apply Burn Status*	10s	10m	DoT	Greek Trireme

*Burn status can be passed to other players on touch but it has a global duration.

7.4.4 Enemy Statistics

Enemy	Movement Speed	Chasing Speed	Damage	Attack Range	Chase Range
Kraken	70 m/s	40 m/s	100 hp/s	15 m	30 m
Piranha	30 m/s	60 m/s	50 hp/s	5 m	15 m
Mine	-	-	300 hp	2 m	-

8. Artificial Intelligence

8.1 Enemies AI

All the enemies spawns together with the treasure.

8.1.1 Kraken AI

The kraken is one of the enemy controlled by AI. Its aim it to find the flagships and destroy them. In order to do this he need an AI to make its moves. It moves to the current most populated area, then, after reaching that position, it emerges and deals damage to all the players in a fixed radius. After it deals damage, it chooses one of the players in the area and chase her and, if the player stays into the attack range, it harms her. If the player goes too far from the kraken, it will stop the chase and return to move again in the most populated area.

When the kraken is moving, it stays underwater and deals reduced damage in the area.

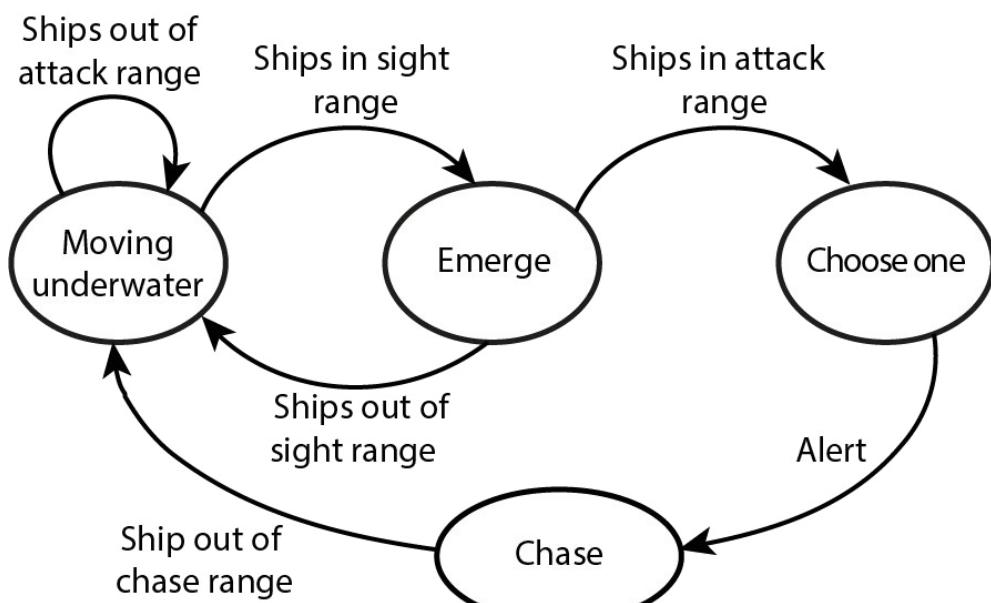


Fig. 8.1 Kraken's AI

8.1.2 Piranha AI

The other threats to the players are the Piranha shoals. At the entrance of every canal, there is a shoal of piranha acting like a guard, so the players have to be careful to not draw attention and pass safely. A shoal implements a flocking behaviour, where the piranhas stay in a circumscribed area around the entrance zone of every canal. If a ship enters the trigger zone of the shoal, it will be pursued and attacked by the piranhas unless it exits out of range.

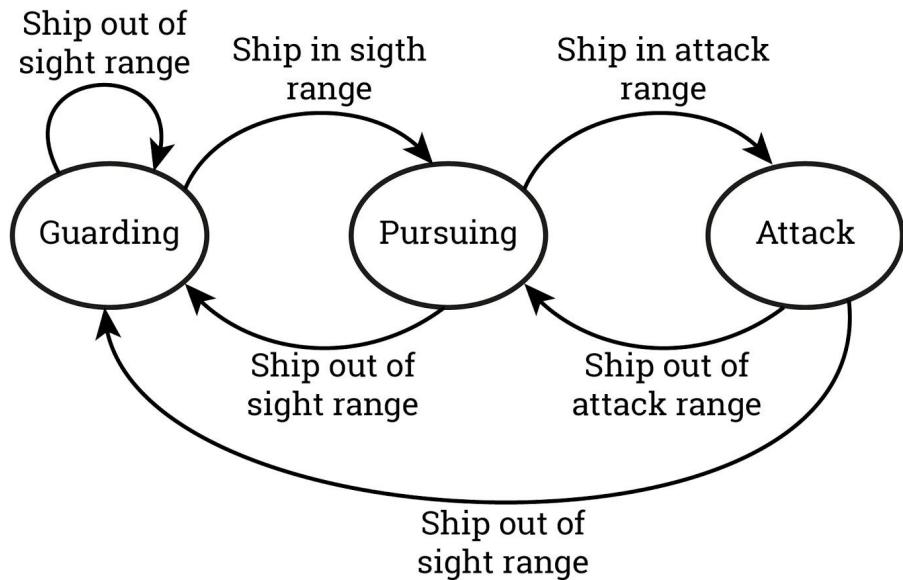


Fig. 8.2 Piranha's AI

8.2 Ally AI

The support ships are governed by the AI, settable in two different ways: a defensive mode and a offensive mode. The behavior could be changed in every moment during the game, and the support ships change their behavior in real time. The behavior is independent by the support ship types, so there are several combination that the players can test.

8.2.1 Offensive Behaviour

If the supports ships are in offensive mode they stay in an idle position following the flagship until an enemy enters a fixed range of 20m from the admiral vessel. So the support ships will follow her until the enemy exits from the fixed range or until the enemy falls in their fire range and then they will attack her. They will attack an enemy until she dies, or she goes too far. If the support ship dies, it has to be summoned again by the player.

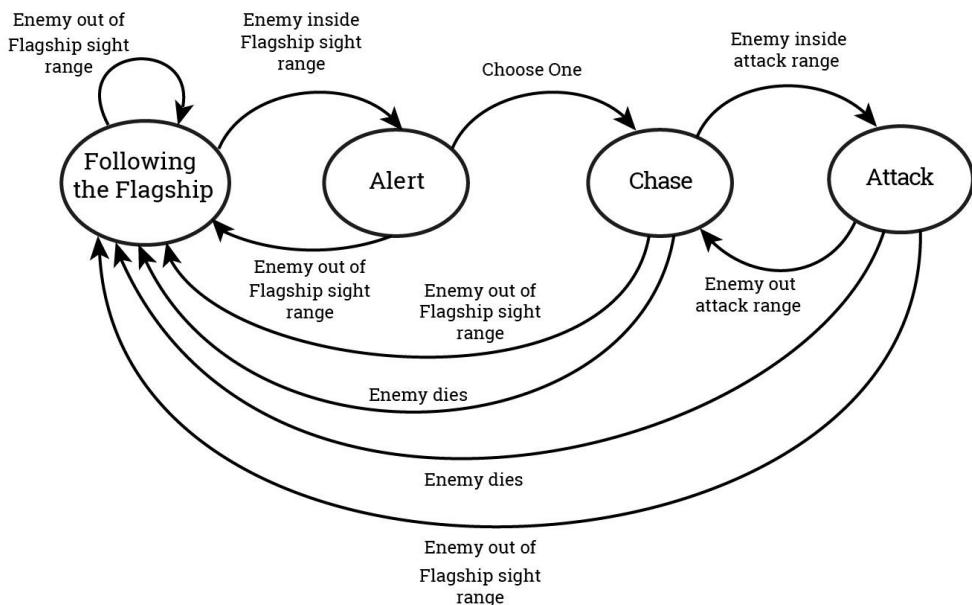


Fig 8.2.1.1 Offensive Behavior AI

8.2.2 Defensive Behavior

If the supports ships are in defensive mode they will stay behind the flagship following it, creating a triangular formation. This formation will give to the flagship an additional 10 % defense bonus for each support ship. In this mode, however, a support ship attacks only if an enemy player enters in the melee range (10 m from) of the flagship with an halved fire potency. The support ships will attack her until she dies or until she goes too far. If the support ship dies, it has to be summoned again by the player.

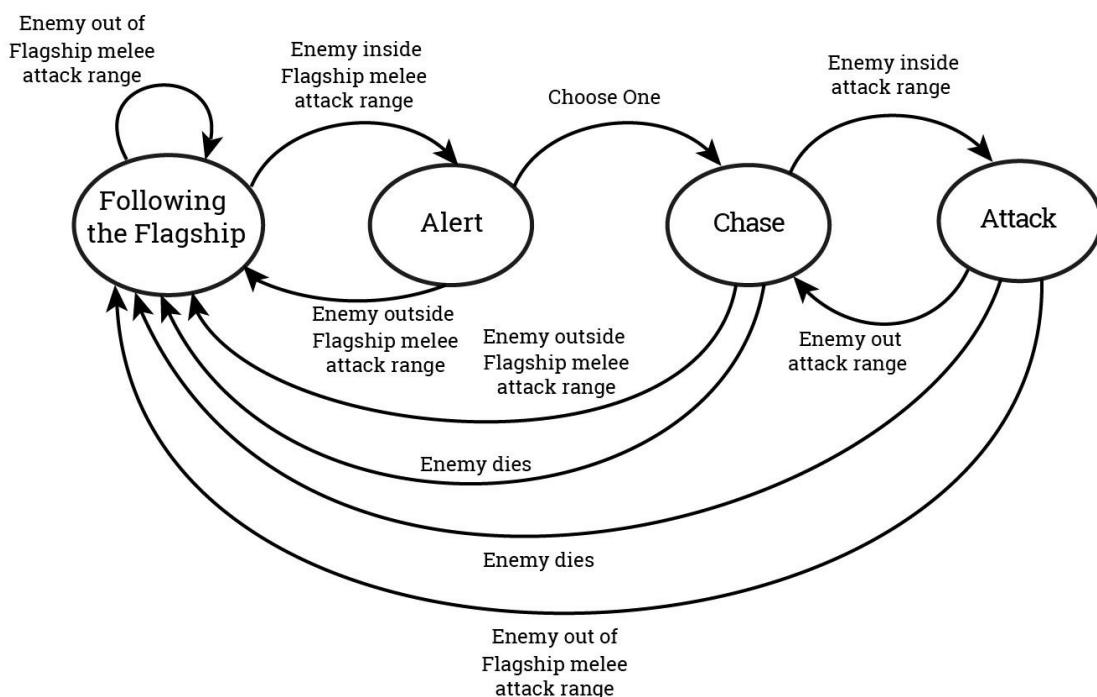


Fig 8.2.1.1 Defensive Behavior AI

9. Story

9.1 Synopsis

Ships come from all over the world and from different eras to fight each other to conquer the most desirable treasure in the world. Everyone wants glory and money, so they will fight until death to obtain them, probably because someone said that money doesn't buy happiness, but with those you can buy new ships and a lot of rum, and i've never seen someone sad on a boat full of rum.

10. The Game World

In *Forbidden Seas* the game's world is represented by the sum of each arena playable. Each arena will have its profile, boundaries, schema and setting. For instance, the first one that will be released with the first version of the game will be the arena described in chapter 5.5. That arena has a caribbean setting, so there will be a light blue and crystalline sea, with many islands spreaded around. Each island will be covered by palms and other elements from a typical caribbean set. The unique common key between each arena will be the polygonal and toon graphic style.



Fig 10.1 Game World's examples.

In the future there will be added other arena's sets in the typical environment that characterized each class; for example a nordic one for the vikings class or an asiatic one for the orientals class.

11. Sound Design

In Forbidden Seas for every arena there will be a unique background music theme related to the setting. For instance, in the nordic arena, it will play “norwegian folk”-like music. All the musics are going to be “piratical mood” anyways.

11.1 Sound Effects

In addition to the ambient sounds, it is imperative, for a better involvement, to add sound effect for every action in game. All the sound effects will be designed as toonish style, in line with the visual style. Obviously, every ship will have its own characteristic sound effects.

12. Media List

GUI Development:

- Game logo and Login screen
- Main menu and account & character management screen
- Ranking screen
- Lobby
- In Game UI (Live statistics and Live visual feedback)
- Icons for stats, altered status and reward
- Buttons

Models & Animations:

- Ships' models
- Ships' animations
- World environment (Arena)
- Enemies models and animations
- Other in game elements like palms, rocks and trunks,
- Avatar for each class and animations
- Textures
- Materials

Visual Static Elements:

- Loading screens
- Arenas previews
- Backgrounds

Audio:

- Login soundtrack
- Menu and ranking soundtrack
- SFX for menus, animations and in game events
- In Game Soundtracks

Visual Animated Elements:

- Cut scenes
- Cinematics
- VFXs
- Trailer
- Gameplay Trailer

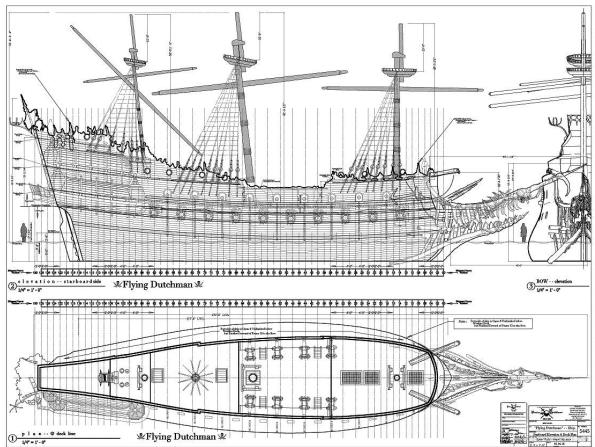
13. Graphic References

13.1 Characters

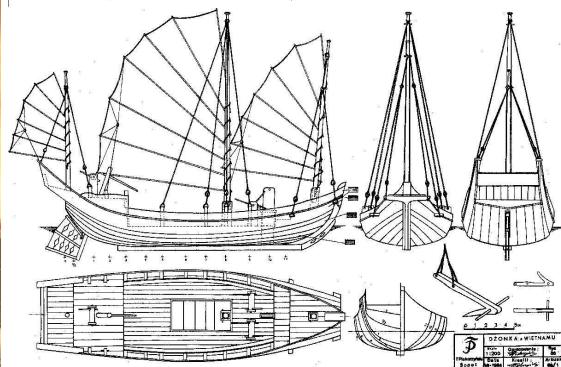
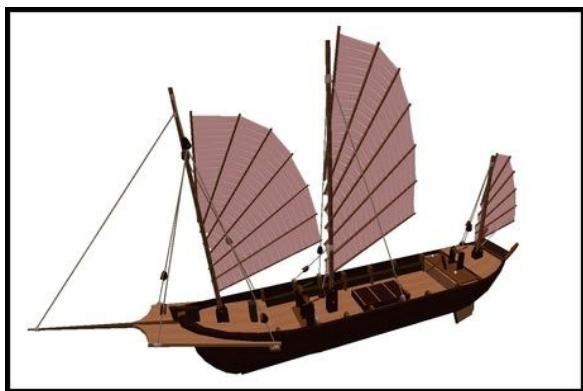
13.1.1 Classes

Pirates' Ships

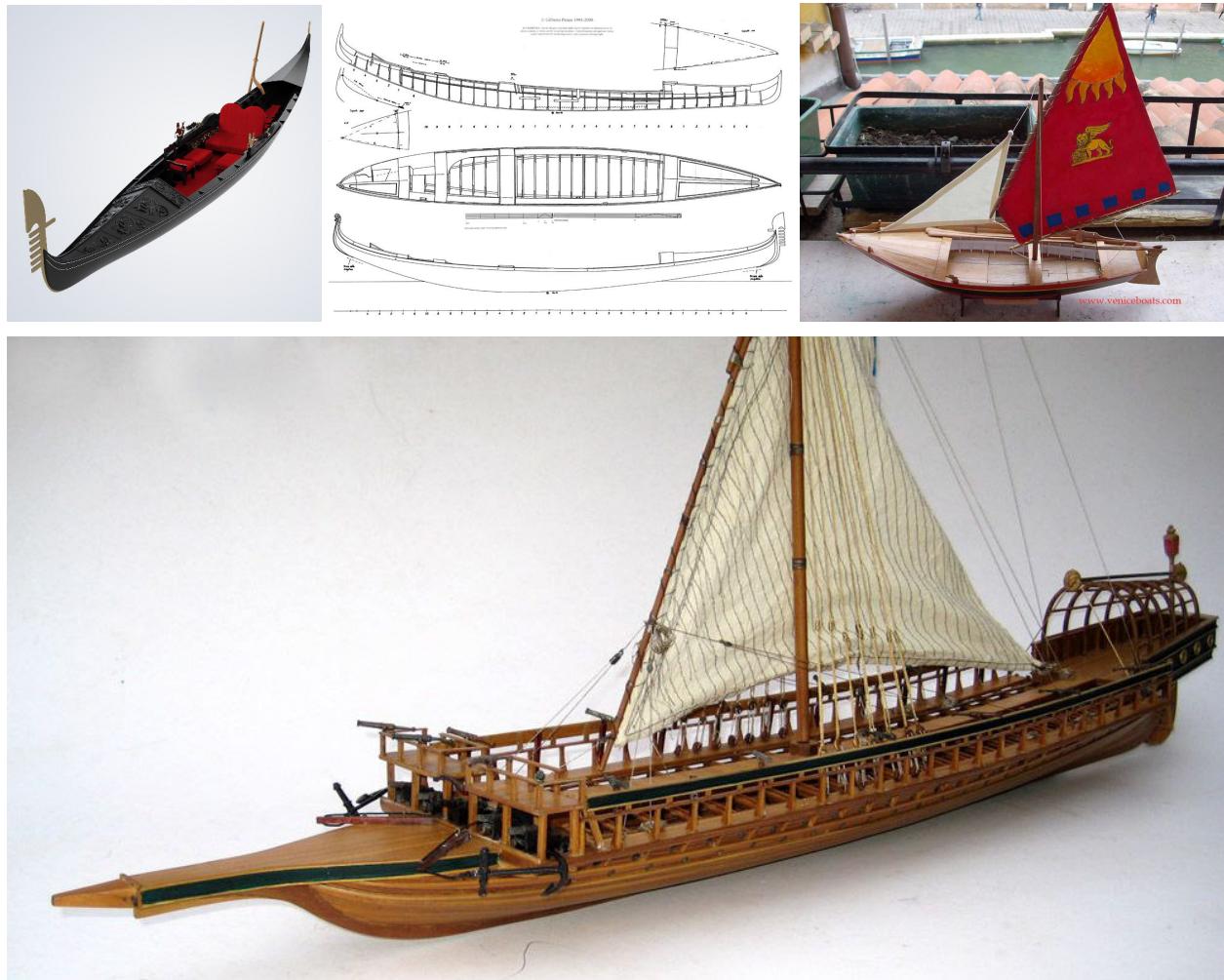




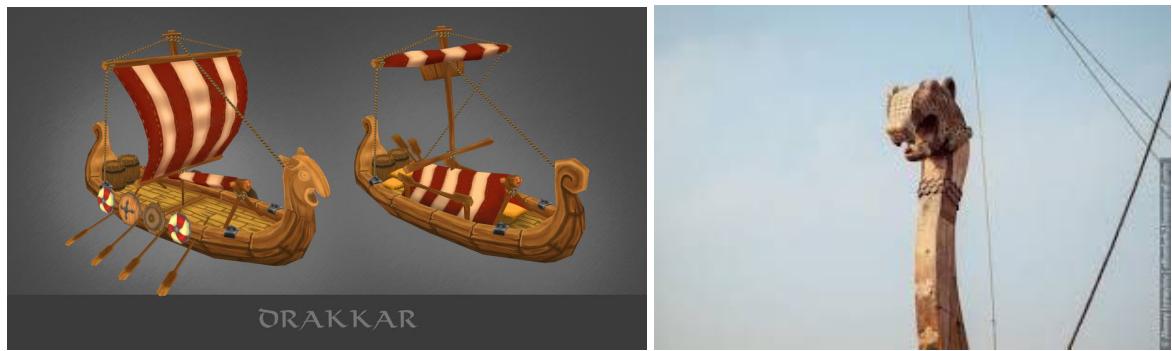
Orientals' Ships

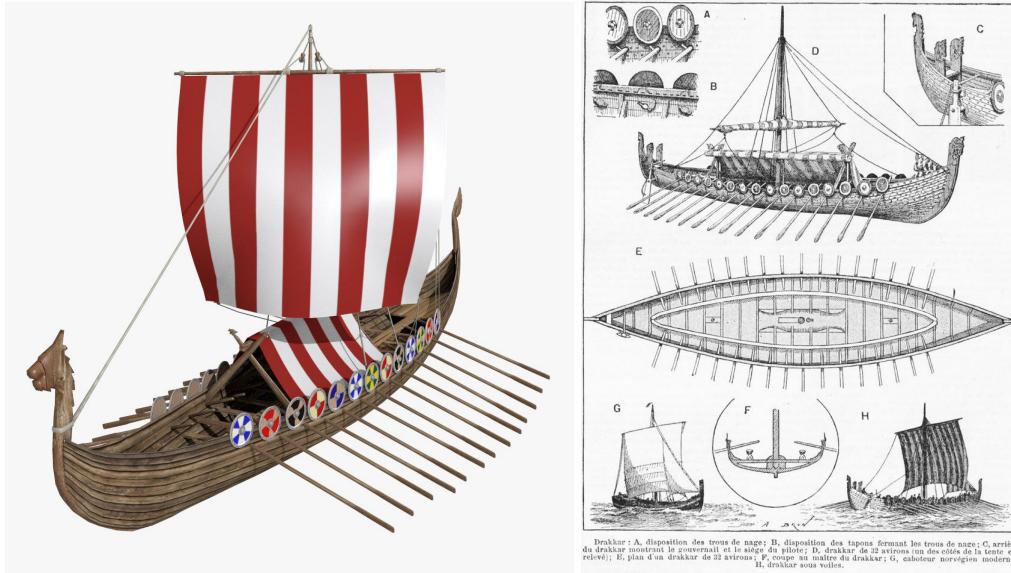


Venetians' Ships

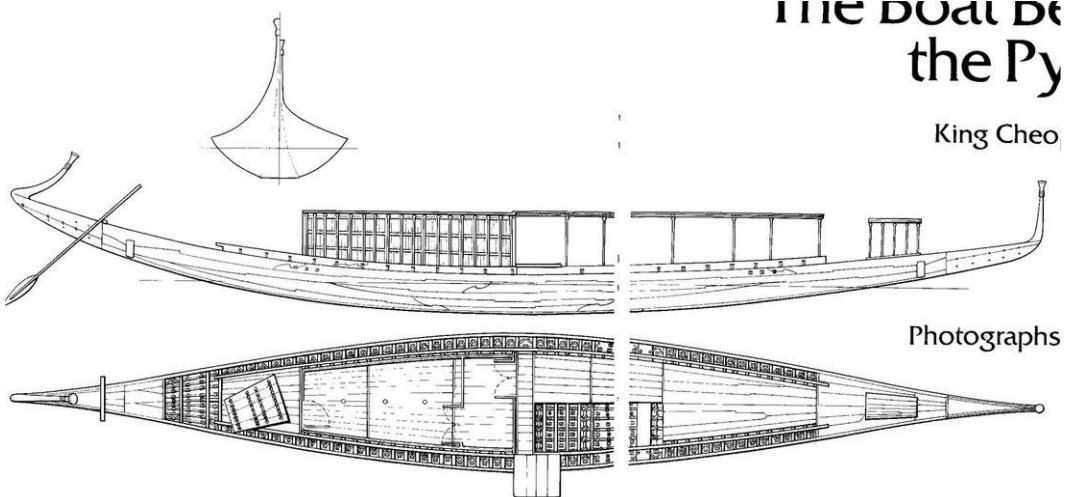


Vikings' Ships





Egyptian's ship



13.1.2 Enemies



13.2 Game Elements

13.2.1 Treasure



13.3 Environment

13.3.1 Islands and floating elements



14. Prototype

The prototype will implement only the core of the entire game. It will be played in local network and it will have a standard free-for-all time attack match with only four classes available. Only one arena is implemented.

- Match: free-for-all time attack
- Classes available: Pirates, Egyptians, Vikings, Orientals
- No login
- No player page
- No support ships
- No AI governed enemies
- No personalization available
- Not provided ranks of the players
- No shop available

15. Trailer Storyboard

1



a great rush

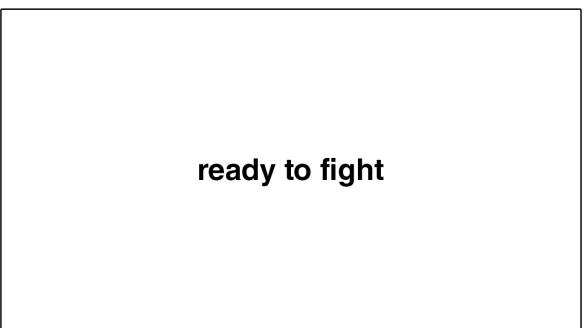
Black background, text enters with slow fade in and then exits with a slow fade out. Environmental SFXs start here, like water, birds and bells.

2



Slow fade in, camera is floating like a ship with a fixed perspective.

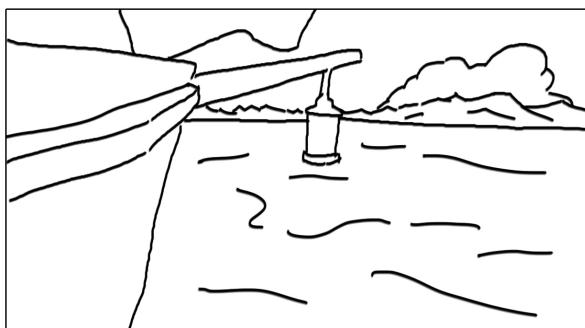
3



ready to fight

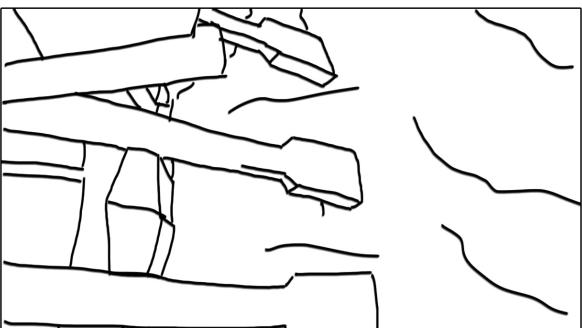
Black background, text enters with slow fade in and then exits with a slow fade out.

4



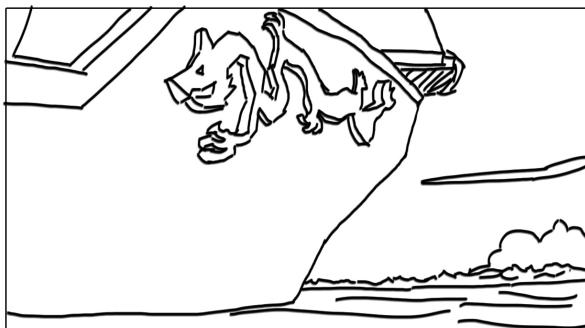
Zoom-out with focus on the lantern of the ship that float on the water. Landscape lightly blurred. Then it exits with a slow fade out.

5



Zoom-in with a little camera slide to the right. Camera follows the ship while moving. Then it exits with a slow fade out.

6



Slow camera slide from the right to the left. Then it exits with a slow fade out.

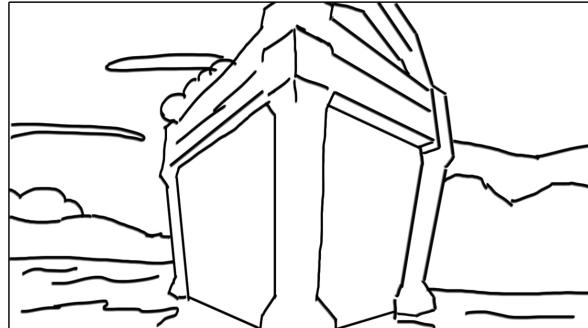
7



one goal

Black background, text enters with slow fade in and then exits with a slow fade out.

8



Camera slides from this view to a frontal view of the treasure in the center of the screen. Then it exits with a slow fade out.

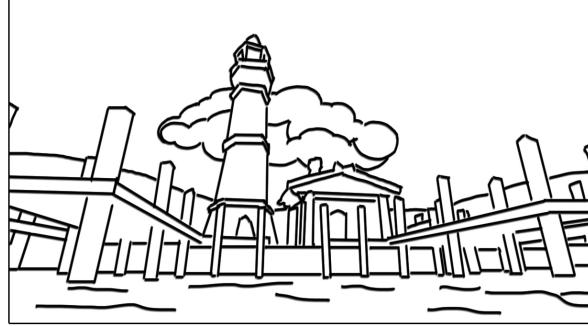
9



a safe harbor

Black background, text enters with slow fade in and then exits with a slow fade out.

10



Slow Zoom-out and then it exits with a fade out. Environmental SFXs stop here.

11



FORBIDDEN
SEAS

Black background, text fade in and scale up to this size.

12

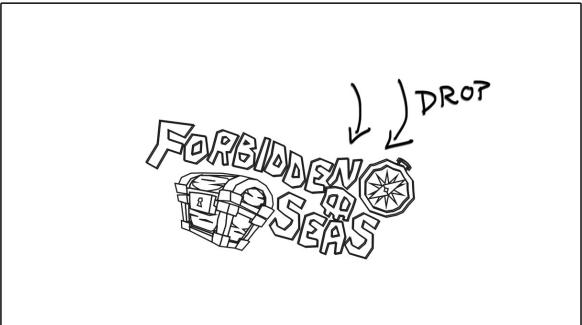


FORBIDDEN
SEAS



Chaos everywhere. The logo shakes. Cool explosions and sound effects.

13



FORBIDDEN
SEAS

→ → DROP

Logo drops in a funny way. Comical SFX.

14



FORBIDDEN
SEAS

→ BOUNCE →

A barrel clumsy bounces three times. Comical SFX.