

A-5 Entertainment

Design Document for:  
Misty Ocean: Battleship

“Weigh Anchor!”

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Version # 2.20

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# Design History

MistyOcean Battleship started out as a turn-based strategy indie game in which players control the marine fleet and move them in grids on the map to play. What differentiates MistyOcean from other ship battle games is the design of mist that could cover the position of the players' ships. When attacking the opponent's ship, the player must take into account that the position of his/her ships are not found in the early stage and accumulate attack power to give the enemy a fatal blow.

## Version 1.00

The document was initiated and the overview of game, philosophy 1,2, and 3 was updated. The character design of battleships is created. The scope of features of MistyOcean is determined by the feature set sections and the world editor feature remains unsupported.

## Version 2.00

The single-player, and multiple-player mode was added. We incorporated weapons and narrowed down the details of basic battleship armament, and tactical artillery. The live-2d model was introduced to the character rendering system and the difficulties of adjustment of models for each character was identified.

## Version 2.20

In this revision of documentation, we add music and sound documentation and appendix of user interface and character story. We finalize the design of the user interface of the home page and main page. The format of the document is adjusted and the table of contents is modified accordingly. The detail of the game engine, the purpose of choosing the A-5 frame, and the details of the water model is added.

# Game Overview

## Philosophy

### Philosophical point #1

MistyOcean is trying to cultivate the ship battlement on the wechat mini-game platform which enjoys 1.17 billion users which means wechat users could share the mini-game to friends, and we assume all of our users are Wechat users. At present, games like misty ocean have not been developed or widely circulated on the wechat mini game. The reason we decided to launch MistyOcean on wechat mini-game platform is that wechat provides a powerful platform that could share with wechat friends and it ensures the login function is convenient for users so they don't have to provide extra personal information.

### Philosophical point #2

MistyOcean adopts the design of fog that affects the battleship's invisibility. Players should consistently apply artillery and attack to disperse the mist and make judgement of the location of the opponent's battleship, and accumulate fire power to destroy all warships. The two criteria for a player's victory are sinking your enemy's captain ship or your opponent is choosing to surrender.

### Philosophical point #3

Our goal of the game is to provide players with immersive experiences in the context of imaginary world and side-shooting game play. We add the Moe anthropomorphism element and kawaii girl illustration of a battleship characterized by an aircraft carrier deck or heavy cruiser's gun. The anthropomorphized battleships are ascribed to different personalities and characteristics and they are steady supporters and advocates of the player's character, captain of all warships.

## Common Questions

### What is the game?

Misty Ocean mainly is a 1strategy game which involves the player's navigation of Moe anthropomorphism battleships. The players must attack the designated location or use the artillery to disperse the misty. Players will be given two views of the game: the first view is your sea area and the second view is your enemy's sea area, and that is to say, you and your opponent are located in two separate grids but the actual location of the warship is not visible due to fog weather effects. The harm will not be undermined by the misty weather which means if you attack the grid on which your enemy's warship is located, the harm is validated. Additionally, players should take care of their captain warship from the attack of enemy's. Players could choose to attack or move based on fuel resource or action point. The game is inspired by Azur land, a popular video game created by chinese developer, Xiamen Yongshi and Shanghai Manjuu and operated by Bilibili.

### Why create this game?

Most of the developers in our company enjoyed the theme of ship battlement, Moe anthropomorphism and delicate female illustration. Given how such strategic and board games with Moe elements are dormant in the Wechat mini game market, we decided that we should bring it to the mini-game platform with huge customer groups. This entails adding a misty weather effect on the ocean area which could make the ship invisible, one which has yet to be done in any other Battleship board game.

### **Where does the game take place?**

This game takes place in Isekai (other world) and the protagonist accidentally travels into the world with heavy mist and he was assigned to be the captain of a marine fleet. Because the whole world is shrouded in heavy fog, the only measures to go abroad is traveling by boat, and countries are relatively closed and lack diplomacy so when the protagonist and his crew members encounter ships of other forces, they will enter the state of battle.

### **What do I control?**

Within the game, you are controlling one captain ship and two warships who need to sink the opponent's captain ship to end the game. The movements of the warship will mimic the special effect of floating and the chibi version of the characteristic which appears on the grids will swing whenever users want to control the motion of the captain ship. A player could switch views to take care of his/her ocean area and the opponent's ocean area and attack a visible opponent's boat by clicking on the opponent's boat to check status and attack. Players could choose any blocks to attack on the opponent's ocean area to disperse fog and destroy a warship unit. If the fog disperses and the warship comes visible, players could also move the warship on their turn to hide inside the fog again. The motion is completed by the player if they choose which warship to move and click on a block within the range they are allowed to proceed.

### **How many characters do I control?**

Currently, as the player acting out the captain of the marine fleet, he/she could control one captain ship and two warships at a time. If multiplayer features are implemented, each player will be able to take control of a marine fleet with one captain ship and two warships. Later with more implementation of features, players will be able to customize their warships name and appearance as they please.

### **What is the main focus?**

The main focus of the game is to destroy and find the location of the opponent's captain ship or force your opponent to surrender by accumulating your fires on the captain ship. Splitted marine fleet hardly leads to triumph, and a concentrated fleet could easily destroy a captain ship. Along the way, users may randomly obtain artillery that could enhance warship harm or increase action points which will be represented by cards. There will be a counter to keep track of your action point, fuel and artillery bank and the hp, mp of your warship. For each turn, the system will either idling or provide players with a free artillery (which could reach 10 unarmed artillery at each turn) and one action point and the fuel resource will be refilled. In the second view, players could click on your opponent's warship and check hp/mp status or choose to attack the ship whenever it is visible. Every turn one block of fog is dispersed, the warship will get progressively harder to hide and have to adapt the attack mode.

## **What's different?**

This game brings back challenges of strategy of the ship battlement board game which have unfortunately turned out a singularity these days. And what makes the game unique is also the rarity of this type of game on the wechat mini-game platform. MistyOcean places a great deal of emphasis on strategic planning in the case that players must balance the action point and fuel resource especially in the condition when your opponent's cruises are invisible. Because the fuel resource and action point is limited in one turn of the game and these resources could only be refilled at the beginning of each turn or by the effect of artillery. When a player's fuel and action point drops down to zero, his/her warships enter a freezed state and your warships will not be able to revive once they lose all health.



# Feature Set

## General Features

Huge world  
Live-2D graphics  
32-bit color  
Moe anthropomorphism  
Relatable goal and protagonist story  
Interactive feature with your waifu  
Battle with built-in AI and Wechat friends  
Share the game and the game link

## Multiplayer Features

Up to 20 million players  
Easy to find a game  
Easy to find your pal in huge world  
Take turns with another player to beat opponent's captain ship  
Choose different boat to be captain ship  
Customize battleships with different outfit  
Configure weather setting on the board

## Editor

The weather editor  
The terrain editor  
The AI editor  
The battleship editor

## Gameplay

Quick to start the game  
Simple learning for rookies  
Single player and battle with AI  
Beat enemy's captain ship  
Chat with battleships in the main menu  
Equip battleships with artilleries  
Invoke active skills of capital ship  
Disperse the mist on the game board by attacking a block  
Enter the next turn and end the current round  
Move battleships and hide them behind the mist  
Change your main screen waifu  
Multiple language support (support Chinese, English, Japanese)  
Maneuver cooperations between battleships  
Reserve attack points and concentrate fire on the captainship

# The Game World

## Overview

MistyOcean takes place in Isekai world, where the country is facing a major crisis of invasion from enemies over the sea. The game environment is completely over the sea. It includes an animated sea background and sound tracks and other distinguished features. The player is summoned by the king's ceremony and he is designated as the captain of the marin fleet with three battleships. The world is shrouded in the influence of heavy fog, thus the location of marines on the enemy's field is invisible unless the player controls the battleships to attack and disperse the mist.

## Geographic features

The scene of the battles occurs over the sea, a 5x5 map. Players are presented two views to keep track of both mist coverages and battleship locations. It corporates large and diverse world backgrounds and offers possibilities to customize the game and play.

## Live2D and Moe anthropomorphism character feature

There are six main characters in the game MistyOcean and each of them owns distinctive personalities. The game consolidates a dramatic storyline. Captain gains trust and friendships during the daily life interaction with these characters. The game offers character development and dialogue. The live2D enables vivid facial expressions and body movement of characters.

## The Physical World

### Overview

The physical world of MistyOcean includes the country that summons the player, the ocean, other friendly, natural and hostile countries, and places that are not possessed by a country. The playable area will be enlarged based on the player's progression. There will be many landmarks in the world to help the player navigate through the physical world as well as make the world more recognizable. The visual appearance of the physical world will change based on the time and the season. In special events (e.g. holidays), the physical world will be decorated in order to celebrate the event.

### Key Locations

The key locations in the game include the palace of the country where the player is summoned to, and the ocean acted as the battle area. The palace is the place where players receive their new quests at the beginning of the game and prepare their arsenal. The ocean is the battlefield for many battles in the game.

### Travel

In multiplayer games, since the player just directly jumps into battle, there is no movement of the physical world involved.

For the single player game, the player moves to different places by clicking the map. If the player clicks on a valid position, the scenery of that location will be loaded and displayed. For example, if the player clicks on the arsenal, the arsenal interface will show up, and then the player can arrange their artillery and their ships, as well as enhance existing artillery and ships, or invent new types of artillery.

### Scale

Since the characters will be rendered with chibi art style, the scaling will be more like minifying most of the game object so that the characters will look cuter and be more fitted with the environment. If the environment is not scaling down (minifying) as the same ratio as the character, then it will make the character look tiny and powerless.

## **Objects**

There will be many objects in the game world. Some of them are collectable, and the rest are decorative objects. Collectable objects include fuel, gasoline, artillery, metal, mine, and cash. These are necessary resources for the players to prepare their battle. Decorative objects include trees, buildings, and other scenario decorative objects like fire and ruins.

## **Weather**

There will be a weather system in the game. And the weather system can change the battle by adding a special mechanism to it. Currently, there are four different weathers, sunny, foggy, snowy and stormy weather.

## **Day and Night**

Currently, the game only supports day mode. The night mode could be included and it may also add new mechanisms to the game, like speed up the fog formation.

## **Time**

Currently there will be no time elapsing during the battle. The time in the main menu and the single player map may reflect the player's current time (i.e. if the player launched the game at 9 p.m., then the game will show the scenario at 9 p.m.).

There will be a timer in the multiplayer battle. Once the timer is called, the player will automatically give up the current round and enter the next round. This is the mechanism to prevent AFK players from blocking the game.

## Rendering System

### Overview

All elements of the game are rendered to a Canvas, by Javascript. Objects will be stored into a Databus, so that they will be rendered by canvas in given order. Most rendering operations are managed by A5 Frame, only some system buttons, like Login and Share will be implemented by WeChat API.

More details about A5 Frame and engine, please go to “Engine” chapter.

### 2D/3D Rendering

After entering the game, the WeChat platform will provide a whole Canvas for use. Images, animations and audio can be drawn to Canvas by Javascript program. The working flow of the rendering system is arranged by A5 Frame.

In Mistyoccean, we decided to use a 2.5D view to show our game scenery. It is still a 2D graph, but we created an algorithm to convert it into a 3D perspective. So we carefully adjusted our camera view to make it possible. More details are in the “Camera” chapter.

## Camera

### Overview

The camera is placed in a fixed position, overlooking the whole game panel.



### 2.5D Implement

The origin game elements are placed into a square grid. That is, in a 2D view. But we found an algorithm that can calculate the perspective of each element, so the closer element is bigger and wider and the further element is smaller and narrower. After the 2.5D converting, the whole game graph will be more vivid and smooth.

All perspective coordinates are real time calculated, so we do not need to worry about perspective problems when adding an element into a graph.

# Game Engine

## Overview

In general, the Mistyocean is a light mobile game. Like Java's tag "compile once, run anywhere", we manage to make our game be able to run on most mobile devices. Eventually we picked WeChat as our platform.

WeChat is a widely used social media platform that also supports light web apps and mobile games. That is, WeChat will provide an environment for Javascript programs, and let users easily share the game to others. Imagine when chatting with your friends, you can share a mobile game like a normal photo on your phone. Once you click the link/scan the QR code, you will be able to start playing the game with your friends immediately without installing it on your devices.

The game is based on Javascript, and rendered by Canvas, same as normal H5 games. So the "Engine" of the game is technically the Javascript interpreter engine on the platform. For example, V8 on Android.

Besides the native JS engine, we made our own frame for Mistyocean. We named it "A5 Frame". The frame is used to manage resources, rendering, touches, web sockets and so on. More details can be found below.

## A5 Frame

A5 frame is served for five purpose:

1. Manage resources. There are hundreds of images, audio and text libraries in our game program. A5 Frame will decide when and how to load them into memories, as well as unload them to improve performance.
2. Render objects. Sometimes, more than fifty elements appear in one frame. The A5 Frame will render them on Canvas, considering their priority, position and size.
3. Handle events. Clicks, slides and drags. All kinds of inputs will be handled by the A5 Frame. Users might interact with games anywhere on the screen. Therefore, A5 Frame can manage interactions and create a user-friendly reflection.
4. Manage Network. There are two types of network protocol in the game. HTTPS and WSS. The HTTPS connections are used to download and upload static information from the server, like users' name and avatar. The WSS, aka secure web socket, is used to connect client and server during the game. A5 Frame will take care of both network connections, and make sure nothing about the network goes wrong.
5. Make the game "social". Because Mistyocean is based on WeChat, we want to make full use of its social media property. A5 Frame will make this Javascript game suitable for social networks, that is, be accessible anywhere and anytime.

## Water

Water is the background of the graph. A streaming water animation can make a vivid atmosphere when playing the game. Water background is also changeable. Different combat stages may toggle different water animations. Like "fair sea", "fog" and "storm".

# The World Layout

## Overview

Regardless of the game modes and levels, the battles always take place in the misty ocean divided into two areas, each is further subdivided into a 5x5 grid of fields and each is taken by a player. The ocean is covered with fog of war and a long distance is assumed to be present between two players' forces. Thus, there is no way of knowing the enemy's location until the player pierces through the fog above the enemy's fields.

|  |                  |
|--|------------------|
| Picture placeholder. Player field view | Enemy field view |
|--|------------------|

## Two-Layers Battlefield

Each player presides over a 5x5 of two-layers battlefield. The first layer on top is the fog of war and the second layer underneath is the ocean surface.

Fog exists by default at the beginning of each game. Everything beneath the fog of war is invisible to the enemy's view. Fog will be temporarily dissipated when the field is under attack, revealing the second layer to both players. Fog will not block or diminish an attack, therefore the unit will take the same amount of damage whether it was covered by fog or not. Finally, the fog will reappear on a field after three rounds of being dissipated.

## Weather System

In future iterations, we intend to incorporate a weather system to enable a dynamic game world. In some game modes or levels, the weather will change every several numbers of rounds and cause minor adjustments to the game board mechanism. To name a few:

- Sunny: At each round start, two empty fields will automatically dissipate its fog.
- Foggy: Fog will reappear after 2 rounds of being dissipated instead of 3 rounds.
- Snowy: Fog will not be dissipated unless an attack could deal more than 4 damage.
- Stormy: Moving cost 1 extra unit of fuel.

# **Game Characters**

## **Overview**

All characters in this game are anthropomorphized battleships. The battleships have different classes just like battleships in real-life, for example, aircraft carriers, light cruisers, heavy cruisers, etc. Most characters will have their distinctive skill or status. Players will have , by default, three battleships in their fleet when they first create their account.

## **Creating a Character**

Players cannot create their own anthropomorphized battleships for their fleet, but can acquire battleships through loot boxes. Players can give nicknames to their battleships. Players can hear dialogues from the anthropomorphized battleships.

## **Enemies and Monsters**

The enemies are also anthropomorphized battleships from the enemies' fleet.

# User Interface

## Overview

The interface of the game in the current version has two pages: the home page and the game page. The home page interface is used when the player opens the game, and the game page interface is used when the player engages in a battle with another player or AI.

The interface is designed with simplicity, readability, and coherency in mind. Most static elements are consisting of polygons, and have similar colors. Icons are also used to guide players.

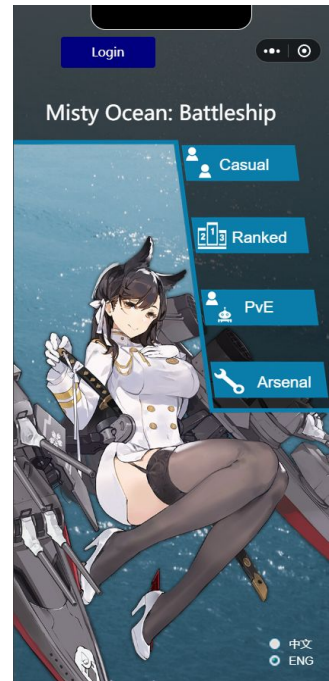
### The home page:

The home page has a login button, four page selection buttons, and a language switching button.

The login button is intentionally made darker in order to notify the player to login before any further actions. Clicking the login button automatically logs in the player's Wechat account; upon successful login, the login button will be replaced by the player's profile picture and id.

The four page selection buttons are stacked on the right side of the screen, each having identical color and shape, but a unique logo. Clicking on the button will enter the respectful pages. In the current version of the game, only the "PVE" button is functional, upon clicking it will enter the game page, which will automatically connect the player to the server and start a battle against an AI.

The language switching button allows the player to change the interface's language, the default language is English. The current version of the game only supports English and Simplified Chinese.

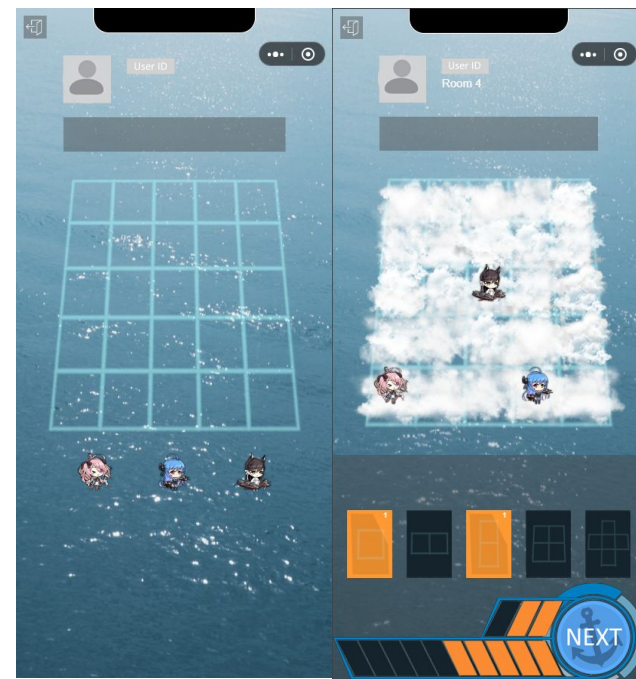


### The game page:

The home page has two stages, a deployment stage, and a battle stage. The user is prompted in the deployment stage when entering the game page to deploy the player's battleship. Upon deployment, the page enters the battle stage, and will remain in this stage until the game finishes. Both stages have a 5x5 square grid, a grey information bar to display notification and hints, and player's profile picture and id.

In the deployment stage, the player can drag the battleship into one of the 25 square tiles. Once all three battleships have been deployed, the game automatically starts and the interface changes to the battle stage.

In the battle stage, the interface consists of an integrated design of fuel bar + action button at the bottom, five artillery slots above it, and the 5x5 square representing the battlefield. A dark parallelogram indicates an empty fuel cell, and an orange parallelogram indicates a filled fuel cell. The fuel bar has two layers, the top layer represents the reserved fuel and the bottom layer represents current fuel. The five artillery slots have their own logo respectfully. When the player possesses zero artillery of one type, the corresponding slot is dark, when the player possesses one or more of one type, the slot is orange, and a number on the top right will indicate the amount the player has.





# Weapons

## Overview

The battles in the game take place on the ocean with great distance between two battle forces. Thus, the weapons in the game primarily consist of two types, basic battleship armament, and tactical artillery. The battleship armament is equipped naturally by each ship and provides the basic means of attack. The basic attack can be performed by any battleship and it is a single-target that deals damage equal to the ship's attack stat.

The artillery is a weapon type that is affixed to the basic armament and enhances the attack range, increases the damage, or applies other special effects. Some powerful artillery requires loading time, which means the ship cannot attack until the artillery is fully loaded. They are tactical items to enhance the complexity and depth of the gameplay. The players can only keep a limited amount of them and they are replenished over time. The system encourages players to make game plans and use artillery selectively.

## Weapons Details

There are five basic types of artillery:

1. Armor-piercing Cannon

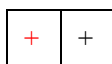
Range:



A single target missile that costs 1 unit of fuel to equip, can be loaded within the same round and deals 3 bonus damage if it hits an enemy. Once an enemy ship is exposed, it can be used to create a powerful shot, doing burst damage and taking down the target as quickly as possible.

2. Naval Gun I & 3. Naval Gun II

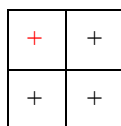
Range:



A wide-range weapon that can also attack the area next to the target. Both cost 2 units of fuel to equip, can be loaded within the same round and deals 2 bonus damage if they hit an enemy. This weapon allows one ship to attack two fields at the same time while also dealing burst damage. It is designed that players should use it when tracing down an enemy after the enemy has retreated to the fog of war.

4. 200mm Rocket Launcher

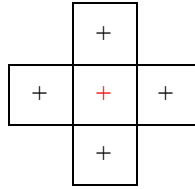
Range:



A rapid-fire artillery that launches multiple rockets to strike a large area. It costs 3 units of fuel to equip, takes one round to load and deals 1 bonus damage. This weapon attacks four fields at the same time, largely increases the chance of locating hostile ships. Its fire power is inferior in comparison, thus it is expected to be used primarily for finding enemy's units.

5. Ballistic Missile Launcher

Range:



A destructive missile carrying multiple warheads to strike a large area. It costs 3 units of fuel to equip, takes two rounds to load and deals 2 bonus damage. This weapon is extremely powerful and is the most difficult to deploy. It is expected to be used primarily for finding enemy's units.

## Future Updates

In future iterations, we intend to introduce a variety of battleship units, and some of them will have skills that modify the current artillery types. The modifications is expected to come in two ways:

1. Skills that empower a certain artillery type when equipped with it. For example, when the unit with such skill is equipped with a Ballistic Missile (type 5), the loading time is decreased by one.
2. Skills that replace a certain artillery type with a new one. For example, when fighting with the unit with such skill, the Armor-piercing Cannon is replaced with torpedoes which deal 5 bonus damage.

# **Musical Scores and Sound Effects**

## **Overview**

Due to the nature of the gaming running on mobile devices, we do not plan to implement any advanced sound effects or soundtracks, and keep the scope of music within primitive forms. Since our development team currently do not have any experience with sound design or editing, the current version of the game does not have any sound at all.

In future updates, we would like to add sound effects for when players click buttons, move the battleships, and fire the battleships. We also wanted to originally design immersive background musics for the menu page and in game. We aim for a background music that resembles, or took inspiration from, the demo video's background music.

# Single-Player Game

## Overview

In the single player mode, the player takes control of three fleets and places them at the grid-like 5x5 map similar to the game “Azure Lane”. Players are given two maps, one presents the player's view and another presents the view of the enemy's fleet which are all covered by mist at the initial round. In each round, the system will generate artillery. In the player field view, they will be able to view the current health level of each battleship and keep track of their artilleries. In each round, the mist could be dispersed by the attack of battleships. The mist will recover after three rounds. The cycle of mist recovery finishes when the game ends.

## Basic controls

When the player takes control of the battleships, cardinal controls are accessible for the player. And arrows will appear to indicate which direction the user could choose to move the battleships. Namely, five commands (“next”, “move”, “attack”, “equip”, “invoke”) are provided to the player. The player could choose to proceed to the next round and not make any moves. Battleships could be moved and disguised themselves under the mist. The battleships could be moved once the player pressed the block with a valid arrow on it.

## Equip weapons

The player could also control Battleships to attack with basic battleship armament, and tactical artillery. Since they are given two views, the invoke, equip, next, and move command could only be performed on the players field view. The attack command could only be conducted on the enemy's field view.

## Story

Players are the protagonists of this story, so in the story will replace “player” with “you” in the story below. When you gradually obtain your sober consciousness, you suddenly realize that the scene around you is not the familiar bed at home, but another bed. You start to feel strange, and chat to an exotic girl who claims to be Nanami and tell you that you are summoned to this Isekai world by the ceremony held by the king of the country. King summons adventurers to resist invasion of enemies. The priests in the country made a prophecy that you will be the one who could save their country and lead their country to a brilliant future. They have techniques to build battleships and artillery to enforce the attack and defense. The only resource they need is a true captain to make meticulous tactical attack plans and defense mechanisms. You are assigned three battleships named Nanami, Sora and Shangri-La. They each possess different but adorable personalities. They trust you and follow your command without any comments. While you are getting familiar with new environments, the danger is approaching this country....

## Hours of Gameplay

The hours of gameplay depends on the thinking time, the skill level, and familiarity of the game regulation. We utilize live2D models and inspiring music to keep things fresh. On the average, completing the entire round of the MistyOcean should be 15 minutes to 30 minutes.


## Victory Conditions

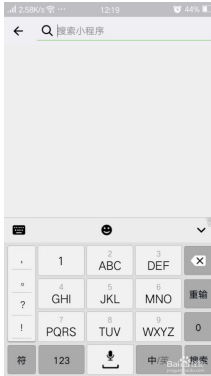
This game ends when only one captain ship is left on the ocean. The game ends when one player is deemed victorious. Your battleships survive together, and the battleships protect each other. Splitted fleets always lead to failure.

# Multiplayer Game

## Overview

The current MistyOcean does not support multiplayer. But we have practical plans and established techniques to implement multiplayer features. If the feature is incorporated into MistyOcean, only two users will attend in one game and the final winning condition will not change that they need to defeat opponents' captainship and find the location of the opponent's boat under the fog. Credit to the Wechat platform, players are able to invite friends to MistyOcean and play 1-to-1 games with them. The share button is added to the upper corner of the

phone screen  and the Qr code or link will be engendered once they select agree to share. Users could also search MistyOcean in the mini program store by typing in "MistyOcean"



Each player could choose three battleships from six battleships in total. The first player who confirms their fleets will be able to stop the battleship selection time and the other player will automatically lose their free right to choose and use the other three battleships that are not chosen by the first player. Players could also earn experience by defeating other players. They could earn 10 experience points for each round. 100 experience points are needed to level up and the maximum multiplayer level is 10.

## Max Players

We expect the game's backend database should include over 100 Gigabytes. (if exceeds 1000 people at the same time, the system will break down)

## Servers

Our game server is client-to-server, using HTTP and Websocket. Specifically, we are using Pywss Python library to connect backend logic and frontend wechat mini app user interface.

## Customization

To optimize the multiplayer experience, we will allow players to configure the outfit (chibi style) of battleships. Players will also be able to configure weather settings of the battleground.

## Internet, Saving and Loading

Once players enter the MistyOcean battleship game engine, players will be asked to agree to login to MistyOcean and allow the game to use their wechat username and gender information. This allows the auto-persistence to database possible.

## Persistence

The world of MistyOcean is persistent and the world data is not lost because we combine the data with the logged in wechat users. We will auto-persist users data into backend database and cache their data into current wechat mini-program browser

# Character Rendering

## Overview

In single player mode of MistyOcean, six Moe anthropomorphism battleships chibi versions will be generated and users could place them in the 5x5 game board provided. The game engine will engender movable chibi characters at the bottom of the portable phone screen. We are using the assets, chibi and illustrations, provided from the game of Azurlane. The privileges of controlling these characters will be reserved to users until the boats lose all life or the captain battleship is beat.

## Character Model

Live2D in MistyOcean is a feature that all battleships have. It requires 5-10 seconds to conduct an attack, and Live2D includes attack animations that stringently make the reference to the delay between the attack and when the attack is initiated. Our live2D models utilize the original chibi illustration directly, and allows MistyOcean to provide dynamic expression and directly enhance the charm of six characters. The live2D model helps to cultivate a strong bond between players and characters. In our future implementation of the weather system, characters will present with different outfits under distinct weather conditions.



Yuudachi is reticent and introverted. But she cares the most about the captain (player). The third chibi figure will be presented when the weather is set to sunny and snowy. According to her personality, the rendering system and face tracking system will adopt fewer mouth movements and more ear movement of leaning forward and backward.



Cyrus is a heavy cruiser and she is a mischievous and openness character. She would like to hymn modern popular music. She is childlike and comical. According to her personality, the rendering system and face tracking system will engender more mouth movements and more ear movement of leaning forward and backward. The difficulty of constructing Cyrus model also include implementing vivid body movements and eyebrow movements



Dutch is a tranquil lady with good manners and good taste. Dutch has a carefree spirit and seems unorthodox. The third chibi figure will be presented when the weather is set to sunny and snowy. Based on her personality, the rendering system and face tracking system will engender more mouth movements and more ear movement of leaning forward and backward. The difficulty of constructing Dutch model also includes implementing vivid body movements and eyebrow movements



Nanami is a smart, charismatic character. She is regarded as the best partner of the captain. She could easily get what the captain is thinking about and respond with a suitable reply. The most popular battleships in the fleets must be Nanami. To make the most of her inspiring characteristic, the rendering system and face tracking system will engender more mouth movements and more ear movement of leaning forward and backward. The difficulty of constructing Nanami models also incorporates vivid body movements and body breath and location adjustment.



Sora is energetic and optimistic. She is bold. She is always the origin of positive energy of her fleet. It seems she shares happiness only and never gets frustrated. According to her personality, the rendering system and face tracking system will engender more mouth movements and more ear movement of leaning forward and backward. The difficulty of constructing Sora models also includes implementing vivid eyebrow movements and breathe movements.



Shangri-La is an air-craft carrier. She is always the most caring in the teams. She cares about whether other battleships have enough resources and attack points. The second chibi figure will be set to snowy and stormy weather. According to her personality, the rendering system and face tracking system will engender more mouth movements and more ear movement of leaning forward and backward. The difficulty of constructing the Shangri-La model is similar to Sora's model, the only difference is that she is the only character who is wearing glasses.

# **World Editing**

## **Overview**

In the present version of MistyOcean, the world editor is not highly flexible and detailed. As mentioned above, the future implementation of MistyOcean will implement a weather system. Each weather (sunny, foggy, snowy and stormy) will cause adjustments to the game board mechanism. The background animation and music effects will reflect current weather conditions, with the intention that the player should be able to immerse into the game. To recover the glory of the country, the players must resist invasion from the enemy and get over various obstacles. The victory is harder to get especially in the snowy and stormy conditions. The road is getting tougher when the player proceeds to the latter part of stories and face new enemies.

## **The weather editor**

The weather editor allows users to edit the current weather conditions in the game and import their own Javascript code. The weather editor also supports combining different weather conditions into one game.

## **The terrain editor**

The terrain editor allows users to modify most attributes in the game. The current player field and enemy's field is 5x5 column. With the help of the tool, the map could be expanded to 10x10 as maximum. It also includes a mini-map feature to drag and toggle the current views on each map.

## **The AI editor**

The AI editor allows users to create custom AI scripts for computer players. In the practical MistyOcean game, the movements of AI are completely random and not intelligent enough and it is not designed to beat the players but designed to help the player to experience the game.

## **The battleship editor**

The battleship editor allows users to import custom live2D models and other battleships to the marine fleets. Users could modify the appearance of battleships and main page illustrations. They could edit their lines and customize their personalities.



# **Extra Miscellaneous Stuff**

## **Overview**

This game is supposed to be a multiple-player strategy game. However, due to a tight schedule and limited resources, our development focused on the basic game logic and AI. In the completion of Misty Ocean - Battleship, players should be able to play with friends, or random opponents assigned by the matchmaking. There will also be a single-player mode, where players will experience storylines and encounter puzzles. The current version of the game is a foundation, and it still requires a lot of work.

## **Single-Player Story Mode**

The single-player puzzles share the same game rules and goals. The player needs to locate and destroy the enemy's capital ship in order to complete the level. However, in those puzzles, players will encounter additional rules, limitations or special ability of enemies. The players often need some strategies to conquer those levels, and the levels will be hard as the storyline process.

For example, when the player's force is encountering a resource crisis, the fuel replenishment is lowered in the level, which enforces the player to do planning. Furthermore, at a certain level, the player might encounter an enemy that if it is wrecked (destroyed), the player loses the game automatically. In such a level, the player needs to choose targets more carefully.

## **Battle Royale Mode**

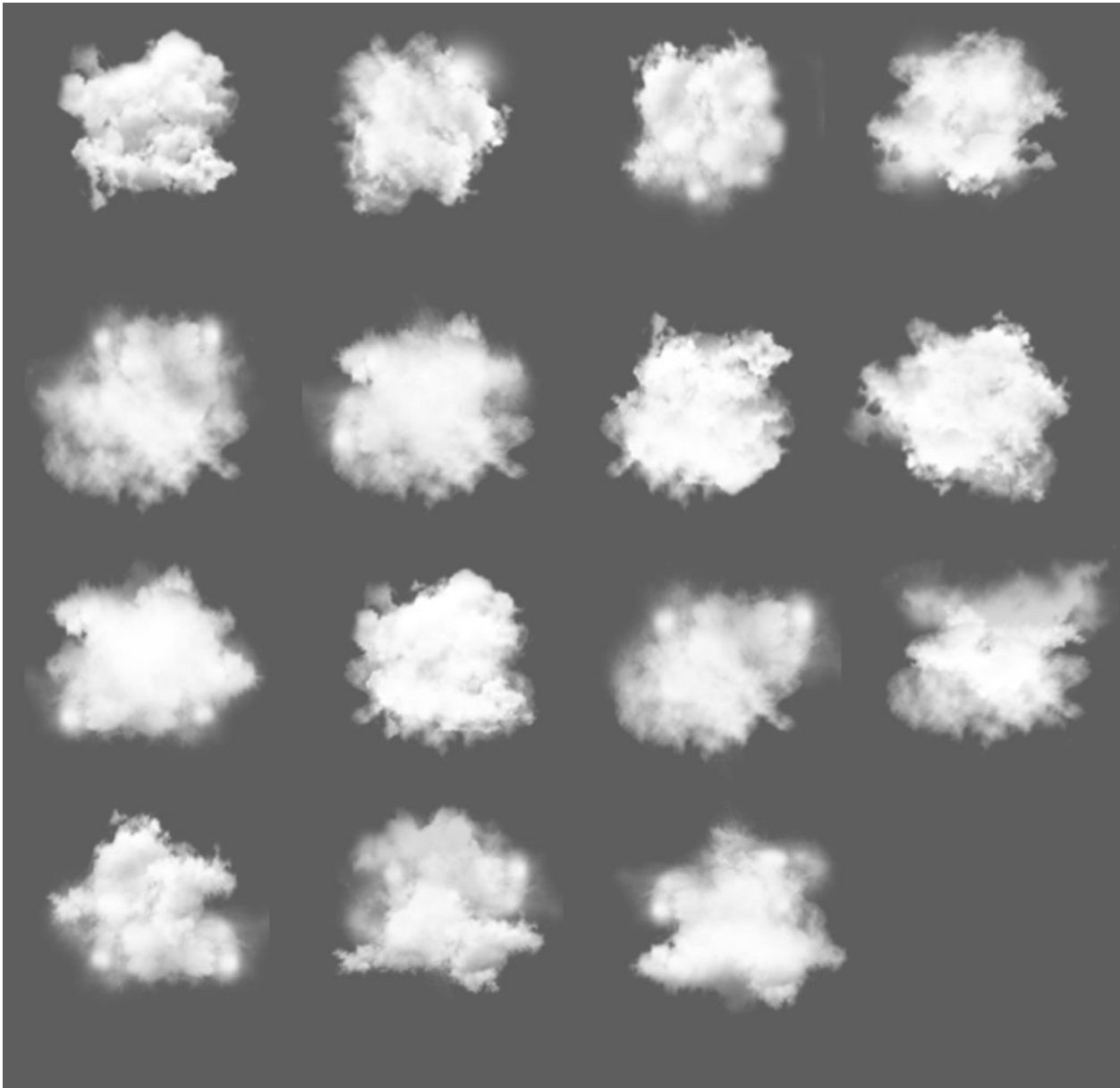
We discussed this idea at the beginning of the development. In this game mode, up to four players will spawn on the same large map (e.g 32x32), with fog of war also covering the whole map. As the game continues, part of the map will be filled with poisoned gas. Players will need to avoid those areas while hunting others. The last player surviving wins the game.

“Objects Appendix”

Artilleries appendix



Cloud appendix

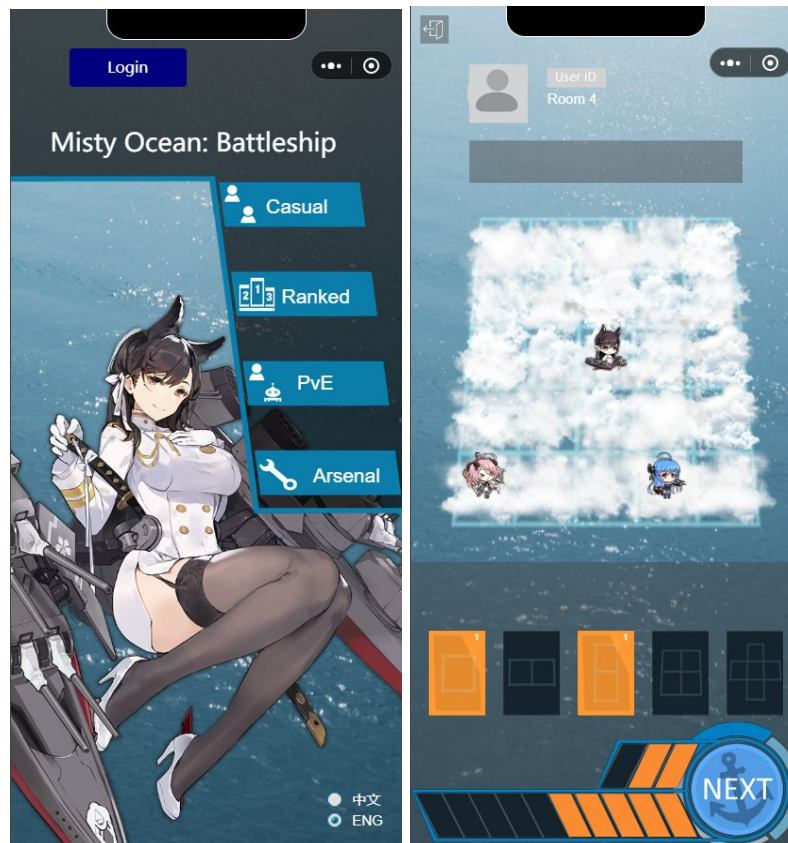


## Attack button appendix



Within this appendix contains the designs and assets that are utilized throughout the various stages. The cloud appendix is combined together to form a misty battlefield. The cloud pattern will be randomly generated and the cloud images are staggered to create a high concentration of fog and the battleships under the fog are hard to discern and the player has to attack to disperse the fog.

## “User Interface Appendix”




## “Character Rendering and Animation Appendix”





# “Website Appendix”

<https://caviar-yyqf.itch.io/mistyoceanbattleship>



Dashboard

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Analytics

Widget

Edit theme

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Add To Collection



## MistyOcean: Battleship

Weigh Anchor!

### Summary

MistyOcean Battleship started out as a turn-based strategy indie game in which players control the marine fleet and move them in grids on the map to play. What differentiates MistyOcean from other ship battle games is the design of mist that could cover the position of the players' ships. When attacking the opponent's ship, the player must take into account that the position of his/her ships are not found in the early stage and accumulate attack power to give the enemy a fatal blow.

### Story

When you gradually obtain your sober consciousness, you suddenly realize that the scene around you is not the familiar bed at home, but another bed. You start to feel strange and chat with an exotic girl who claims to be Nanami and tell you that you are summoned to this Isekai world by the ceremony held by the king of the country. King summons adventurers to resist the invasion of enemies. The priests in the country made a prophecy that you will be the one who could save their country and lead their country to a brilliant future. They have techniques to build battleships and artillery to enforce the attack and defense. The only resource they need is a true captain to make meticulous tactical attack plans and defense mechanisms. You are assigned three battleships named Nanami, Sora, and Shangri-La. They each possess different but adorable personalities. They trust you and follow your command without any comments. While you are getting familiar with new environments, the danger is approaching this country....


### How to play

The home page has two stages, a deployment stage, and a battle stage. The user

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Misty Ocean: Battleship

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Alpha Version - Not reflective of the final product

YouTube

Login

⋮

⌂


### Misty Ocean: Battleship

Casual

Ranked

PvE

Arsenal



中文  
ENG

⋮

⌂



## How to play

The home page has two stages, a deployment stage, and a battle stage. The user is prompted in the deployment stage when entering the game page to deploy the player's battleship. Upon deployment, the page enters the battle stage and will remain in this stage until the game finishes. Both stages have a 5x5 square grid, a grey information bar to display notification and hints, and the player's profile picture and id. In the deployment stage, you can drag the battleship into one of the 25 square tiles. Once all three battleships have been deployed, the game automatically starts and the interface changes to the battle stage.

In the battle stage, the interface consists of an integrated design of fuel bar + action button at the bottom, five artillery slots above it, and the 5x5 square representing the battlefield. A dark parallelogram indicates an empty fuel cell, and an orange parallelogram indicates a filled fuel cell. The fuel bar has two layers, the top layer represents the reserved fuel and the bottom layer represents current fuel. The five artillery slots have their own logo respectively. When the player possesses zero artillery of one type, the corresponding slot is dark, when the player possesses one or more of one type, the slot is orange, and a number on the top right will indicate the amount the player has.

## Weapons Details

There are five basic types of artillery:

### 1. Armor-piercing Cannon

A single target missile that costs 1 unit of fuel to equip, can be loaded within the same round, and deals 3 bonus damage if it hits an enemy. Once an enemy ship is exposed, it can be used to create a powerful shot, doing burst damage and taking down the target as quickly as possible.

### 2. Naval Gun I & 3. Naval Gun II

A wide-range weapon that can also attack the area next to the target. Both cost 2 units of fuel to equip, can be loaded within the same round, and deals 2 bonus damage if they hit an enemy. This weapon allows one ship to attack two fields at the same time while also dealing burst damage. It is designed that players should use it when tracing down an enemy after the enemy has retreated to the fog of war.

### 4. 200mm Rocket Launcher

Rapid-fire artillery that launches multiple rockets to strike a large area. It costs 3 units of fuel to equip, takes one round to load, and deals 1 bonus damage. This weapon attacks four fields at the same time, largely increases the chance of locating hostile ships. Its fire power is inferior in comparison, thus it is expected to be used primarily for finding enemy's units.

### 5. Ballistic Missile Launcher

A destructive missile carrying multiple warheads to strike a large area. It costs 3 units of fuel to equip, takes two rounds to load, and deals 2 bonus damage. This weapon is extremely powerful and is the most difficult to deploy. It is expected to be used primarily for finding enemy units.

## Who We Are

A-5 Entertainment is a small studio composed of 5 people. Coming from varied backgrounds we've started working together for MistyOcean, which unites our passions and convictions. We're located in different corners of the world.

## Download

Scan the Qr code on the right and you will be directed to the link to download WeChat and after opening the WeChat, you could enter MistyOcean.

*Disclaimer: This project is an assignment from UCI CS 113 Course. All art assets belong to their original copyright holders. This project is for educational purposes only.*

[More information](#) ▾

## Comments

Write your comment...

 [caxlar\\_vyaf](#) 2 hours ago (+5)

I really like Azurlane so I definitely will try this derivative game that could run on Wechat mini-game!

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 [caxlar\\_vyaf](#) 6 days ago

wohoo

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