



# Computer Games Development CW208

## GDD

### Year IV

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Game Overview .....	1
Feature Set .....	1
General Features .....	2
Gameplay .....	2
The Game World.....	3
Overview .....	3

The Physical World.....	3
Overview .....	3
Key Locations .....	3
Travel .....	3
Scale .....	3
Objects .....	3
Rendering System .....	4
Overview .....	4
Camera .....	4
Overview .....	4
Zooming .....	4
View Rendering .....	4
Game Engine.....	4
Overview .....	4
Game Class .....	4
Collision Detection .....	5
Game Characters .....	5
Overview .....	5
Enemies and Monsters .....	5
User Interface.....	5
Overview .....	5
Static User Interfaces .....	6
Interactable User Interfaces .....	6
Weapons.....	6
Overview .....	6
Overworld Weapons .....	6
Battle Weapons .....	7
Single-Player Game .....	7
Overview .....	7
Game Progression .....	7

Turn Based Battles .....	7
Story.....	7
Hours of Gameplay .....	8
Victory Conditions.....	8

## **Game Overview**

Pirates Gambit is a turn-based RPG with open world exploration elements. The game is centred around the player pirate whose goal is to explore the world, build up their army, create alliances and conquer the pirate world.

The Games key focus is around resource and army management, building alliances, and a tactical turn-based combat battle system for the player to challenge their skills.

## **Feature Set**

### ***General Features***

Procedurally Generated world.

Inventory Management with many items.

Army management with many Army units.

Alliance / Reputation system with enemy computer Pirates.

Turn Based Battle System.

### ***Gameplay***

Open world exploration.

Land & water exploration.

Inventory management.

Resource Collection.

Army Managment.

Turn based combat.

Dynamic Ocean combat.

Pirate Interactions.

Reputation / Alliance System.

Tactical management of resources.

## **The Game World**

### **Overview**

The world is set on a group of islands and the open oceans. There are a range of individual and unique islands across the games world that range from large too small. Islands are full of trees, buildings and chests depending on the size of the island. The oceans are vast and can only be sailed upon by a ship.

### **World Chunks**

The world is divided into individual chunks for islands to be created more uniquely from each other. The overall world is split into a 2d top-down tile map but made up of square chunks that connect to each other. This is done so that the world can be constructed like a puzzle piece by piece to create a more immersive and customizable world.

### **Procedural Generation**

Each island is procedurally generated each time the game is launched. The islands will be uniquely shaped, sized and no island will be the same. There will be many small islands populated with few barrels and trees and then other larger islands with will be populated with more barrels and trees, along with buildings where pirates may be recruited. This is done so that the world feels more dynamic and different every time the game is played.

## ***The Physical World***

### **Overview**

The world is split up into islands with oceans separating them. These islands can be explored, and the ocean are able to be sailed across.

### **Key Locations**

Many individual Islands.

### **Travel**

The player may move their character on foot while on the islands, then the player may chose to set sail on the ocean, so they would have to traverse the seas on their personal boat.

### **Scale**

The world is split into chunks that are 5x5, this number can be increased (7x7, 10x10), making the world as large as desired.

### **Objects**

Trees: Gives ambiance to the game, make the islands feel more animated, strictly for decoration.

Barrels: Used as loot chests across the game. They spawn on Islands and have items inside of them such as gold, cannon balls etc.

Buildings: These spawn on larger islands. They can give the player an increase to their army in exchange for gold. They have a cool down period before selling more units to the player.

## **Rendering System**

### ***Overview***

The game is rendered using SFML with individual sprites for each object in the game. They are layered on top of each other to create a top-down feels and give a slight 3d effect with the layering.

### ***Camera***

#### ***Overview***

The camera is always focused in on specifically the player. It will follow the player around for the player to not get confused as to where they are.

#### ***Zooming***

The Camera will be able to be zoomed in/out from the players current position in order for them to see the broader world or focus in on themselves for gameplay.

#### ***View Rendering***

Only objects inside of the camera view will be visible/rendered allowing for a smoother player experience.

## **Game Engine**

### ***Overview***

The game is created entirely using an SFML game loop at 60 fps and the sfml rendering library to draw the sprites. All subsystems are custom made.

### ***Game Class***

The game class oversees everything in the game, such as switching in between scenes, knowing when to pause the game, managing all aspects of gameplay and exiting the game.

### ***Collision Detection***

Collision detection is done by using AABB collision detection as well as bounding boxes that are added to the player/enemy pirates. Collision detection is key in elements of the game such as staying on an island, not being able to sail onto an island while on a boat, detecting when to go into battle mode as well as detection as to when the player is interacting with the enemies and or the many game objects in the world such as buildings, barrels and trees.

## **Game Characters**

### ***Overview***

You play as an ambitious sole pirate who's goal it is to become the strongest pirate in all the seven seas.

### ***Enemies and Monsters***

The enemies in the game are other pirates, part of their own already existing clans. These enemies can be distinguished by the color of their sails on their ship. Each enemy and the player are in control of their own personal crew on pirates that are there to fight for their captain. Each unit is distinguishable from the other and offer different stats and uses to the player/ enemy. These units include:

Buccaneer: A simple sword wielding pirate.

Gunner: A simple musket wielding pirate.

Bird: A fast bird holding a cutlass.

Cannon: A powerful cannon on wheels.

Harpooner: A beefier, harpoon wielding pirate.

## **User Interface**

## ***Overview***

There are many individual User interfaces across the game, but each remain in theme with each other. Many of them are strictly for viewing information such as the players army/Inventory while others are interactable with buttons and slider.

### ***Static User Interfaces***

Player Inventory View: This view allows the player to view what their army is currently looking like as well as any items they have collected on their adventure.

Battle Initiative UI: This UI is seen in the battle scene which allows the player to distinguish which units turn it is in the battle system. This updates after every turn.

Scouting UI: A pop-up UI when hovering over an enemy that allows you to scout the army of a nearby pirate.

Unit Information: The ability to see unit stats when clicked on, so you can see how strong a unit is.

### ***Interactable User Interfaces***

Building UI: Displays which unit a building is selling, gives the ability to buy the unit and displays the cost of the amount.

Barrel Inventories: Displays the contents found inside the barrels of the game. Each item can be clicked on to be put into the player's inventory.

Pirate Dialogue: Dialogue with enemy / ally pirates that can be opened where the player may choose to hire the services on a different pirate for help.

Battle System: a battle system where you can move across a set battle grid, with the ability to place your units, move them, or use the action buttons to wait or skip a units turn.

Main Menu: A main menu screen that allows you to create a new game.

Loading Screen: A screen that shows the player that the game is loading and has the ability to load into the gameplay when the loading is completed.

Pause Screen: A screen that can pause the game during gameplay, incase the player needs to quickly leave and close the game, or need to do something for a few minutes.

## **Weapons**

### ***Overview***

While there are no weapons the player can wield themselves, the units are split up into ranged and melee units that use different weapons. The ship also can fire cannon balls while moving through the water so they can shoot at enemy pirate ships.

### ***Overworld Weapons***

Cannon Balls: The player may press the space bar to fire a cannon ball from their ship, in hopes of connecting with an enemy ship and lowering their army. Each cannon ball hit reduces the enemy's army by a percentage.

### ***Battle Weapons***

Each unit is split into a melee or ranged class. The ranged units like the Cannon, gunner or harpooner can shoot at a range. Each unit has a range penalty if the enemy unit is too far away, if the unit moves closer that range penalty is eliminated and they do more damage.

The melee units are required to move close to the unit they are attacking and then attack inside of their range on one square.

## **Single-Player Game**

### ***Overview***

The player is spawned into the world with a limited amount of money and a small army, that they can use to try and defeat other enemy pirates. It is the player's goal to tactically avoid deadly pirates, collect and increase their gold amount so they can increase their army, and then defeat every other pirate in the game so that they can be the strongest pirate of them all.

### ***Game Progression***

The player must explore the islands in their vicinity so they can collect more gold. With more gold they can then visit the buildings that they have discovered so they can grow their army. With more gold comes a better army and a better chance at defeating enemy pirates.

### ***Turn Based Battles***

With the army that the player has amassed, they must face a tactical battle against other pirates where each unit only has one move in their turn. They must intelligently move their units in a way where they minimize their losses and defeat the enemy pirates while preserving their armies so that they may gain a massive gold increase.



## ***Story***

Your goal is to rule the seven seas. You have finally amassed enough money to purchase a ship and a crew, but there are other pirates out there with years of experience and much more wealth than you have ever seen. But that doesn't stop you. With your dreams in mind, it is up to you to discover the many islands that have surrounded you, to grow your army from a few pirates to an entire army! To grow your alliances with other pirates or to double cross them in the because there is only so much treasure across the entire world. You will be the strongest pirate no matter what it takes.

## ***Hours of Gameplay***

The singleplayer experience lasts if the player takes to defeat the enemies. The player can choose to play a longer game where they evade pirates, while building up their armies and then Reak havoc on the world, or they can aim to take out weaker pirates, gain more gold and grow their armies faster. They may even recruit pirates to make battles easier.

## ***Victory Conditions***

The player may win the game as soon as all the other pirates are defeated. If the player is to lose combat and their army falls with no units remaining. They must restart from scratch with a new set of islands and replay the game.