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Introduction

Brief Description

Sea Scoundrels is a top-down rogue-like adventure game that immerses players in the role of a pirate engaged in ship raids to collect items and recruit crew members. The term '*top-down*' refers to the game's perspective, offering an overhead view for a comprehensive outlook on the level, surroundings, and potential enemies.

The '*rogue-like*' aspect implies a turn-based nature, where the game responds only to the player's actions, allowing for strategic evaluations in challenging situations. This approach permits players to navigate difficult scenarios, such as facing multiple enemies, at their own pace, facilitating optimal decision-making.

The inclusion of the '*adventure*' element introduces a narrative-driven focus to the game. Players embark on a thrilling journey as they raid pirate ships, gather valuable items, and enlist crew members. Periodic visits to Pirate Island provide opportunities to upgrade the ship, enhance the crew, and acquire new weapons, contributing to the overall progression of the pirate odyssey.

Conceptualizations

The core concept behind the game will involve:

- An upgrade system: where the player can enhance and customize their pirate ship, crew, and equipment. On Pirate Island, players can spend their collected loot to improve various aspects of their gameplay. This might include upgrading the ship's hold for increased inventory space, enhancing player speed, or investing in more powerful weapons. The upgrade system adds a strategic layer to the game, allowing players to tailor their playstyle and adapt to different challenges.
- Multiple weapons, equippable items/cosmetics: the game will feature a diverse arsenal of weapons to cater to various playstyles. Players can choose from both melee and ranged weapons, offering flexibility in combat scenarios. Melee weapons will include a dagger and a sword for up-close engagements, while ranged options will include a pistol, a bow and a musket for range combat. Additionally, the game includes equip able items and cosmetics to further personalize the pirate's appearance and enhance their abilities. These items could range from utility-focused gadgets to purely aesthetic accessories, allowing players to express their unique style while optimizing their effectiveness in raids.
- An Artificial Intelligence (AI) crewmember/enemy feature: In the context of "Sea Scoundrels" or other video games, the term "AI" often refers to the implementation of computer-controlled characters or entities, such as enemies or the player's crewmembers. These AI entities are programmed with specific behaviors, decision-making processes, and responses to create dynamic and challenging interactions within the game world. The goal is to provide a more immersive and responsive gaming experience by simulating intelligent behavior in non-player characters.

Motivations

Analyzing successful game concepts such as The Binding of Isaac, Sea of Thieves, and the current fad involved with pirates in the media through shows like One Piece, we believe that this game will be popular with many demographics.

- The binding of Issac is a game where the Player navigates through procedurally generated levels, facing enemies and bosses. The game is known for its challenging and unpredictable nature.



Binding of Isaac gameplay screenshot

Acquired from <https://www.trueachievements.com/game/The-Binding-of-Isaac-Rebirth/screenshots>

- Sea of Thieves is a game where the player becomes a pirate exploring a vast sea, engaging in naval battles, discovering islands, and searching for treasure. Cooperative gameplay is central, with crews operating ships and encountering other players on the high seas.



Sea of Thieves gameplay screenshot

Acquired from <https://news.xbox.com/en-us/2018/03/16/sea-of-thieves-controls-feature-xbox-one-windows-10/>

- One Piece is an animated series where the story follows Monkey D. Luffy and his diverse crew as they search for the ultimate treasure, the One Piece, in a world filled with pirates, mythical creatures, and powerful enemies. The show combines intense battles, intricate world-building, and a deep exploration of friendship and dreams. The show's popularity stems from its rich storytelling and diverse cast of characters.



One Piece anime screenshot

Acquired from <https://collider.com/one-piece-manga-anime-explainer/>

Player Experience

The unique features that will separate this game from other titles in the past is the layers of customizability with the characters and the crewmember AI system. You can customize the characters you control by choosing various options of hats and masks for their head, and different wearable items such as cape and armor for their body. Each customization option comes with multiple effects, which can be either positive or negative when equipped. Each member that joins your crew can be fully customized by the player. The crewmember AI system will have a toggle feature so that you can switch between unlockable crew members, and the unlockable crew members will have a uniquely autonomous AI attack system for targeting different enemies. Having more members in your crew will provide convenience for clearing levels and add a new degree of excitement to the gameplay. The game structure consists of 10 levels, containing 7 bosses and 3 puzzle-based level designs. The levels will all contain multiple smaller enemies as obstacles for the player along the way.

Findings

Scope

For the scaling of this project, the Unity Game engine is going to be used with a 2D environment. The game engine provides several of the necessary features that we will require including a useful physics engine that provides functionality such as character movement, collision with the game objects and other characters, obstacle detection, bullets acceleration, force (gravity) applied to the different game objects and characters, and pathfinding to help the nonplayer characters find their move around in the game world. There is also the useful prefab feature, audio control, and scene control. To explain more:

- Prefab feature (short for prefabricated) is a reusable, predefined object or group of objects that you can create, configure, and then use as a template throughout your game.
- audio control which refers to the management and manipulation of audio elements within a game or application. Unity provides a comprehensive set of tools and features for handling audio, allowing developers to incorporate sound effects, music, and other audio elements to enhance the overall gaming experience.
- scene control which refers to the management and manipulation of scenes within a game or application. A scene in Unity represents a specific environment or level that can contain various game objects, assets, and configurations. Scene control involves tasks such as loading, unloading, transitioning between scenes, and organizing the content within them.

Technology Involved

- The built-in physics engine will be incredibly helpful for handling items such as weapons (ranged projectiles and melee swiping), movement of characters, AI pathfinding, wall collisions, etc.
- Unity also offers the prefab feature which will be fundamental for reusable assets and character toggling.
- There is also scene control which will be especially helpful for toggling between scenes such as the main menu, different levels, Pirate Island, etc.
- There is also an audio controller that is useful for audio management of each asset and their correct play periods during run time.

Project Constraints

Some areas that will be a challenge when creating the game are the AI system designed for crew members or enemies. When designing this system, we will need to consider obstacle collisions such as walls and objects, the pathfinding method to traverse through the level designs that we create, and the way that the AIs interact with each other through attacking / following the player. There are also several different attack methods that enemies can use; it would be impractical if all enemies had the same attack pattern. Some different attack patterns we may consider are directly following the enemy, moving slowly then charging the enemy, attacking from a distance with a ranged weapon, bouncing off walls, spawning mini enemies, etc. As for level design, we need to consider rooms that make sense for the player and don't cause clipping issues with the enemies or player, a clipping issue refers to a problem that occurs when a portion of a graphical object or scene is not correctly displayed or rendered on the screen. Clipping issues can lead to visual artifacts, distortion, or elements disappearing. One other major concern is assuring that we fairly balance the properties of our weapons/items to make sure the levels do not become too easy or too hard.

Alternative Solutions

Other possible game engines that we could use to build this game are Unreal Engine, Godot Game Engine (which also uses a thorough physics library), and GameMaker.

Ideally, if we are aiming for phenomenal graphics, it would be more ideal to use Unreal Engine but as we are creating a top-down 2-dimensional world it is impractical. Also, the Unreal engine and the Godot Game engine are more encouraged for games that use 3D environments as opposed to 2D environments. Lastly, the GameMaker engine is the choice for developers that are creating RPGs which is not the theme nor core mechanics for our game design.

	Pros	Cons
Unity	<ul style="list-style-type: none"> - Versatile; supports 2D and 3D development. - Powerful graphics capabilities. - Large and active community. - Extensive documentation and tutorials. - Wide platform support. 	<ul style="list-style-type: none"> - Pro features require subscription. - Networking capabilities may be complex. - Large file sizes for some platforms. - Steeper learning curve. - May be overwhelming for beginners.
Gamemaker	<ul style="list-style-type: none"> - User-friendly; great for beginners - Simplicity and ease of use. - Active community and support. - Good for 2D game development. - Affordable pricing options. 	<ul style="list-style-type: none"> - Limited 3D graphics capabilities. - Smaller marketplace. - Collaboration features are limited. - Limited platform support.
Unreal Engine	<ul style="list-style-type: none"> - Powerful graphics capabilities. - High-fidelity graphics and rendering. - Comprehensive built-in features. - Blueprint visual scripting system. * - Robust built-in physics and AI systems. 	<ul style="list-style-type: none"> - Steeper learning curve for beginners. - Larger file sizes for some platforms. - May require more powerful hardware. - More complex project setup.
Godot Engine	<ul style="list-style-type: none"> - Open-source and free. - Lightweight and efficient. - Node-based visual scripting. ** - Flexible licensing options. - Rapid development and iteration. 	<ul style="list-style-type: none"> - Smaller community compared to Unity. - Less extensive documentation. - Less third-party assets compared to Unity.

* Unlike traditional programming languages, which rely on text-based coding, Blueprint uses a visual scripting approach to design game logic and functionality

** Node-based visual scripting is an approach to programming where developers design and implement functionality using a graphical interface, typically composed of nodes and connectors. In this context Nodes represent discrete units of functionality or operations. Each node typically corresponds to a specific action, condition, or function.

Feasibility Analysis

Technical Feasibility

The Unity Game Engine has a free version available for developers and a very responsive/accessible community when trying to debug issues. The Unity company also has a Unity Version Control software (previously Plastic SCM) which is free or chargeable but will be useful for keeping track of updates to our game and the dates that they were completed by. Unity Version Control is a video game design friendly version of GitHub and will be quintessential for the development of our project.

Unity is the best choice because it uses libraries that we are familiar with and the C# programming language which we are also familiar with. For the scope of this project, it is the most realistic game engine choice to achieve what we want in the fastest amount of time. This is because it is a beginner friendly game engine that also has a plethora of assets available in its Asset Store. Also, Unity is cross compatible, the game that we create can be configurable with Mac, Linux, Windows, Android, and HTML5 if using WebGL.

Economic Feasibility

The projected budget (represented using Canadian dollars) for the video game will be \$100.00 CAD. This budget will include all of the necessary assets such as level designs, cosmetic designs, weapon designs, UI designs, and boss designs. The assets for audio will be acquired on royalty free sound banks. All the software used in this video game is free of charge (Unity & Unity Version Control). The allocation of expenses is prioritized for characters because we need a lot of animations and unique character designs, of which we will spend \$50.00 CAD. The background/UI and items will make up the other \$50.00 CAD of our total expenses.

<u>Items Needed</u>	<u>Cost</u>
Character Assets	\$50.00 CAD
Background/UI Assets	\$30.00 CAD
Item Assets	\$20.00 CAD
Total	\$100.00 CAD

Schedule Feasibility

When designing our Gantt Chart and Work Breakdown Structure, we feel confident that we will have enough time to finish all functionality that we plan to implement into this game. To explain further, the first 4 weeks of development will involve implementing the core mechanics of the game in terms of movement and character/level design. More time is given towards the boss system for the 10 levels, which will have custom fight animations and attack methods as well as a much larger health bar to indicate progress.

Another 2 - 3 weeks was given towards the crew member's AI system, which will be the largest obstacle to climb. Lastly, the menu system and audio inputs will be included for the final 2 weeks of the project before testing. We give ourselves a reasonable time period to finish every part while allocating more time towards areas that we believe will be more complicated.

Recommendations

To ensure the security of completing this project, we will need to use the most stable version of Unity & Unity Version Control, collect all the necessary assets that will be used for our characters, levels, items, and audio clips. Also, we need to plan out sophisticated systems for all our features that put into account the best data structures and methods. Ultimately, after analyzing our technical issues, monetary issues, and schedule feasibility it is reasonable to conclude that we will be able to complete the project by the projected date of launch.

Market Research

Before designing the game, we wanted to collect data from anonymous video game players regarding some questions about gameplay mechanics and features. We created a survey using SurveyMonkey and a total of 25 individuals from our circle of friends, family, and classmates participated in this survey which contained 10 questions.

Here are the questions and the data collected from the answers:

1. What is your age?

We felt this question was necessary to compare age groups with what was popular amongst them in order to appeal to as many people as possible. The age groups that we chose were people who realistically would play a game of this magnitude. Survey responses were within the age groups of...

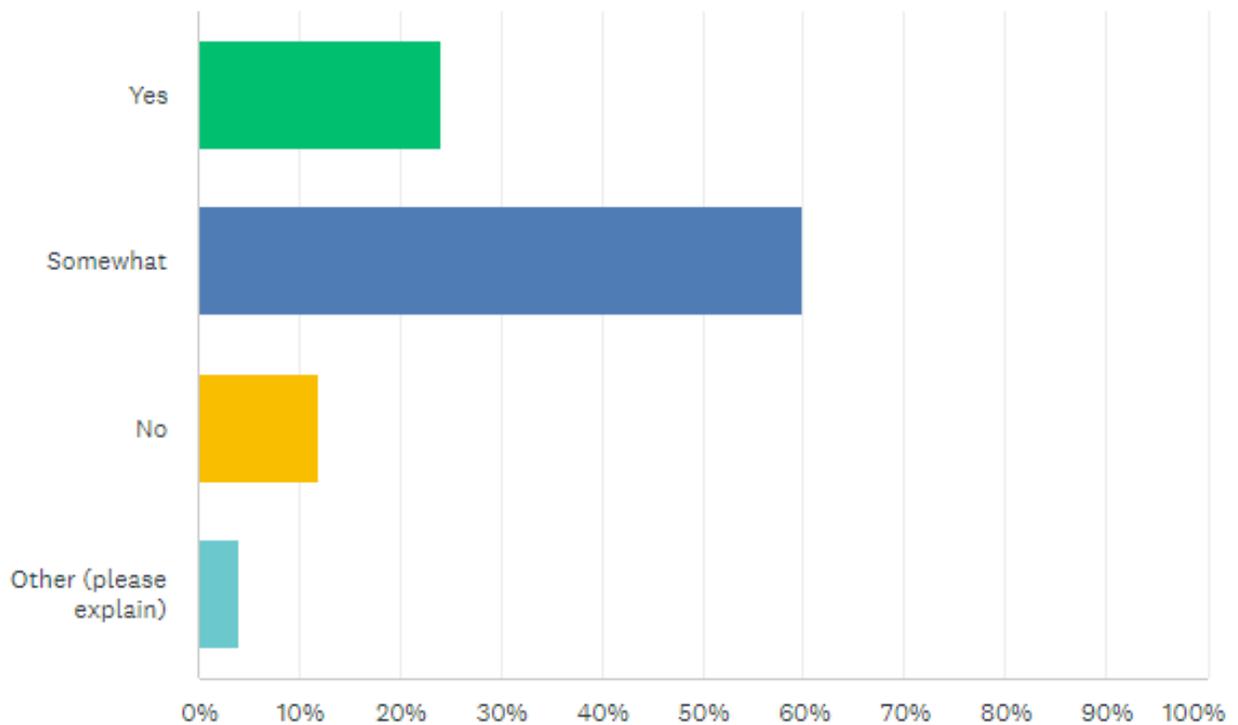
ANSWER CHOICES	RESPONSES
16 - 24	72.00% 18
25 - 30	24.00% 6
31 - 40	4.00% 1
TOTAL	25

2. What is your gender?

We wanted to collect this data to know which genders would be more interested in the gameplay and what kind of mechanics each gender is more interested in. The reason we would like this data is so we can appeal to as many gender-specific groups as possible and reach a larger demographic. The results were almost even with...

ANSWER CHOICES	RESPONSES
Male	52.00% 13
Female	48.00% 12
Other	0.00% 0
TOTAL	25

3. Do you believe that pirates are a popular part of culture currently?

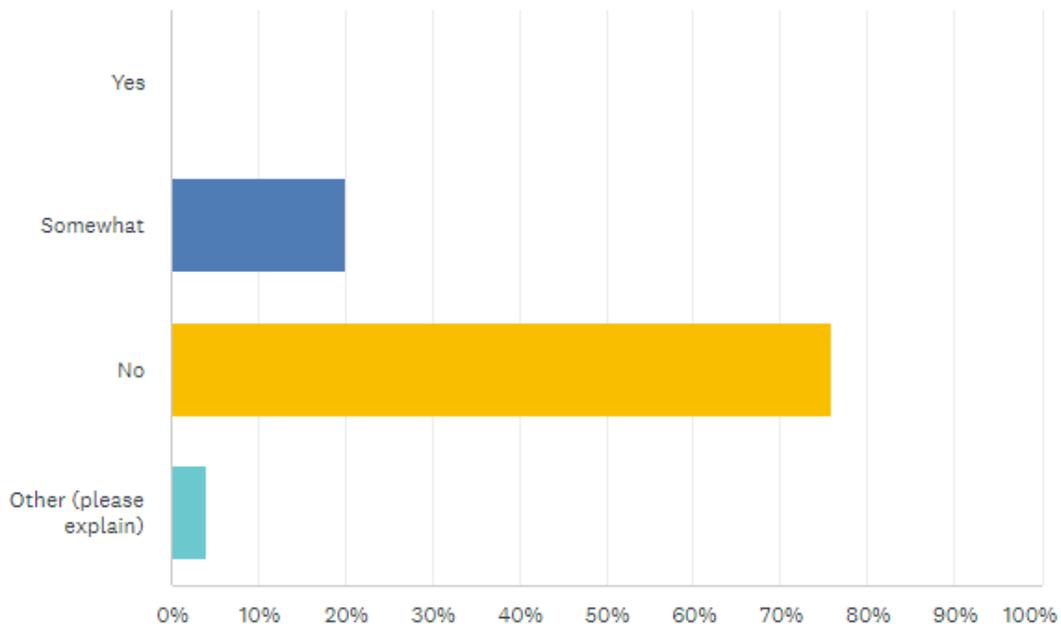


This question also included an “Other” category for people to express an opinion more thoroughly. We received 1 response for the “Other” category, which was...

“There have been significant shows and movies that have reintroduced people to the pirate era.”

We were very excited with this response because we had a feeling that pirates are hot in culture right now, especially with the rise of video games like “Sea Of Thieves” and the live action version of the popular anime “One Piece”.

4. Do you think the concept of pirates in video games has been overdone?

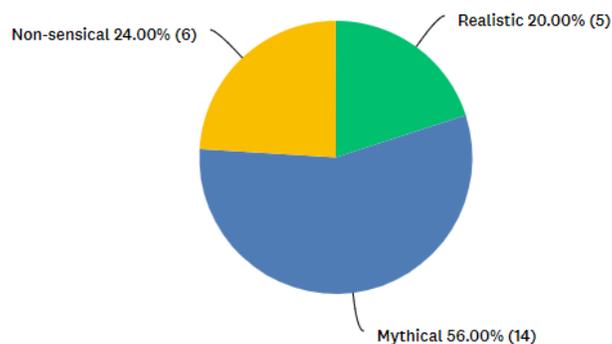


Within this data, 76% of respondents said “No” while 20% said “Somewhat”. The “Other” category was given by 1 user, who said...

“I don’t think there is a surplus of pirate video games out there, but I could be wrong.”

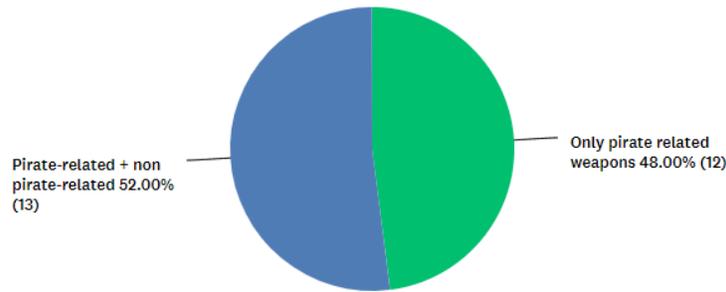
Using this data, most respondents (80%) agree that pirates in video games is not an overdone concept, which is relieving to know and can be used as a safe threshold to pursue a pirate video game.

5. For a video game, would you prefer a more realistic depiction of pirate life, a mythical approach, or a non-sensical/random interpretation of pirates?



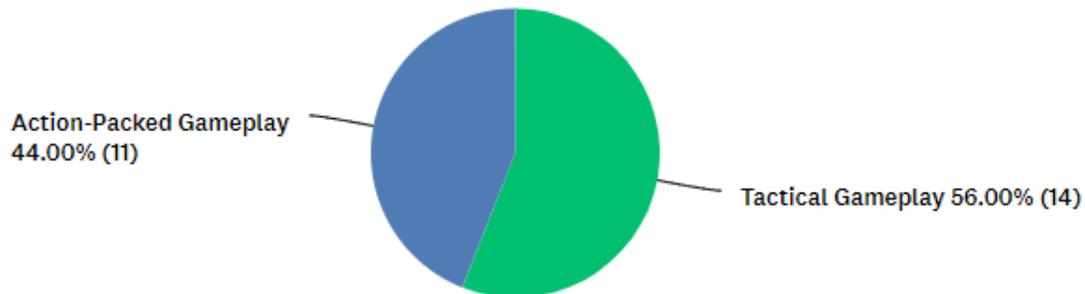
56% of respondents said that including mythical elements to a pirate game would be preferred, while 24% said non-sensical, and 20% said they preferred realistic pirate elements. This data was the most interesting because our team was expecting realistic to be the most requested. Knowing that we can implement mythical and non-sensical/unrelated content into the game eases our ability to collect assets and create our story.

6. What type of weapons do you expect to use for a pirate game?



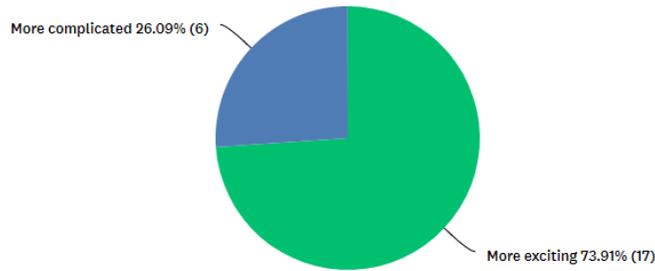
48% of respondents said only pirate related weapons were necessary, while 52% said that pirate-related and non-pirate related weapons are okay as well. We were also surprised with this response data, but it generally follows the same theme that players are okay with generic pirate concepts or a degree of fun as well. Both questions reinforced our stylistic design choices for creating our game and gives us a new creative degree of freedom.

7. Are you more inclined towards strategic and tactical gameplay, such as planning raids and managing resources, or action-packed sequences like ship-to-ship combat?



When asking this question, the census was divided on the best gameplay mechanics but there was a slight majority towards tactical gameplay. Knowing this information, we know that implementing puzzle-like systems, or any other sophisticated elements towards our game is encouraged alongside the action-packed gameplay we intend to infuse.

8. Do you think the concept of managing a pirate crew would be more exciting or more complicated?



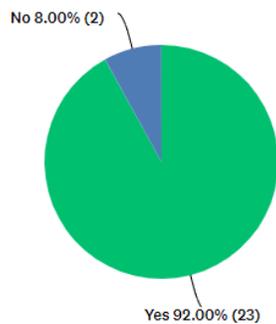
When this question was asked, about 3/4^{ths} of respondents said that managing a pirate crew seems like a more exciting feature, while 1/4th said it seems more complicated. We also left an area for respondents to give extra feedback on their decisions. We received 2 responses for this question.

“Depends on how difficult it is to mechanically manage them. In other words, how difficult it will make the game. It can absolutely be a fun addition if it doesn’t make the game ridiculously difficult.”

“Depends, I think both and that’s part of the challenge/game.”

From the responses we received, we know that we will need to put great consideration into a crewmember control system that is not too complicated for a single player to use.

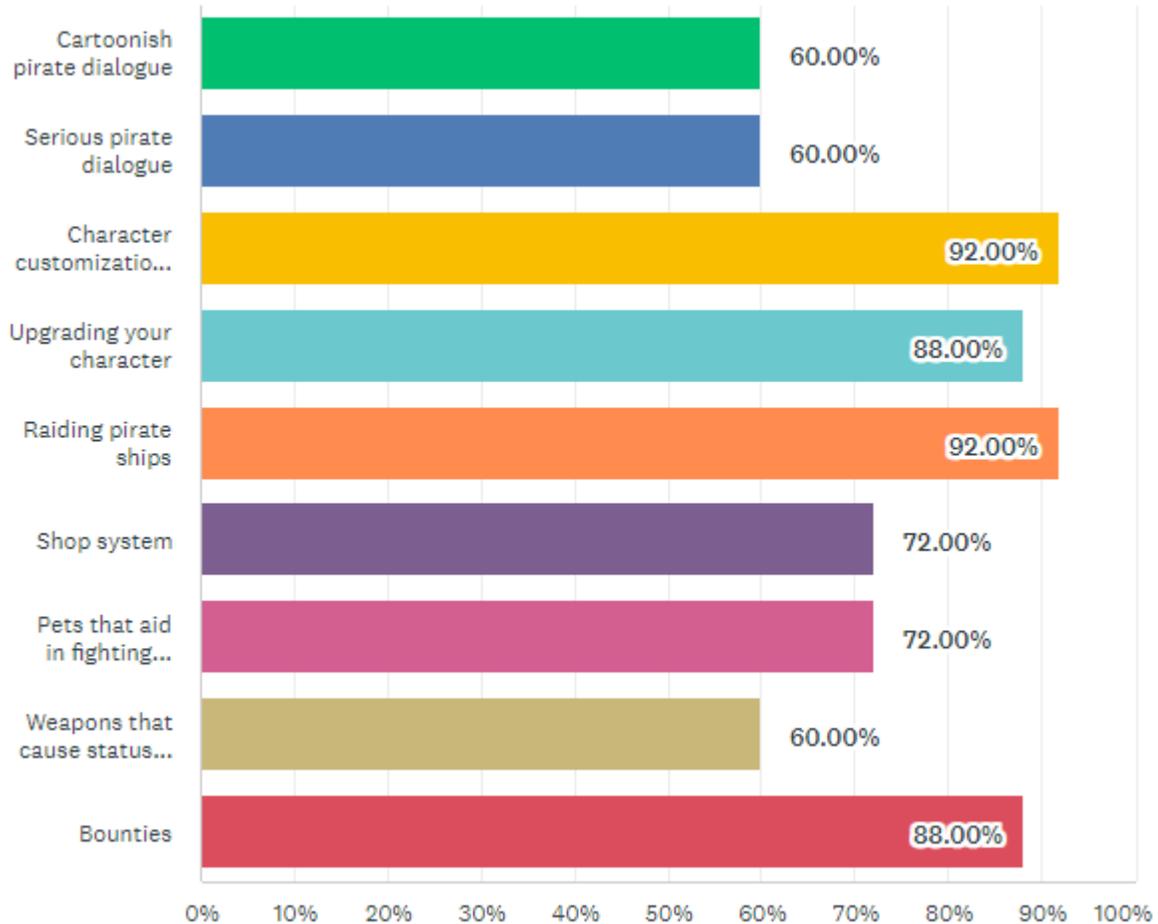
9. Are you interested in solving some brain teasers to obtain special items?



The overwhelming majority of respondents really like the concept of solving brain teasers to achieve rewards. In relation to Question 7, it appears that many users like the idea of an intellectual challenge when playing a pirate game.

10. What type of mechanics would you expect for a pirate game?

When asking this question, we knew that the majority of users would select a majority of the answers, but we wanted to specifically analyze which responses were overwhelmingly in demand. Ranking this data can help us prioritize features accordingly.

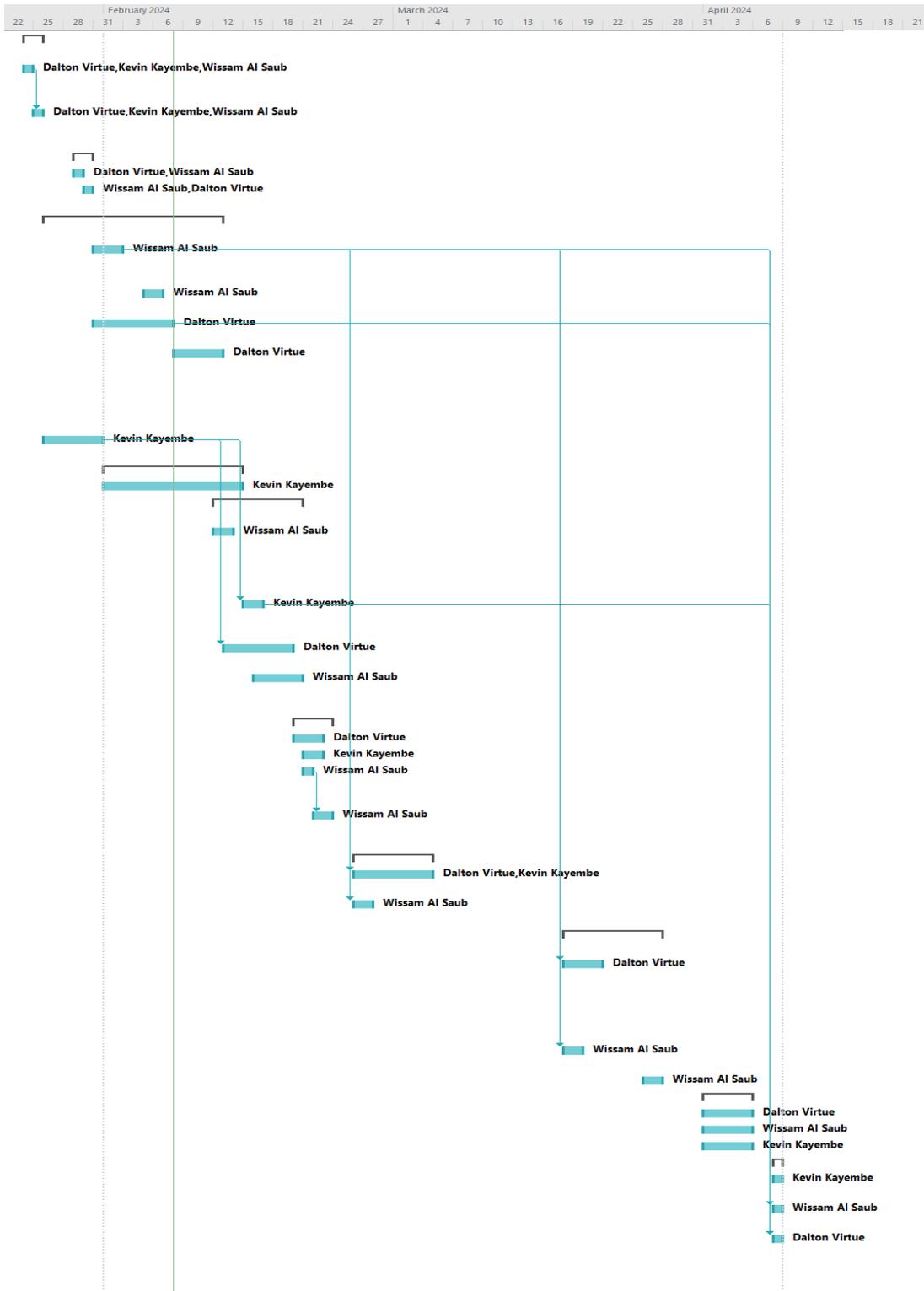


When ranking the features from most popular to least popular, we get...

<u>Feature</u>	<u>Percentage</u>	<u>Rank</u>
Character Customization	92%	1
Raiding pirate ships	92%	1
Bounties	88%	2
Upgrading your character	88%	2
Shop System	72%	3
Pets that aid in fighting	72%	3
Cartoonish pirate dialogue	60%	4
Serious pirate dialogue	60%	4
Weapons that cause status effects	60%	4

Supporting Documents

Gantt Chart



Work Breakdown Structure

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	📌	📌 Create the Feasibility Project	2 days	Wed 1/24/24	Thu 1/25/24		
2	🚀	Create the Feasibility document	1 day	Wed 1/24/24	Wed 1/24/24		Dalton Virtue, Kevin Kayembe, Wissam Al Saub
3	🚀	Create the Feasibility presentation	1 day	Thu 1/25/24	Thu 1/25/24	2	Dalton Virtue, Kevin Kayembe, Wissam Al Saub
4	📌	📌 Build the Project	2 days	Mon 1/29/24	Tue 1/30/24		
5	🚀	Finding assets	1 day	Mon 1/29/24	Mon 1/29/24		Dalton Virtue, Wissam Al Saub
6	🚀	Creating Test Environment	1 day	Tue 1/30/24	Tue 1/30/24		Wissam Al Saub, Dalton Virtue
7	📌	📌 Implementing Physics System	12 days	Fri 1/26/24	Mon 2/12/24		
8	🚀	Character Movement + animations	3 days	Wed 1/31/24	Fri 2/2/24		Wissam Al Saub
9	🚀	Wall Detections	2 days	Mon 2/5/24	Tue 2/6/24		Wissam Al Saub
10	🚀	Enemy AI system	6 days	Wed 1/31/24	Wed 2/7/24		Dalton Virtue
11	🚀	Attack System (for playable characters + enemies) + droppable items	3 days	Thu 2/8/24	Mon 2/12/24		Dalton Virtue
12	🚀	Inventory System	4 days	Fri 1/26/24	Wed 1/31/24		Kevin Kayembe
13	📌	📌 Level Design	10 days	Thu 2/1/24	Wed 2/14/24		
14	🚀	Creating 10 Levels	10 days	Thu 2/1/24	Wed 2/14/24		Kevin Kayembe
15	📌	📌 Character/Weapon Design	7 days	Mon 2/12/24	Tue 2/20/24		
16	🚀	Equip system for Head/Body/Feet (separate Inventory system)	2 days	Mon 2/12/24	Tue 2/13/24		Wissam Al Saub
17	🚀	Defining properties for Weapons/Cosmet	2 days	Thu 2/15/24	Fri 2/16/24	12	Kevin Kayembe
18	🚀	Special Effect Weapons	5 days	Tue 2/13/24	Mon 2/19/24	12	Dalton Virtue
19	🚀	Define & Create Droppable Items	3 days	Fri 2/16/24	Tue 2/20/24		Wissam Al Saub
20	📌	📌 Pirate Island	4 days	Tue 2/20/24	Fri 2/23/24		
21	🚀	Custom Shop	3 days	Tue 2/20/24	Thu 2/22/24		Dalton Virtue
22	🚀	NPC dialogue	2 days	Wed 2/21/24	Thu 2/22/24		Kevin Kayembe
23	🚀	Upgrade System (Pirate Ship)	1 day	Wed 2/21/24	Wed 2/21/24		Wissam Al Saub
24	🚀	Safe Inventory for Upgrade System	2 days	Thu 2/22/24	Fri 2/23/24	23	Wissam Al Saub
25	📌	📌 Boss system	6 days	Mon 2/26/24	Mon 3/4/24		
26	🚀	Custom attack patterns	6 days	Mon 2/26/24	Mon 3/4/24	8	Dalton Virtue, Kevin Kayembe
27	🚀	Health Bar Overlay	2 days	Mon 2/26/24	Tue 2/27/24	8	Wissam Al Saub
28	📌	📌 Crewmember AI System	8 days	Mon 3/18/24	Wed 3/27/24		
29	🚀	Follow The Leader function / Toggling between Crewmembers	4 days	Mon 3/18/24	Thu 3/21/24	8	Dalton Virtue
30	🚀	Agro Mode (Attack)	2 days	Mon 3/18/24	Tue 3/19/24	8	Wissam Al Saub
31	🚀	Revival System	2 days	Tue 3/26/24	Wed 3/27/24		Wissam Al Saub
32	📌	📌 Menu System	5 days	Mon 4/1/24	Fri 4/5/24		
33	🚀	Intro Card	5 days	Mon 4/1/24	Fri 4/5/24		Dalton Virtue
34	🚀	Settings (Audio + ...)	5 days	Mon 4/1/24	Fri 4/5/24		Wissam Al Saub
35	🚀	Credits	5 days	Mon 4/1/24	Fri 4/5/24		Kevin Kayembe
36	📌	📌 Audio	1 day	Mon 4/8/24	Mon 4/8/24		
37	🚀	Level Background Music	1 day	Mon 4/8/24	Mon 4/8/24		Kevin Kayembe
38	🚀	Weapon + Enemies Audio	1 day	Mon 4/8/24	Mon 4/8/24	17	Wissam Al Saub
39	🚀	Death Audio	1 day	Mon 4/8/24	Mon 4/8/24	8,10	Dalton Virtue

Game Elements, Mechanics, and Patterns

Kinds of Play

Competitive, cooperative, play based on skill, experience, change, whimsical play, role-playing, expressive play, simulation-based play

Sea Scoundrels consists of co-operative, skill-based, role-playing, and simulation-based play. The co-operative gameplay element lies within the crewmember system. The crewmembers follow the leader and use radial detection to trigger combat with enemy units to clear territory and progress to newer areas. The acquisition of new crewmembers provides a sophisticated and useful game mechanic when fighting and makes combat easier and exciting to see. In terms of skill-based gameplay, this is applied in combat as well as the way the player distributes their characters for fighting. The role-playing aspect of this game lies within the character customization options. On top of providing a functional utility such as an increase in the expression of the character's stats, it also gives expression in the player's personality. Each crewmember can dress in different clothing that allows the player to apply make believe and personality to each member of their team. Lastly, the simulation-based game mechanic is present throughout any combative system in the game. Characters such as non-controlled crewmembers and enemies/bosses will attack each other based on timers rendering the game playable by itself if need be.

Game Elements

Regarding the 6 elements of the game design model, Sea Scoundrels contains the following...

1. The **Actions** of Sea Scoundrels are as follows...
 - Moving your character via WASD keys or arrow keys.
 - Attacking enemies with ranged (pistol, musket, etc.) or melee (hook, sabre, etc.) or special (bomb) weapons by clicking or pressing spacebar.
 - The ability to use healing items (rum).
 - The ability to swap weapons/items via the hotbar inventory through numeric input (1,2,3,4, or 5).
 - The ability to swap between characters by clicking on them via the HUD. The ability to customize characters by clicking on a clothing icon that appears above their character via the HUD ONLY on Pirate Island.
 - The ability to interact with NPCs by clicking on them in game (which includes for purchasing items).
2. The **Goal** of Sea Scoundrels is to reach the end of all 10 levels. This is achieved by fighting each enemy and boss of each level while collecting loot from the enemies to improve your stats and ability to fight.
3. The **Rules** of Sea Scoundrels can be broken down into 3 categories...
 - Physical Rules
 - When the player is moving the main characters, they are confined by the walls of each level.

- The player can pass through some enemies, while others they cannot.
 - Combat Rules
 - The player can attack enemies and take damage from opposing enemies and their weapons.
 - World Rules
 - Combat is only possible when the player is within a level. If the player is on Pirate Island, combat with other characters is not possible.
 - A player cannot customize their crewmembers unless they are on Pirate Island.
- 4. The **Objects** present to aide in completing the game are...
 - Weapons, of which can be broken into 3 categories...
 - Melee: a short range but stronger choice for close combat.
 - Ranged: for long range, but weaker choice. Some ranged weapons contain multi-shot (multiple projectiles).
 - Other: this specifically pertains to the bomb or rum. The bomb is a weapon that has a single use and is meant for clearing an area. Rum is used for regenerating health (50).
 - Cosmetics, of which can be broken into 3 different types, each that have unique stats that will be explained in the Prototype section. The different types of cosmetics for the character are...
 - Face Items
 - Head Items
 - Body Items
- 5. The **Play Space** of Sea Scoundrels is a fun mixture of pirate themes as well as spooky/fantasy/silly themes. For example, there is human enemies, animal enemies (fish, insects), and objects (a totem pole). The enemies are not all directly correlated to a pirate theme, but due to market research this is a reasonable stylistic collection. Surveyors said that they were open to a pirate game that had multiple different themes unrelated to pirates (pg. 11).
- 6. The **Players** of Sea Scoundrels are the crewmembers that are controlled. There is 3 crewmembers that are unlockable. Of the 3 unlockable crewmembers, 2 are unlockable in gameplay, and 1 is unlockable via the Pirate Island shop.

Design Patterns

The design patterns present in Sea Scoundrels are as follows...

1. **Engines** that generate resources are present within the enemies. Resources such as gold or loot (weapons, cosmetics) can be obtained at chance by killing enemies. The cosmetics that are dropped yield a Luck value that can be used to increase the possibility of an item dropping next time enemies are killed. The amount of gold dropped, or loot obtained by chance are further explained in the prototype area. The engine type for this design pattern is *dynamic* due to a steady flow of increase of resources via long-term investment.

2. A **Stopping Mechanism** is present in 2 mechanics of the game. To avoid abuse of spamming (repetitive use of attacks), there is a default cooldown set to each weapon. A Stopping Mechanism is also present in weapons/items with limited use such as the Bomb or Rum for healing.
3. **Attrition** can be found in clearing the floors of each level. When a player enters a new level or area of a new level, there is enemies waiting to attack or be attacked that will be dominating the area. By clearing each area, the player is obtaining resources as well as making areas easier for further continuation.
4. An **Escalating Challenge** is present within the challenge introduced as the player progresses through the 10 levels. Each new level adds intensity by increasing enemies health, attack power, and attack patterns introducing a more sophisticated tactical challenge to the player.
5. An **Escalating Complexity** design pattern is created by the player depending on their method for attacking enemies. If a player chooses to attack enemies in a non-stealthy or sophisticated pattern it can result in problems in the future (being cornered by multiple enemies, fighting too many enemies at once, etc.)
6. **Trade** is found within the built-in economy of the game. Enemies drop gold, which is used for purchasing items (weapons), a crewmember, or upgrading ship inventory. Another way to think of ship inventory is a SHARED extra hold size for each crewmember.
7. The **Static Friction** game design pattern is found in items with limited use. The special items or weapons such as the bomb and rum contain a single use for temporary attack or healing benefit. Static Friction also occurs when purchasing items in the shop from the vendor as it drains the player's currency.
8. **Dynamic Friction** is implemented in the game as a direct function of the player's health or damage dealt changing due to the number of cosmetics a crewmember is wearing. Due to the customizability feature, some wearable items provide positive or negative benefits to the player which can change how quickly a crewmember loses health or deals damage – further explained in the Prototype section for each cosmetic respectively.
9. The **Arms Race** design pattern is present in the way a player chooses to customize their crewmembers. The strategies chosen to design the crew can alter the way the player chooses to use characters. For example, one crewmember can contain clothing that gives them a defensive build (ie. a tank build), while one character can be prioritized for damage, etc.
10. **Worker Placement** is used with the control of the crewmembers. Crewmembers can be used for aide in fighting, which they will do autonomously, or the player is able to have direct control of them by swapping to them. The movement pattern of autonomous crewmembers is "Follow the Leader", and triggering attacks is done via "radial detection" of the crewmembers. These placement pattern can be used by the player to their advantage when distributing how crewmembers attack enemies.

Target Audience

The demographic for Sea Scoundrels is males and females between the ages of 16 – 40 years of age. This demographic was chosen based on the market research and data collected for the survey. The level of experience for this demographic is those familiar with any game that involves 2D combat. If a player is familiar with The Binding of Isaac or the Legend of Zelda the combative system mechanics are very similar. The Player Types that Sea Scoundrels is specifically tailored towards are...

- **Achiever:** players who enjoy collecting equipment/items such as cosmetics and weapons upon completion of a challenge.
- **Killer:** players who are interested in clearing levels completely and defeating enemies/bosses.

Release Platform: PC ~ Microsoft Windows, MacOS

ESRB Rating



Due to Sea Scoundrels containing little to no adult themes, the Rating T for Teen is the most applicable to this game type. The content descriptors present in Sea Scoundrels are as following...

- **Alcohol Reference:** *References to and/or images of alcoholic beverages.*
In this case, the Rum item that is consumed by the player for healing is a reference to alcohol.
- **Violence:** *Scenes involving aggressive conflict. May contain bloodless dismemberment.*
Violence can be seen with the weapon combat system between characters. There is no “bloodless dismemberment” present by aggressive conflict themes are suggested.
- **Fantasy Violence:** *Violent actions of a fantasy nature, involving human or non-human characters in situations easily distinguishable from real life.*
This can be seen with the combat between the human-like crewmember characters that the player controls, and the fantasy like enemies such as fish enemies, insect enemies, and the tiki enemy.

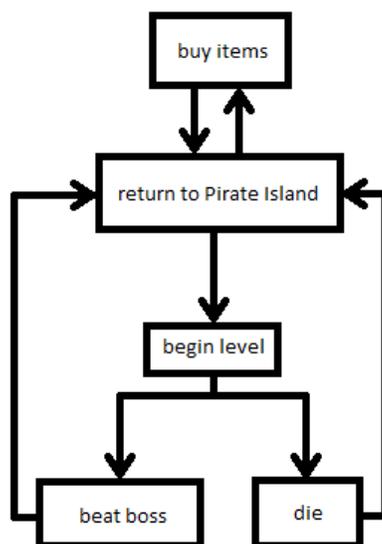
- **Suggestive Themes:** *Mild provocative references or materials.*
The suggestive themes are present throughout the game in the forms of alcohol consumption, and death, portrayed as a tombstone falling on the character.

List of Mechanics

Listed below is the full list and description of mechanics present within Sea Scoundrels.

1. **Combat:** using Ranged, Melee, or other weapon types to deal damage to enemies, as well as those enemies being able to do the same to you.
2. **Death:** Once all the crewmembers have died (hitting 0 Health), a game over screen appears and the player will be brought back to Pirate Island with their crew, of which each crewmembers Health will be restored to its maximum capacity.
3. **Hot Bar Inventory:** ability to swap between items in inventory for use in-game.
4. **Pirate Ship Inventory:** inventory available on the ship for storing extra items that hot bar inventory is unable to keep. This inventory is shared between all crewmembers.
5. **Character Customization:** ability to swap clothing items for statistical benefit while on Pirate Island.
6. **Autosave Feature:** when clearing a level, the game is automatically saved at that current level state.
7. **Swapping Crewmembers:** The ability to change characters or crewmembers such that you have them available. If a crewmember that the player is controlling has died, the next one available in the slot will be automatically swapped to.
8. **AI Crewmember System:** The autonomous AI that crewmembers use to help in fighting or following the character when the player is not actively using them.
9. **Shopping:** the ability to buy items such as weapons or bombs or rum, and a crewmember. As well as the ability to upgrade the player's pirate ship for having more Pirate Ship inventory.

Level Completion Game Flow Diagram



Prototypes

NOTE: Anything denoted in *italics* indicates extra functionality.

Interface: Main Menu

attributions: all images listed within this section were created by Dalton Virtue.

1. The Main Menu background seen by the player.
2. The Logo for Sea Scoundrels.
3. The Play Button for the Main Menu.
4. The Credits Button for the Main menu (creators & attributions).
5. A popup asking if you are sure of resetting data (occurs when “reset game” is clicked)
6. Screenshot of the Main Menu.
7. Screenshot of the Main Menu with the Reset Data (5) overlaid.
8. The Sub Menu that opens when swapping character controls. The small text below the keyboard icons (7) indicates the specific key associated with the action.



main_menu_background.png

Figure 1



logo.png

Figure 2



play_btn.png

Figure 3



credits_btn.png

Figure 4

Are you sure you want
to reset your data?



are_you_sure_popup.png

Figure 5

Screenshot: Main Menu



Figure 6

Screenshot: Main Menu: Reset Game Popup



Figure 7

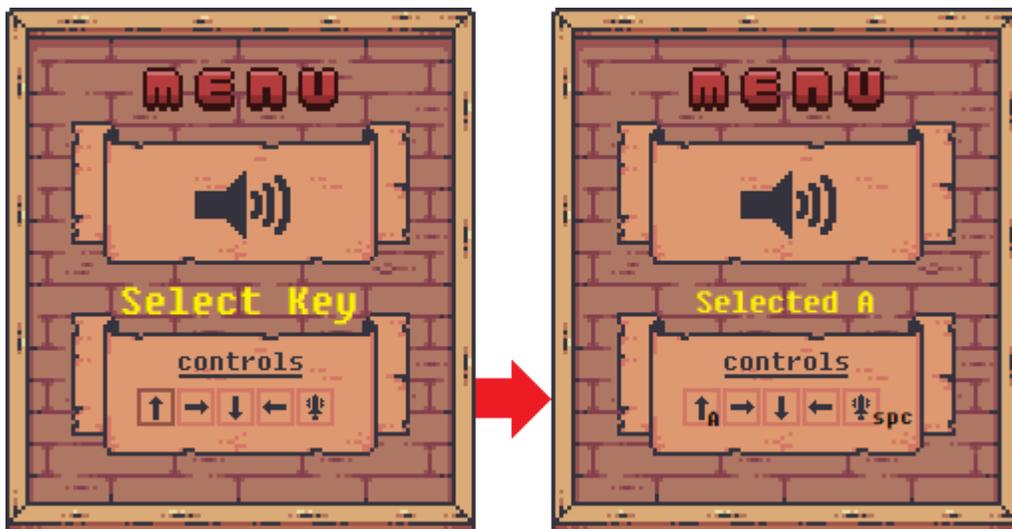
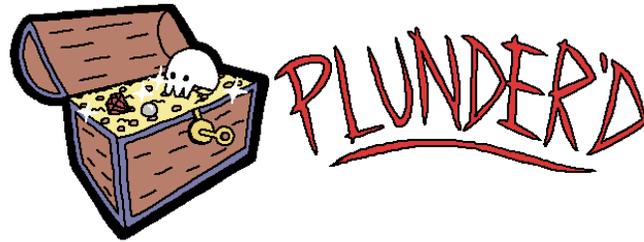


Figure 8

Interface: Game Flow End Popups

attributions: all images listed within this section were created by Dalton Virtue.

1. The Victory Screen overlay image that appears on top of the game when a level is cleared.
2. The Game Over overlay image that appears on top of the game when all crewmembers have hit OHP.
3. The Unlock New Crewmember overlay image when a new crewmember is unlocked.



victory_screen.png

Figure 1



game_over.png

Figure 2



unlock_new_crewmember.png

Figure 3

Interface: Ship Inventory Screen

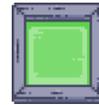
attributions: all images listed within this section were created by Dalton Virtue.

1. The Ship Inventory icon that appears once the player interacts with the pirate ship on Pirate Island.
2. The Ship Inventory slot colour (different from the hotbar inventory colour) that appears when the Ship Inventory screen is active. 15 of these slots are available.

The logo for the Ship Inventory screen, featuring the words "Ship Inventory" in a stylized, cyan-colored font with a black outline, set against a black rectangular background.

ship_inventory_logo.png

Figure 1



ship_inventory_slot.png

Figure 2

Interface: Level Select Screen

attributions: all images listed within this section were created by Dalton Virtue.

1. The Level Select pop-up that appears when the player interacts with the pirate ship on Pirate Island. The "> level n" text is changed to black colouring as opposed to the dark yellow when a new level is unlocked.
2. The X that goes over each enemy once they are killed in each level.



level_select_screen.png

Figure 1



level_select_screen.png

Figure 2

Screenshot: Interaction with Pirate Ship on Pirate Island

- 1. A screenshot of what the combined Level Select screen and Ship Inventory screen look like.



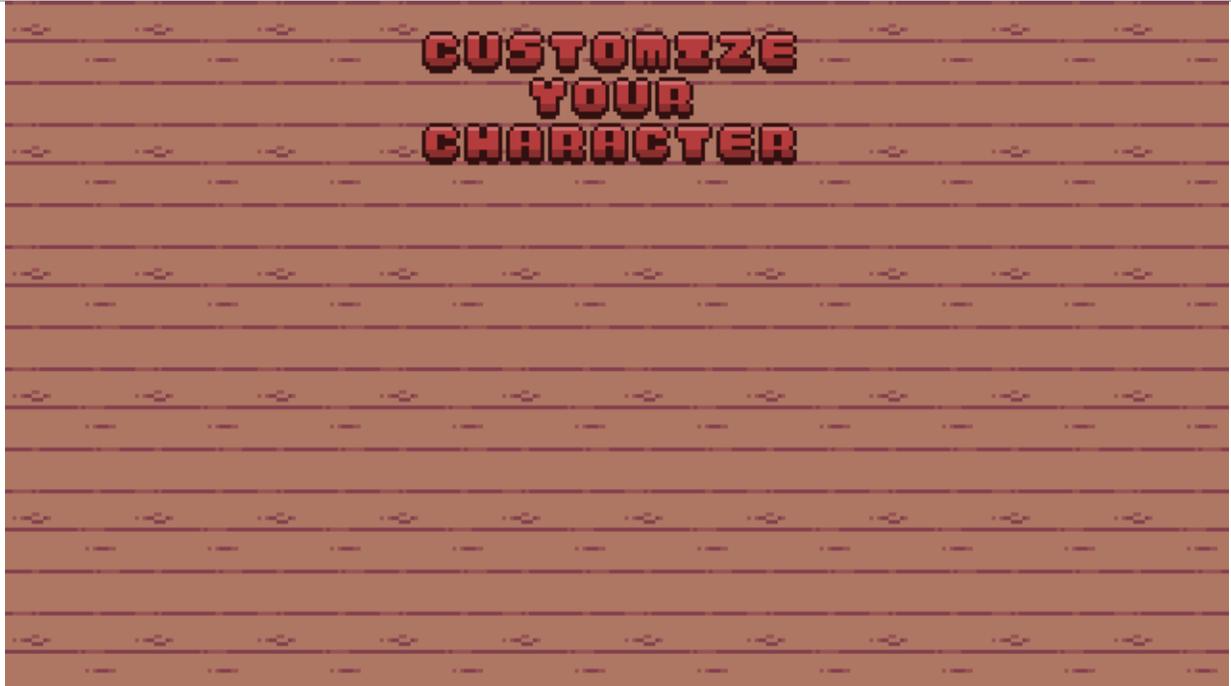
Figure 1

Interface: Character Customization

attributions: all images listed within this section were created by Dalton Virtue.

1. The Head Display Image that changes the character's head to the head of Figure 1.
2. The Head Display Image that changes the character's head to the head of Figure 2.
3. The Head Display Image that changes the character's head to the head of Figure 3.
4. The Swap Clothes Arrow icon for changing the clothes of the character. The top arrow in Figure 7 is for Hat items, the middle arrow is for Face items, and the bottom arrow is for Body items.
5. The Character Customization Confirmation icon for when the player is finished customizing their character.
6. The background for the Character Customization.
7. Screenshot of the Character Customization screen.

 headDisplay1.png Figure 1	 headDisplay2.png Figure 2	 headDisplay3.png Figure 3
 swap_clothes_arrow.png Figure 4		 confirm_character_customization.png Figure 5



character_customization_background.png

Figure 6

Screenshot: Character Customization Menu

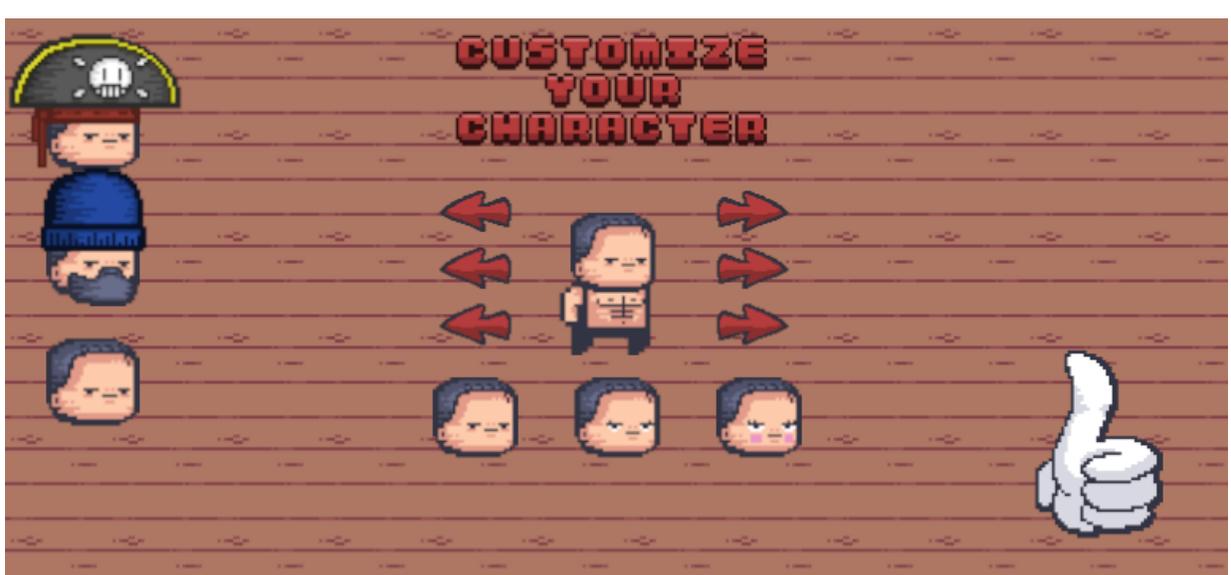


Figure 7

Interface: Shop

attributions: all images listed within this section were created by Dalton Virtue.

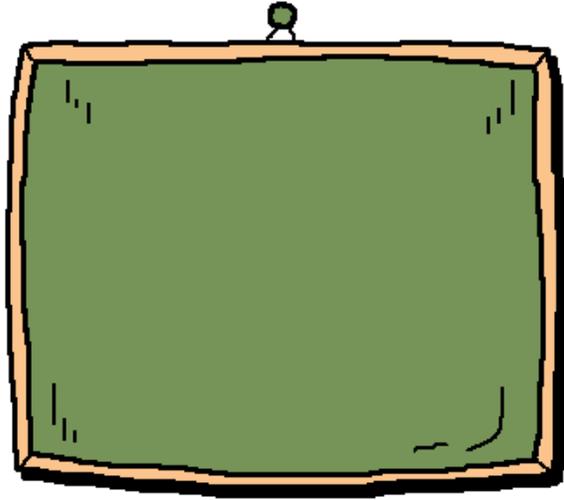
1. The Shop Menu logo.
2. The Shop Menu static character as seen inside.
3. A billboard background element used for storing information about ship inventory.
4. The “Buy” button overlaid on element 3 for buying more ship inventory.
5. A static background element for placing the purchasable clothing items on.
6. The “SOLD” icon once one of the 2 clothing items or crewmember is bought.
7. The “Increase Ship Inventory” text.
8. The “Clothing” text.
9. The “Buy a Crewmember” text.
10. The price tag for purchasing a crewmember (costs 300 coins). Only purchasable once.
11. The price tag for purchasing a clothing item (costs 150 coins). Each is only purchasable once.
12. The price tag for purchasing a bomb or rum item (costs 25 coins). Purchasable infinite amount of times and has a one-time use.
13. The Rum icon.
14. The Bomb icon.
15. The “Insufficient Funds” text that appears when an item is attempted for purchase but there isn’t enough money.
16. The “Ship Inventory Full” text that appears when an item is attempted for purchase but the ship inventory is full.
17. The “Added to Ship Inventory” text that appears when the “Buy” button (4) is clicked.
18. Screenshot for what each element looks like in the game once put together.





captain_chum.png

Figure 2



billboard.png

Figure 3



buy_ship_inventory.png

Figure 4



clothing_shelf.png

Figure 5



sold_icon.png

Figure 6

increase your
SHIP inventory

increase_ship_inventory_title.png

Figure 7



pricetag_crewmember.png

Figure 10

clothing

clothing_title.png

Figure 8



pricetag_clothes.png

Figure 11

<p>buy a crewmember buy_crewmember_title.png Figure 9</p>	<p> pricetag_other.png Figure 12</p>
<p> rum_shop.png Figure 13</p>	<p> bomb_shop.png Figure 14</p>
<p>insufficient funds! insufficient_funds_text.png Figure 15</p>	
<p>sorry! your ship inventory is full! ship_inventory_full_text.png Figure 16</p>	
<p>added to ship inventory added_to_ship_inventory.png Figure 17</p>	

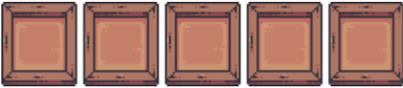


Figure 18

Interface: HUD

attributions: all images listed within this section were created by Dalton Virtue or a Creative Commons Zero (CC0) license.

1. The Hot Bar Inventory or readily accessible items by each crewmember. This is also an overlay for the Ship Inventory. (CC0)
2. An Icon that appears when the mouse is hovering over a character. Used when prompted to Customize a Crewmember on Pirate Island.
3. The Boss Health Bar Overlay that occurs when encountering a boss.
4. The Tombstone that falls on a player upon death.
5. An outline of the head for positioning purposes.
6. An icon placed over the head of a character if it dies. (The character will also have a grayscale filter applied to their face which can be seen in Figure 9 and 10)
7. An animated sprite sheet of the blood wave that appears upon the player's health bar.
8. The "Settings" icon that triggers opening of the Settings Menu.
9. What the Default HUD looks like without characters attached.
10. What the Default HUD looks like when encountering a boss (permutation of Figure 8).
11. A screenshot of what the HUD looks like with all of the elements together.

 <p>hotbar_inventory.png</p> <p>Figure 1</p>	 <p>mouse_hovering_over_character.png</p> <p>Figure 2</p>	
 <p>boss_healthbar_overlay.png</p> <p>Figure 3</p>	 <p>tombstone.png</p> <p>Figure 4</p>	
 <p>default_head_hud.png</p> <p>Figure 5</p>	 <p>default_head_hud_dead.png</p> <p>Figure 6</p>	 <p>health_wave_spritesheet.png</p> <p>Figure 7</p>  <p>settings_icon.png</p> <p>Figure 8</p>

Screenshot: HUD

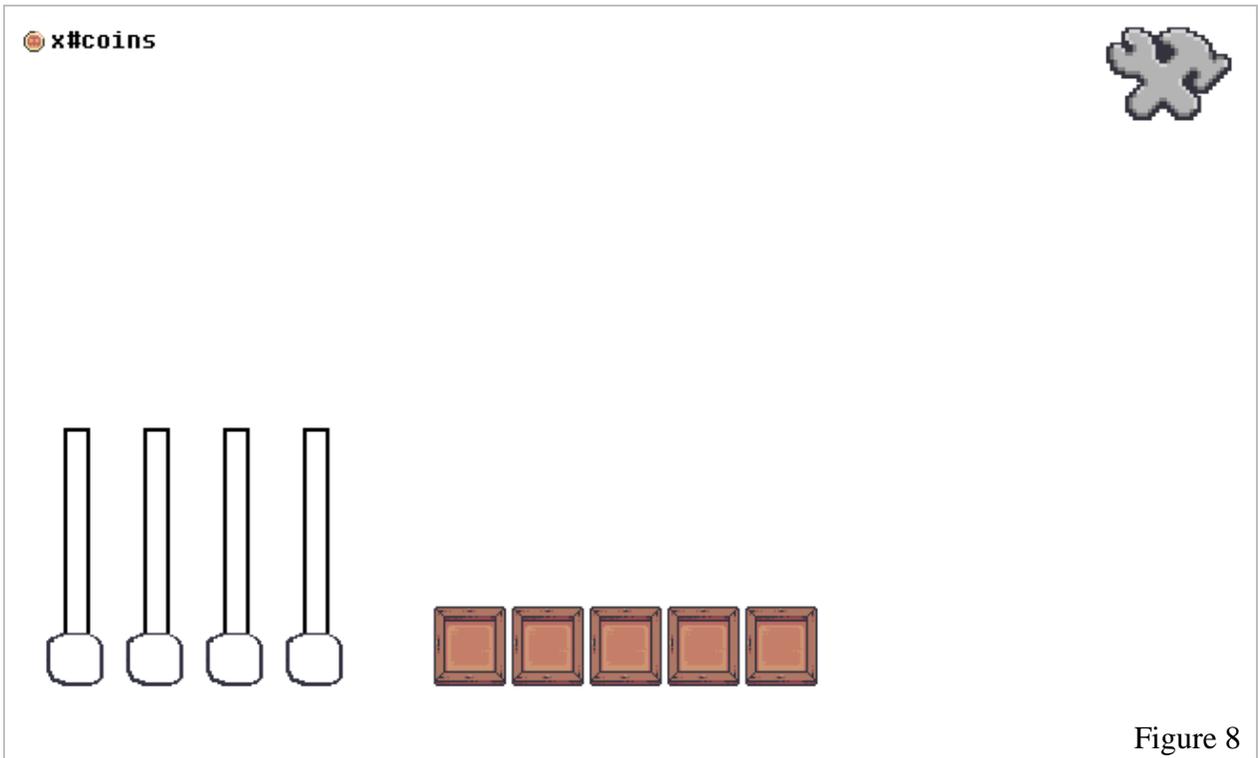


Figure 8

Screenshot: HUD with Boss Health Bar Overlay

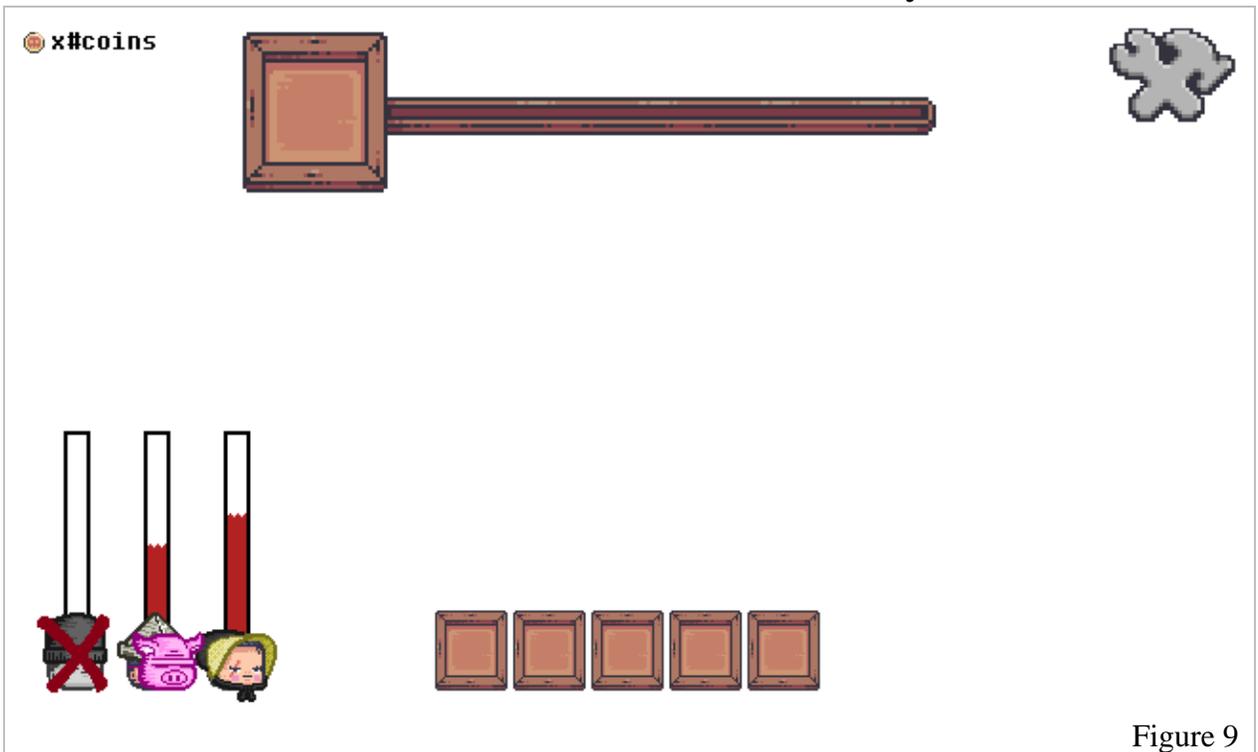


Figure 9

Screenshot: HUD

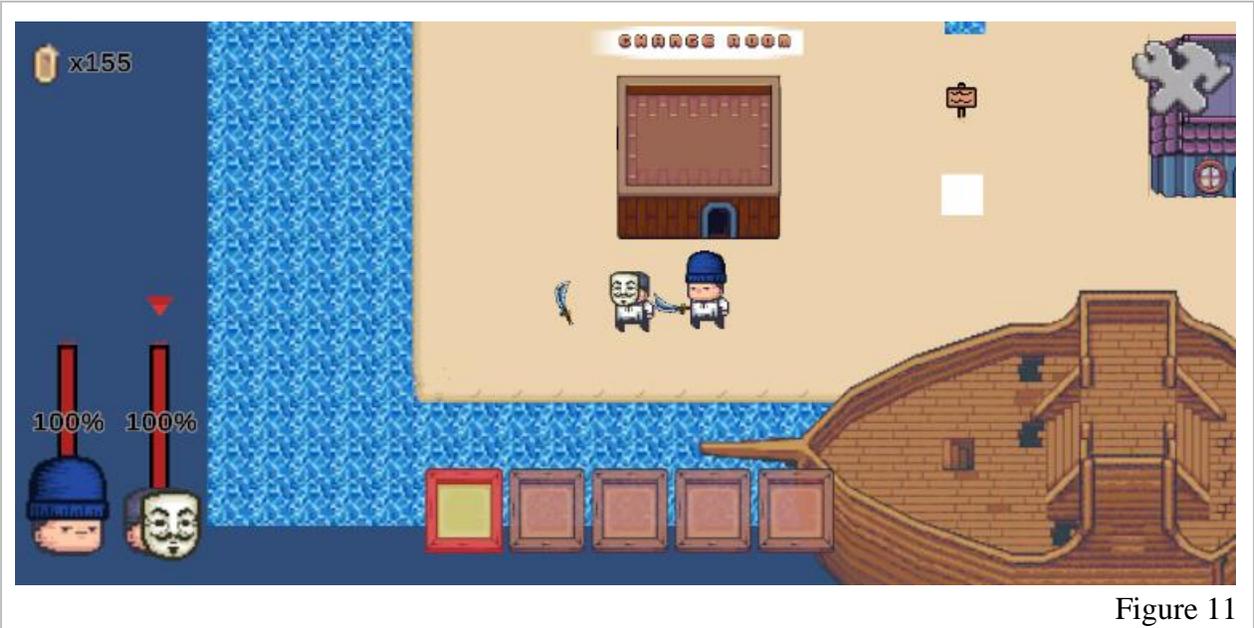


Figure 11

Interface: Settings Menu

attributions: all images listed within this section were created by Dalton Virtue.

1. The Settings Menu as it appears in the game's HUD.
2. The Exit Button that is attached to the Settings Menu (Permutation).
3. The Controls Border that is attached to the Settings Menu.
4. The SFX Low Icon which toggles to medium (5) when clicked.
5. The SFX Medium Icon which toggles to high (6) when clicked.
6. The SFX High Icon which toggles to off (4) when clicked.
7. The "Exit Game" button for exiting the game.
8. Screenshot of what the Settings Menu looks like with all elements added together.

 <p>settings_menu.png Figure 1</p>	 <p>settings_exit.png Figure 2</p>	 <p>controls_border.png Figure 3</p>	
	 <p>sfx_low.png Figure 4</p>	 <p>sfx_medium.png Figure 5</p>	 <p>sfx_high.png Figure 6</p>
	 <p>exit_game_btn.png Figure 7</p>		

Screenshot: Settings Menu Overlay



Figure 8

Interface: Help Billboard

attributions: all images listed within this section were created by Dalton Virtue or a Creative Commons Zero (CC0) license.

1. The billboard icon that appears on Pirate Island (clickable).
2. An icon to escape from the info board.
3. The info board itself.



billboard_icon.png

Figure 1



info_board_exit.png

Figure 2



info_board.png

Figure 3

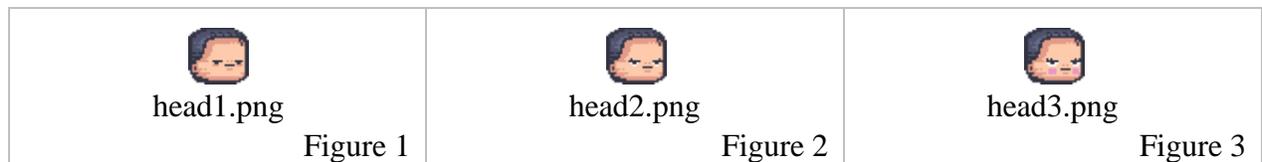
Conceptual Art: Player

attributions: all images listed within this section were created by Dalton Virtue.

NOTE: All characters have a base health of [80 - 100] that changes based on the level the character is on. (Increases by 2 for each level from 1 - 10)

Heads

1. The Head 1 Icon
2. The Head 2 Icon
3. The Head 3 Icon



Faces

The Stats of each item are listed within their respective figures.

4. The Beard Face item. This is a given item.
5. The Diablo Face item. Unlockable in levels 1 - 3.
6. The Sunglasses Face item. Unlockable in levels 1 - 3.
7. The Eyepatch Face item. Unlockable in levels 1 - 3.
8. The Scar Face item. Unlockable in levels 4 - 5.
9. The Guy Fawkes Mask Face item. Purchasable in the shop for 150 Gold.
10. The Masquerade Face item. Unlockable in levels 6 - 7.
11. The Pig Mask Face item. Unlockable in levels 6 - 7.
12. The Punisher Mask Face item. Unlockable in levels 8 - 10.
13. The Tengu Mask Face item. Unlockable in levels 8 - 10.

 f_beard.png <i>Defense: +1</i> Figure 4	 f_diablo.png <i>Defense: +1</i> <i>Luck: +1</i> Figure 5	 f_sunglasses.png <i>Defense: +3</i> <i>Agility: +1</i> Figure 6	 f_eyepatch.png <i>Defense: +4</i> <i>Attack: +1</i> Figure 7	 f_scar.png <i>Defense: +10</i> <i>Luck: -1</i> Figure 8
 f_guy_fawkes.png <i>Defense: +15</i> <i>Attack: +4</i> Figure 9	 f_masquerade.png <i>Defense: +12</i> <i>Luck: +1</i> Figure 10	 f_pigface.png <i>Defense: +18</i> <i>Luck: -2</i> <i>Attack: +3</i> Figure 11	 f_punisher.png <i>Defense: +20</i> <i>Attack: +7</i> Figure 12	 f_tengu_mask.png <i>Defense: +25</i> <i>Attack: +6</i> <i>Luck: -3</i> Figure 13

NOTE: Defense ranges from [1, 25] for Face items.

Hats

The Stats of each item are listed within their respective figures.

14. The Captain Pirate Hat item. This is a given item.
15. The Newspaper Hat item. Unlockable in levels 1 - 3.
16. The Orange Bandana Hat item. Unlockable in levels 1 - 3.
17. The Sailor Hat item. Unlockable in levels 1 - 3.
18. The Victorian Pirate Hat item. Unlockable in levels 4 - 5.
19. The Green Pirate Hat item. Unlockable in levels 4 - 5.
20. The Blue Toque Hat item. Purchasable in the shop for 150 Gold.
21. The Bunny Hat item. Unlockable in levels 6 - 7.
22. The Spooky Pirate Hat item. Unlockable in levels 8 - 10.
23. The Crown Hat item. Unlockable when beating the final boss.

 h_captain_pirate_hat.png <i>Health: +5</i> Figure 14	 h_newspaper_hat.png <i>Health: +10</i> <i>Luck: +1</i> Figure 15	 h_orange_bandana.png <i>Health: +10</i> <i>Attack: +4</i> Figure 16	 h_sailor_hat.png <i>Health: +25</i> Figure 17	 h_victorian_pirate_hat.png <i>Health: +20</i> <i>Attack: +2</i> Figure 18
 h_green_pirate_hat.png <i>Health: +25</i> <i>Luck: +2</i> <i>Attack: +3</i> Figure 19	 h_blue_toque.png <i>Health: +32</i> <i>Luck: +1</i> <i>Attack: +2</i> Figure 20	 h_bunny_hat.png <i>Health: +18</i> <i>Agility: +2</i> Figure 21	 h_spooky_pirate_hat.png <i>Health: +38</i> <i>Attack: +4</i> <i>Luck: -2</i> Figure 22	 h_crown.png <i>Health: +50</i> <i>Luck: +3</i> Figure 23

NOTE: Health ranges from [1, 50] for Hat items.

Bodies (Idle)

The Stats of each item are listed within their respective figures.

24. The Default Body item. This is a given item.
25. The Jacked Body item. This is a given item.
26. The Costume Pirate Body item. Unlockable in levels 1 - 10.
27. The Lousy Pirate Body item. Unlockable in levels 1 - 10.
28. The Maid Outfit Body item. Unlockable in levels 1 - 10.
29. The Orange Tank Top Body item. Unlockable in levels 1 - 10.
30. The Mermaid Bikini Top Body item. Unlockable in levels 1 - 10.
31. The Spooky Pirate Costume Body item. Unlockable in levels 1 - 10.
32. The Victorian Pirate Body item. Unlockable in levels 1 - 10.
33. The Sailor Shirt Body item. Unlockable in levels 1 - 10.

 i_default.png Figure 24	 i_jacked_bod.png <i>Attack: +1</i> Figure 25	 i_costumey_pirate.png <i>Agility: +1</i> <i>Defense: +2</i> <i>Attack: +1</i> Figure 26	 i_lousy_pirate.png <i>Agility: +1</i> <i>Luck: +1</i> <i>Attack: +3</i> Figure 27	 i_maid_outfit.png <i>Agility: +2</i> <i>Defense: +1</i> Figure 28
 i_orange_tanktop.png <i>Agility: +1</i> <i>Defense: +3</i> <i>Attack: +2</i> Figure 29	 i_mermaid_bikini_top.png <i>Agility: +3</i> <i>Attack: +1</i> Figure 30	 i_spooky_pirate_costume.png <i>Luck: +2</i> <i>Attack: +2</i> Figure 31	 i_victorian_pirate.png <i>Agility: +1</i> <i>Defense: +5</i> <i>Attack: +1</i> Figure 32	 i_sailor_shirt.png <i>Agility: +2</i> <i>Luck: +1</i> <i>Attack: +1</i> Figure 33

NOTE: Agility ranges from [1, 3] for Face items.

Bodies (Running)

34. The Default Body item running sprite sheet.
35. The Jacked Body item running sprite sheet.
36. The Costume Pirate Body item running sprite sheet.
37. The Lousy Pirate Body item running sprite sheet.
38. The Maid Outfit Body item running sprite sheet.
39. The Orange Tank Top Body item running sprite sheet.
40. The Mermaid Bikini Top Body item running sprite sheet.
41. The Spooky Pirate Costume Body item running sprite sheet.
42. The Victorian Pirate Body item running sprite sheet.
43. The Sailor Shirt Body item running sprite sheet.





r_orange_tanktop.png

Figure 40



r_sailor_shirt.png

Figure 41



r_spooky_pirate_costume.png

Figure 42



r_victorian_pirate.png

Figure 43

Conceptual Art: Bosses

attributions:

Some images listed within this section were obtained with the Creative Commons Zero (CC0) license.

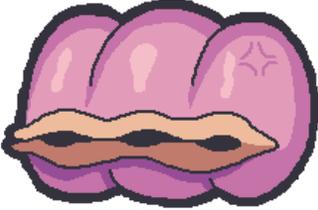
Portraits were designed by Dalton Virtue.

Some images were acquired with Craftpix applicable license upon purchasing, which can be found here: <https://craftpix.net/file-licenses/> and denoted as (Craftpix License).

NOTE:- The Health & Gold Drops of each boss is listed within the portraits of each boss.

- The Damage of each boss is listed within the attack sprite sheets of each boss.

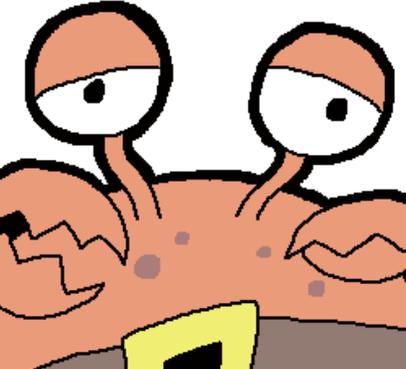
1. The Oyster Boss Idle frame. (CC0)
2. The Oyster Boss projectile it shoots from its mouth from Figure 3. (CC0)
3. The Oyster Boss biting animation sprite sheet. (CC0)
4. The Oyster Boss attacking animation sprite sheet. (CC0)
5. The Oyster Boss portrait that is displayed in the box of Figure 3 in Interface: HUD.

 <p>oyster_idle.png</p> <p style="text-align: center;">Figure 1</p>	 <p>pearl_projectile.png</p> <p style="text-align: right;">Figure 2</p>
 <p style="text-align: center;">oyster_biting.png</p> <p style="text-align: center;"><i>Damage: 5</i></p> <p style="text-align: right;">Figure 3</p>	
 <p style="text-align: center;">oyster_attacking.png</p> <p style="text-align: center;"><i>Damage: 3</i></p> <p style="text-align: right;">Figure 4</p>	
 <p style="text-align: center;">oyster_portrait.png</p> <p style="text-align: center;"><i>Health: 25</i></p> <p style="text-align: center;"><i>Gold Drops: 20</i></p> <p style="text-align: right;">Figure 5</p>	

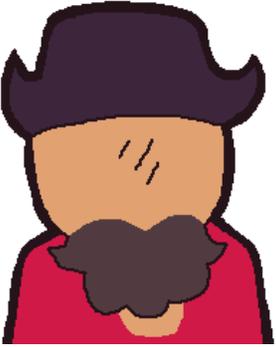
6. The Tiki Boss Top Head Idle frame. (CC0)
7. The Tiki Boss Middle Head Idle frame. (CC0)
8. The Tiki Boss Bottom Head Idle frame. (CC0)
9. The Tiki Boss projectile it shoots from its mouth from Figure 6,7, & 8. The damage amount changes depending on which head was shot from. (CC0)
10. The Tiki Boss Top Head attacking animation sprite sheet. (CC0)
11. The Tiki Boss Middle Head attacking animation sprite sheet. (CC0)
12. The Tiki Boss Bottom Head attacking animation sprite sheet. (CC0)
13. The Tiki Boss portrait that is displayed in the box of Figure 3 in Interface: HUD

 <p>totem_top_idle.png Figure 6</p>	 <p>totem_middle_idle.png Figure 7</p>	 <p>totem_bottom_idle.png Figure 8</p>	 <p>totem_projectile.png Figure 9</p>
 <p>totem_top_attack.png <i>Damage: 5</i></p> <p style="text-align: right;">Figure 10</p>			
 <p>totem_middle_attack.png <i>Damage: 4</i></p> <p style="text-align: right;">Figure 11</p>			
 <p>totem_bottom_attack.png <i>Damage: 3</i></p> <p style="text-align: right;">Figure 12</p>			
 <p>totem_portrait.png <i>Health: 45</i> <i>Gold Drops: 25</i></p> <p style="text-align: right;">Figure 13</p>			

- 14. The Crab Boss Idle frame. (CC0)
- 15. The Crab Boss moving animation sprite sheet. (CC0)
- 16. The Crab Boss attacking animation sprite sheet. (CC0)
- 17. The Crab Boss portrait that is displayed in the box of Figure 3 in Interface: HUD.

 <p>crab_idle.png</p>	Figure 14
 <p>crab_moving.png</p>	Figure 15
 <p>crab_attacking.png <i>Damage: 9</i></p>	Figure 16
 <p>crab_portrait.png <i>Health: 60</i> <i>Gold Drops: 35</i></p>	Figure 17

- 18. The Boss Pirate Idle frame. (CraftPix License)
- 19. The Boss Pirate attacking animation sprite sheet. (CraftPix License)
- 20. The Boss Pirate moving animation sprite sheet. (CraftPix License)
- 21. The Boss Pirate calling animation sprite sheet. When the Boss Pirate calls, it triggers 2 enemies to appear and help fight. (CraftPix License)
- 22. The Boss Pirate portrait that is displayed in the box of Figure 3 in Interface: HUD.

 <p style="text-align: center;">bosspirate_idle.png</p>	Figure 18
 <p style="text-align: center;">bosspirate_attack.png <i>Damage: 15</i></p>	Figure 19
 <p style="text-align: center;">bosspirate_moving.png</p>	Figure 20
 <p style="text-align: center;">bosspirate_calling.png</p>	Figure 21
 <p style="text-align: center;">bosspirate_portrait.png <i>Health: 75</i> <i>Gold Drops: 45</i></p>	Figure 22

- 23. The Whale Boss Idle animation sprite sheet. (CC0)
- 24. The Whale Boss moving animation sprite sheet. (CC0)
- 25. The Whale Boss attacking animation sprite sheet. (CC0)
- 26. The Whale Boss portrait that is displayed in the box of Figure 3 in Interface: HUD.



whaleboss_idle.png

Figure 23



whaleboss_moving.png

Figure 24



whaleboss_attacking.png

Damage: 20

Figure 25



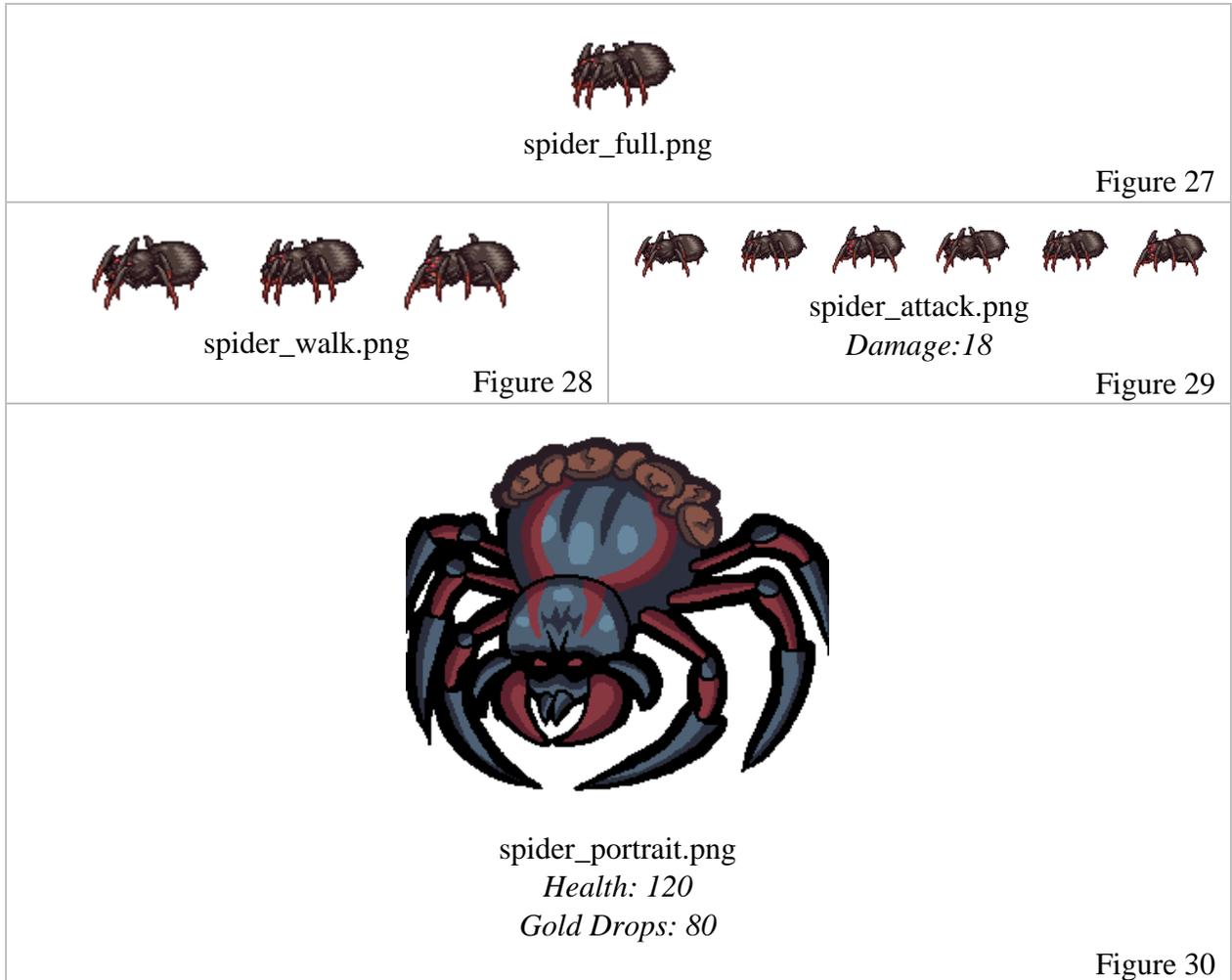
whaleboss_portrait.png

Health: 90

Gold Drops: 60

Figure 26

- 27. The Spider Boss Idle frame. (CC0)
- 28. The Spider Boss Walk spritesheet. (CC0)
- 29. The Spider Boss Attack spritesheet. (CC0)
- 30. The Spider Boss portrait that is displayed in the box of Figure 3 in Interface: HUD.



- 31. Rainbowbeard Idle frame. (CC0)
- 32. Rainbowbeard attacking animation sprite sheet. (CC0)
- 33. Rainbowbeard moving animation sprite sheet. (CC0)
- 34. Rainbowbeard portrait that is displayed in the box of Figure 3 in Interface: HUD.



rainbowbeard_idle.png

Figure 31



rainbowbeard_attack.png
Damage: 30

Figure 32



rainbowbeard_moving.png
Figure 33



rainbowbeard_portrait.png
Health: 150
Gold Drops: 100

Figure 34

Conceptual Art: Enemies

attributions:

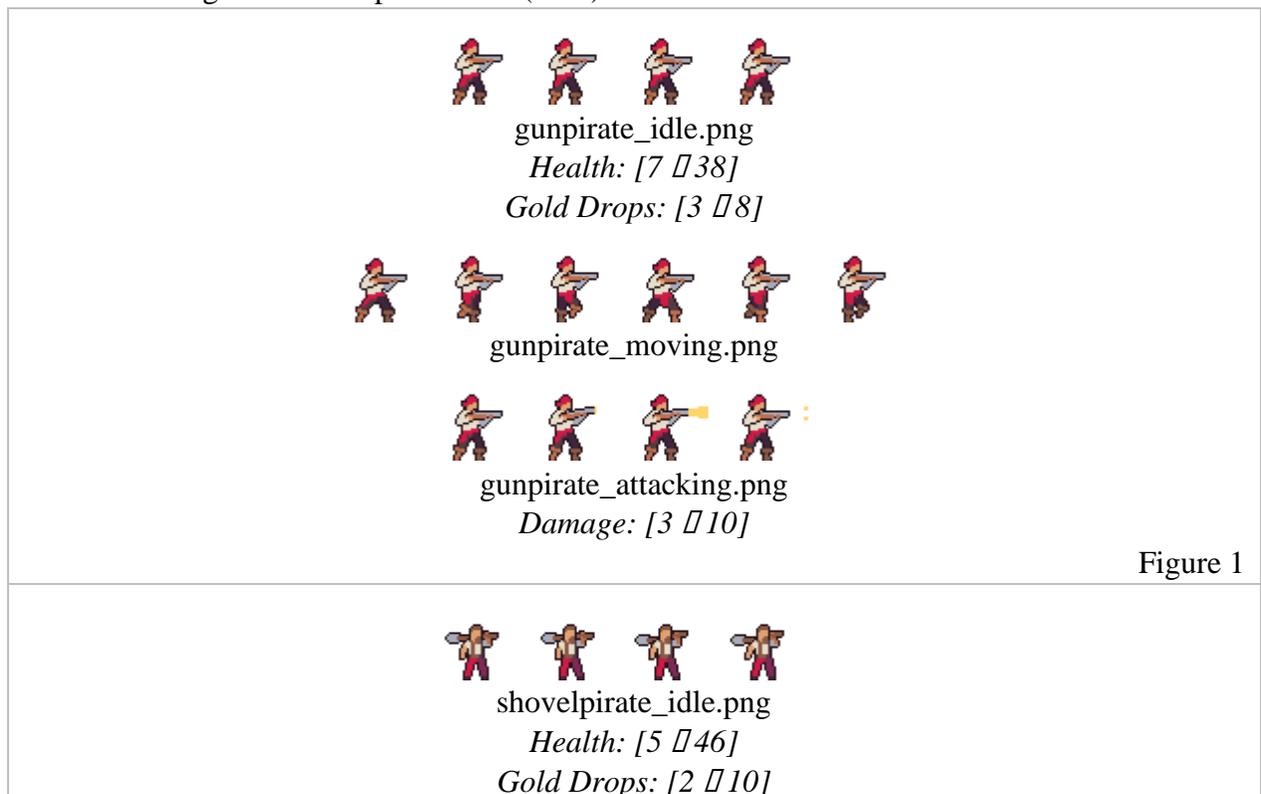
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NOTE: - The Health & Gold Drops of each enemy is listed within the idle frame or full sprite sheet of each. (The values range depending on the current level they are used on)

- The Damage of each enemy is listed within the attack sprite sheets or full sprite sheets of each. (The values range depending on the current level the enemies are used on)

1. The Gun Pirate Idle frame, Gun Pirate moving animation sprite sheet, & Gun Pirate attacking animation sprite sheet. (CC0)
2. The Shovel Pirate Idle frame, Shovel Pirate moving animation sprite sheet, & Shovel Pirate attacking animation sprite sheet. (CC0)
3. The Sword Pirate Idle frame, Sword Pirate moving animation sprite sheet, & Sword Pirate attacking animation sprite sheet. (CC0)





shovelpirate_moving.png



shovelpirate_attacking.png

Damage: [6 - 12]

Figure 2



swordpirate_idle.png

Health: [3 - 32]

Gold Drops: [7 - 10]



swordpirate_moving.png

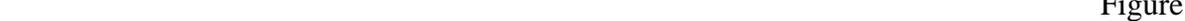


swordpirate_attacking.png

Damage: [6 - 15]

Figure 3

4. The Red Pirate sprite sheet, containing idle state, movements and attacks. (BY-SA 4.0 DEED)
5. The Orange Pirate sprite sheet, containing idle state, movements and attacks. (BY-SA 4.0 DEED)
6. The Yellow Pirate sprite sheet, containing idle state, movements and attacks. (BY-SA 4.0 DEED)
7. The Green Pirate sprite sheet, containing idle state, movements and attacks. (BY-SA 4.0 DEED)
8. The Blue Pirate sprite sheet, containing idle state, movements and attacks. (BY-SA 4.0 DEED)
9. The Purple Pirate sprite sheet, containing idle state, movements and attacks. (BY-SA 4.0 DEED)

 <p style="text-align: center;"> red_spritesheet.png <i>Health: [7 ▯40]</i> <i>Gold Drops: [6 ▯12]</i> <i>Damage: [5 – 15]</i> </p> <p style="text-align: right;">Figure 4</p>
 <p style="text-align: center;"> orange_spritesheet.png <i>Health: [7 ▯40]</i> <i>Gold Drops: [6 ▯12]</i> <i>Damage: [5 – 15]</i> </p> <p style="text-align: right;">Figure 5</p>
 <p style="text-align: center;"> yellow_spritesheet.png <i>Health: [7 ▯40]</i> <i>Gold Drops: [6 ▯12]</i> <i>Damage: [5 – 15]</i> </p> <p style="text-align: right;">Figure 6</p>
 <p style="text-align: center;"> green_spritesheet.png <i>Health: [7 ▯40]</i> <i>Gold Drops: [6 ▯12]</i> <i>Damage: [5 – 15]</i> </p> <p style="text-align: right;">Figure 7</p>
 <p style="text-align: center;"> blue_spritesheet.png <i>Health: [7 ▯40]</i> <i>Gold Drops: [6 ▯12]</i> <i>Damage: [5 – 15]</i> </p> <p style="text-align: right;">Figure 8</p>
 <p style="text-align: center;"> purple_spritesheet.png <i>Health: [7 ▯40]</i> <i>Gold Drops: [6 ▯12]</i> <i>Damage: [5 – 15]</i> </p> <p style="text-align: right;">Figure 9</p>

10. The Mini Captain Pirate Idle frame, Mini Captain Pirate moving animation sprite sheet, & Mini Captain Pirate attacking animation sprite sheet. (CC0)
11. The Mini Gun Pirate Idle frame, Mini Gun Pirate moving animation sprite sheet, & Mini Gun Pirate attacking animation sprite sheet. (CC0)



Figure 10



Figure 11

12. The Shark Guy Idle frame, Shark Guy moving animation sprite sheet, & Shark Guy attacking animation sprite sheet. (CC0)
13. The Sea Star Idle frame, Sea Star moving animation sprite sheet, & Sea Star attacking animation sprite sheet. (CC0)
14. The Sword Pirate Idle frame, Sword Pirate moving animation sprite sheet, & Sword Pirate attacking animation sprite sheet. (CC0)

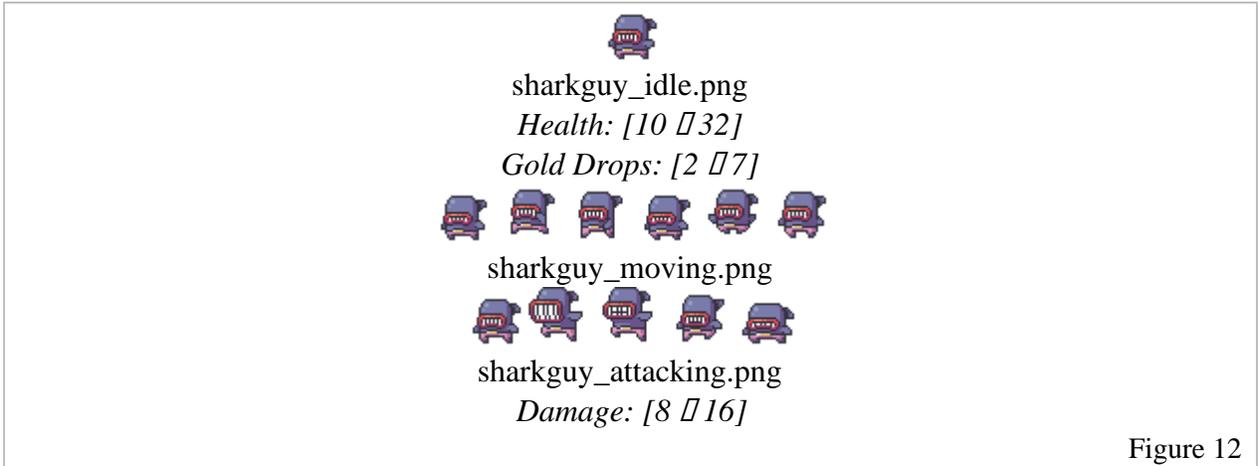


Figure 12

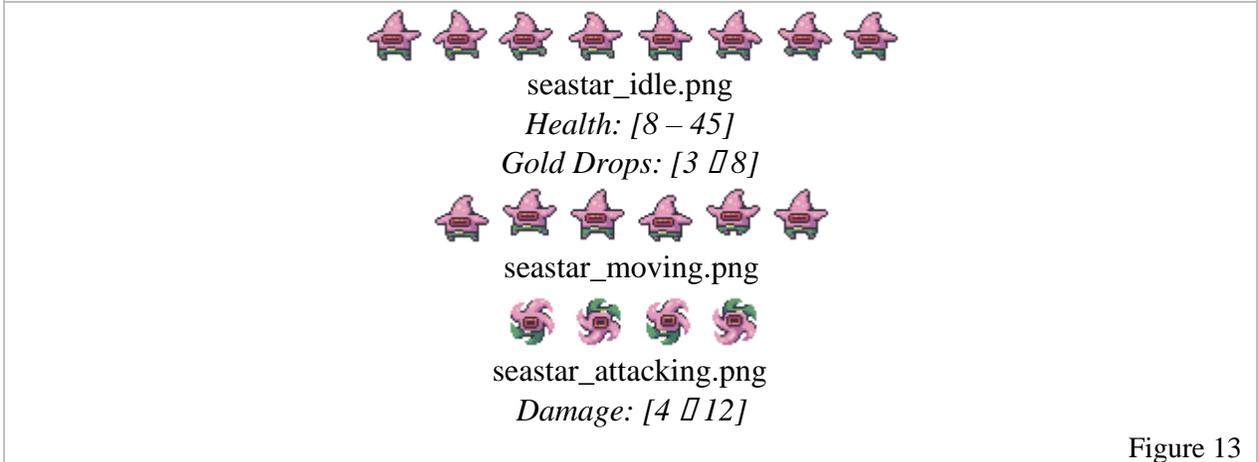


Figure 13

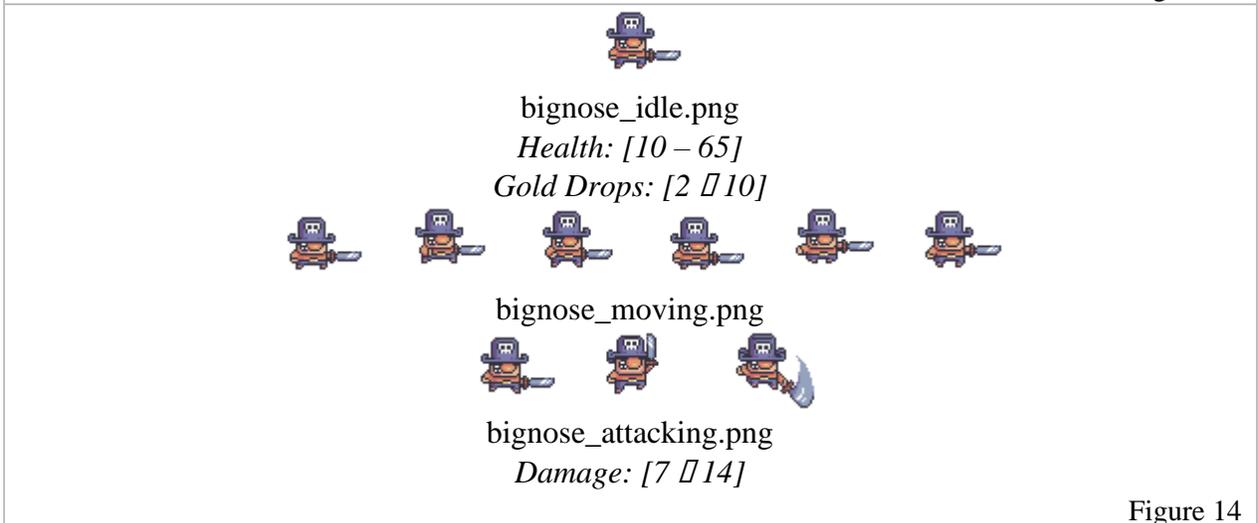


Figure 14

Conceptual Art: Items

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1. Coin sprite sheet default animation. This is used to denote currency that is tradeable within the shop (Interface: Shop, Figure 1) on Pirate Island. (CC0)
2. Rum sprite sheet default animation. This is used for healing 25 health to the player. (CC0)
3. Pirate Map sprite sheet default animation. This is used as a progression device (obtaining one of these is indication that the player has completed a level). (CC0)
4. Cannon Ball projectile used by the Cannon (Figure 5). Shoots out of the cannon with the animation that plays in Figure 6. (CC0)
5. The Cannon Idle state. (CC0)
6. The Cannon fire sprite sheet animation. Shoots the projectile (Figure 5) on the final frame. (CC0)
7. Box that is used for pushing in the puzzle levels. (CC0)
8. The Key sprite sheet default animation. Used for unlocking the chest (Figure 9), only useable once and used in puzzle levels. (CC0)
9. The Chest closed image. (CC0)
10. The Chest opened image. This is produced when a key object is used on Figure 9. This object is produced after Figure 11's animation plays. (CC0)
11. The Chest opening sprite sheet animation to transition from Figure 9 to Figure 10. (CC0)
12. The Bomb purchasable item available in the Shop. This costs 25 Gold. (CC0)
13. The Bomb explosion sprite sheet animation. This deals 25 damage. (CC0)

 <p>coin_spritesheet.png</p> <p>Figure 1</p>	 <p>rum_spritesheet.png</p> <p>Figure 2</p>
 <p>pirate_map_spritesheet.png</p> <p>Figure 3</p>	
 <p>cannonball_idle.png</p> <p>Figure 4</p>	 <p>cannon_idle.png</p> <p>Figure 5</p>
 <p>cannon_fire.png</p> <p>Figure 6</p>	

 <p>box.png</p> <p>Figure 7</p>	 <p>key_spritesheet.png</p> <p>Figure 8</p>
 <p>chest_closed.png</p> <p>Figure 9</p>	 <p>chest_opened.png</p> <p>Figure 10</p>
 <p>chest_opening_spritesheet.png</p> <p>Figure 11</p>	
 <p>bomb_idle.png</p> <p>Figure 12</p>	
 <p>bomb_exploding.png</p> <p>Figure 13</p>	

Conceptual Art: Weapons

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1. The Pirate Sword. A Melee weapon with 5 damage and a medium reload time. It is a given item (one that the player starts with).
2. The Dagger. A Melee weapon with 4 damage and a fast reload time. It is unlockable in levels 1 - 3.
3. The Sabre. A Melee weapon with 8 damage and a fast reload time. It is unlockable in levels 4 - 5.
4. The Hook. A Melee weapon with 13 damage and a medium reload time. It is unlockable in levels 6 - 7.
5. The Cutlass. A Melee weapon with 16 damage and a slow reload time. It is unlockable in levels 8 - 10.
6. The Pistol. A Ranged weapon with 3 damage and a fast reload time. It is unlockable in levels 1 - 3.
7. The Revolver. A Ranged weapon with 10 damage and a slow reload time. It is unlockable in levels 1 - 3.
8. The Musket. A Ranged weapon with 15 damage and a slow reload time. It is unlockable in levels 4 - 5.
9. The Blunderbuss. A Ranged weapon with 7 damage and a medium reload time. It is unlockable in levels 6 - 7 and possesses multi shot. The weapon shoots in 2 directions.
10. The Triple Barrel. A Ranged weapon with 4 damage and a medium reload time. It is unlockable in levels 8 - 10 and possesses multi shot. The weapon shoots in 3 directions.

 pirate_sword.png Type: <i>Melee</i> Damage: 5 Reload Time: <i>Medium</i>	 dagger.png Type: <i>Melee</i> Damage: 4 Reload Time: <i>Fast</i>	 sabre.png Type: <i>Melee</i> Damage: 8 Reload Time: <i>Fast</i>	 hook.png Type: <i>Melee</i> Damage: 13 Reload Time: <i>Medium</i>	 cutlass.png Type: <i>Melee</i> Damage: 16 Reload Time: <i>Slow</i>
 pistol.png Type: <i>Ranged</i> Damage: 3 Reload Time: <i>Fast</i>	 revolver.png Type: <i>Ranged</i> Damage: 10 Reload Time: <i>Slow</i>	 musket.png Type: <i>Ranged</i> Damage: 15 Reload Time: <i>Slow</i>	 blunderbuss.png Type: <i>Ranged</i> Damage: 7 Reload Time: <i>Medium</i>	 triplebarrel.png Type: <i>Ranged</i> Damage: 4 Reload Time: <i>Medium</i>

Sound Design

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To access the audio for the sounds listed below, please visit the link here:

https://stclairconnect-my.sharepoint.com/:f/g/personal/w0806469_myscc_ca/EIRwAYrOrhVEuSPXG8ox-o4BPMc9ehLpuqpkk5s-zXbhiA?e=6Pd0TV

Shooting Sounds

hitting-target.wav	shotgun-shot.wav
gamer__gunshot.wav	crossbow-firing.wav
kneeling__cannon.wav	firecracker-explosion.wav

Melee Sounds

sword-sound.wav
swords-clash.wav
sword_whoosh_sound.wav
sword_fire.wav
gamer__slash.wav

Death Sounds

male-death-sound.wav
female-death-sound.wav
church bell.wav

Background Sounds: Miscellaneous

deep-explosion-noisy.wav
bell-ding.wav
336007_rudmer_rotteveel_multiple-deep-explosions-noisy-rec.wav

Background Sounds: Water

water-through-rocks.wav
big-water-splash.wav
splash.wav
sea-ambience-water-waves.wav

Background Sounds: Themes

A Robust Crew.wav
PerituneMaterial_Sea_Breeze_loop.ogg
PerituneMaterial_Bustling_Village_loop.ogg
PerituneMaterial_RetroRPG_Dungeon_loop.ogg
PerituneMaterial_Beach2_loop.ogg

Healing Sounds

562292__colorscrimson_tears_heal-rpg.wav
drink-gulp.wav

Level Design

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1. Pirate Island: The area that the pirates go to buy items from the Shop, Customize the Crewmembers, and access the Ship Inventory/Level Selection screen. (CC0)
2. Clam Chowder Island: Room 1 (first entering the shore) (CC0)
3. Clam Chowder Island: Room 2 (middle of the shore) (CC0)
4. Clam Chowder Island: Room 3 (entering the grassy area) (CC0)
5. Lost Forest: Room 1 (first entering the forest) (CC0)
6. Lost Forest: Room 2 (middle of the forest) (CC0)
7. Lost Forest: Room 3 (middle of the forest) (CC0)
8. Tiki Woods: Room 1 (middle of the forest) (CC0)
9. Tiki Woods: Room 2 (middle of the forest) (CC0)
10. Tiki Woods: Room 3 (exiting the forest) (CC0)
11. Krusty Shores: Room 1 (middle of the forest to the shoreline) (CC0)
12. Krusty Shores: Room 2 (entering of the shoreline) (CC0)
13. Krusty Shores: Room 3 (the shoreline to the boat) (CC0)
14. No Face's Pirate Ship: Room 1 (entering the boat) (CC0)
15. No Face's Pirate Ship: Room 2 (inside the boat) (CC0)
16. No Face's Pirate Ship: Room 3 (inside the boat) (CC0)
17. No Face's Pirate Ship: Room 4 (inside the boat) (CC0)
18. No Face's Pirate Ship: Room 5 (inside the boat, end) (CC0)
19. Ghastly Coast: Room 1 (entering the spooky coast) (Craftpix License)
20. Ghastly Coast: Room 2 (along the spooky coast heading to a cave) (Craftpix License)
21. Ghastly Coast: Room 3 (entrance to the cave) (Craftpix License)
22. Fruitful Highlands: Room 1 (beginning of the spooky cave) (Craftpix License)
23. Fruitful Highlands: Room 2 (inside the spooky cave) (Craftpix License)
24. Fruitful Highlands: Room 3 (inside the spooky cave) (Craftpix License)
25. Nocturnal Cavern: Room 1 (inside the spooky cave) (Craftpix License)
26. Nocturnal Cavern: Room 2 (inside the spooky cave) (Craftpix License)
27. Nocturnal Cavern: Room 3 (inside the spooky cave) (Craftpix License)
28. Fizzy Hollow: Room 1 (inside the spooky cave) (Craftpix License)
29. Fizzy Hollow: Room 2 (inside the spooky cave approaching the end of the cave) (Craftpix License)
30. Fizzy Hollow: Room 3 (inside the spooky cave entering the final ghost boat) (Craftpix License)
31. Rainbowbeard's Ship: Room 1 (entering the starboard of the spooky ship) (CC0)
32. Rainbowbeard's Ship: Room 2 (inside the spooky ship) (CC0)
33. Rainbowbeard's Ship: Room 3 (the final part of the spooky ship) (CC0)



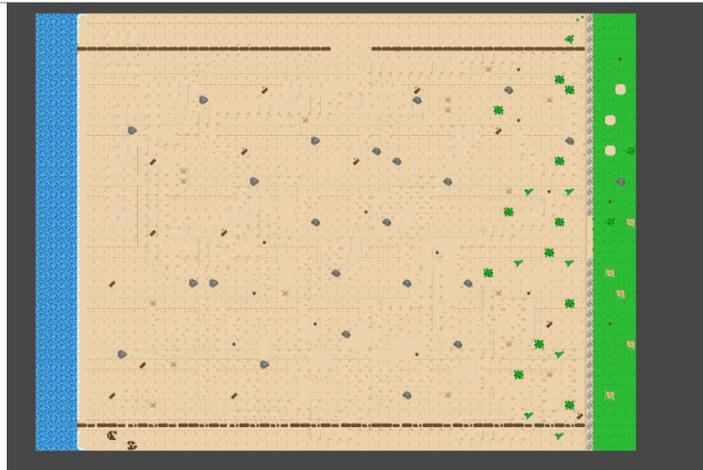
Pirate Island

Figure 1



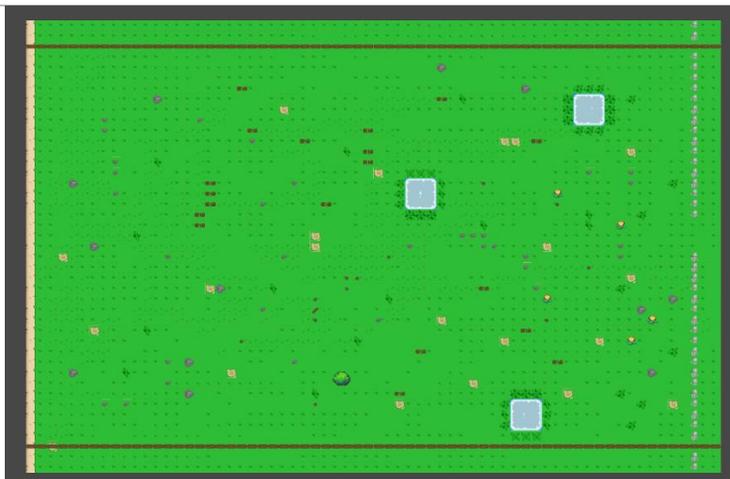
Clam Chowder Island: Room 1

Figure 2



Clam Chowder Island: Room 2

Figure 3



Clam Chowder Island: Room 3

Figure 4



Lost Forest: Room 1

Figure 5



Lost Forest: Room 2

Figure 6



Lost Forest: Room 3

Figure 7



Tiki Woods: Room 1

Figure 8



Tiki Woods: Room 2

Figure 9



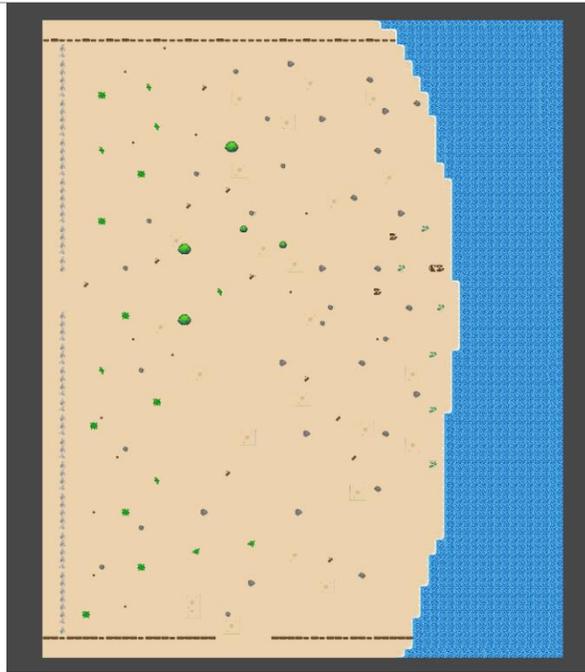
Tiki Woods: Room 3

Figure 10



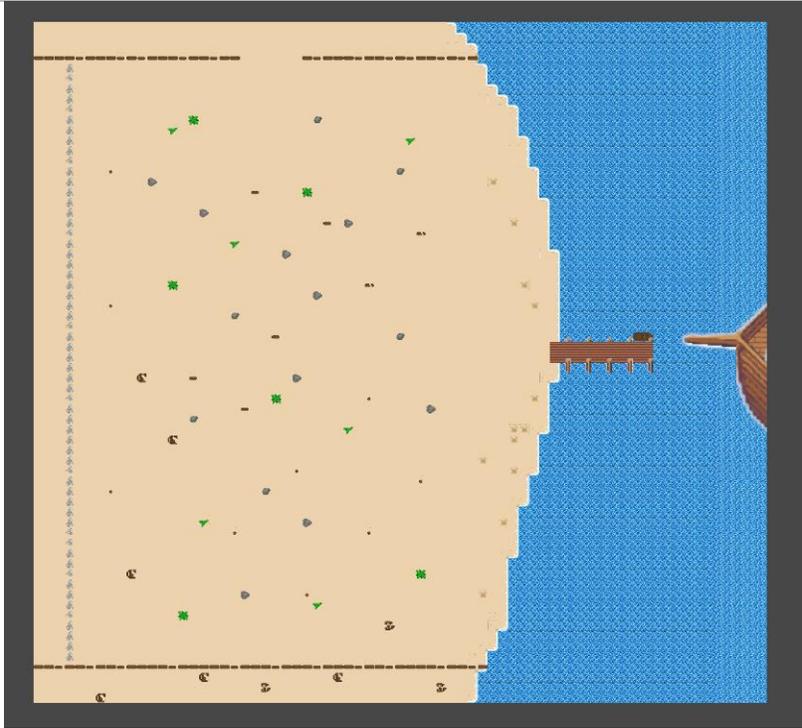
Krusty Shores: Room 1

Figure 11



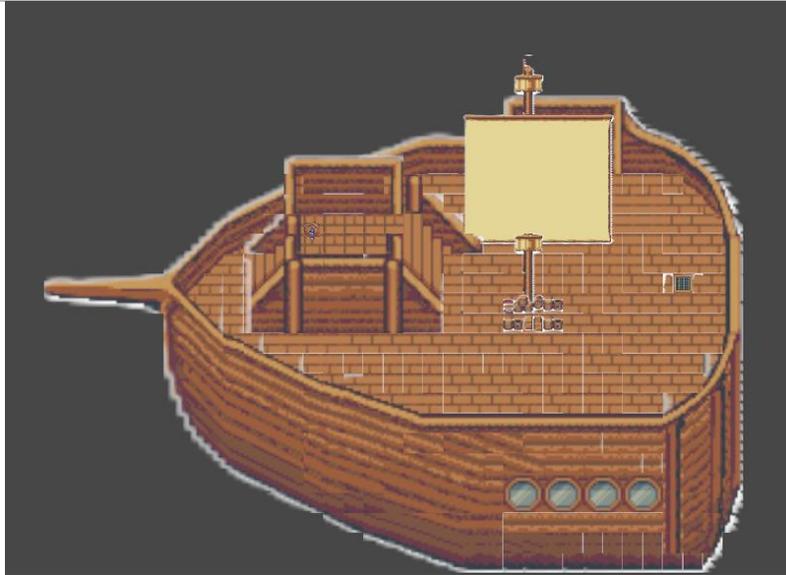
Krusty Shores: Room 2

Figure 12



Krusty Shores: Room 3

Figure 13



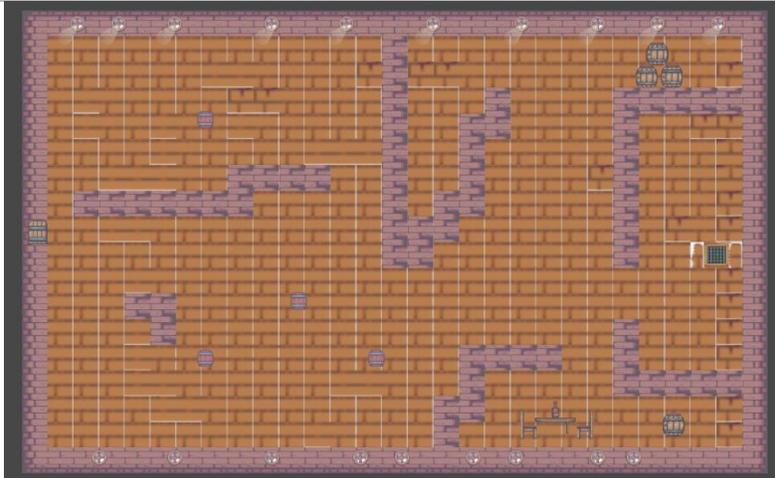
No Face's Pirate Ship: Room 1

Figure 14



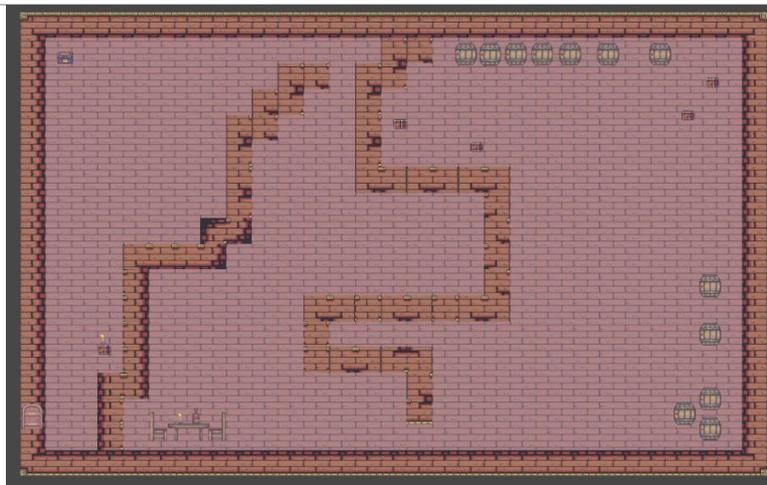
No Face's Pirate Ship: Room 2

Figure 15



No Face's Pirate Ship: Room 3

Figure 16



No Face's Pirate Ship: Room 4

Figure 17



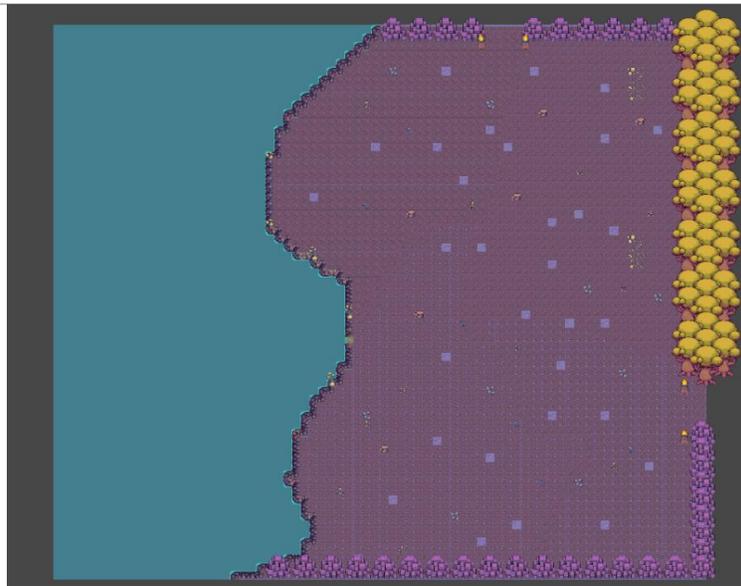
No Face's Pirate Ship: Room 5

Figure 18



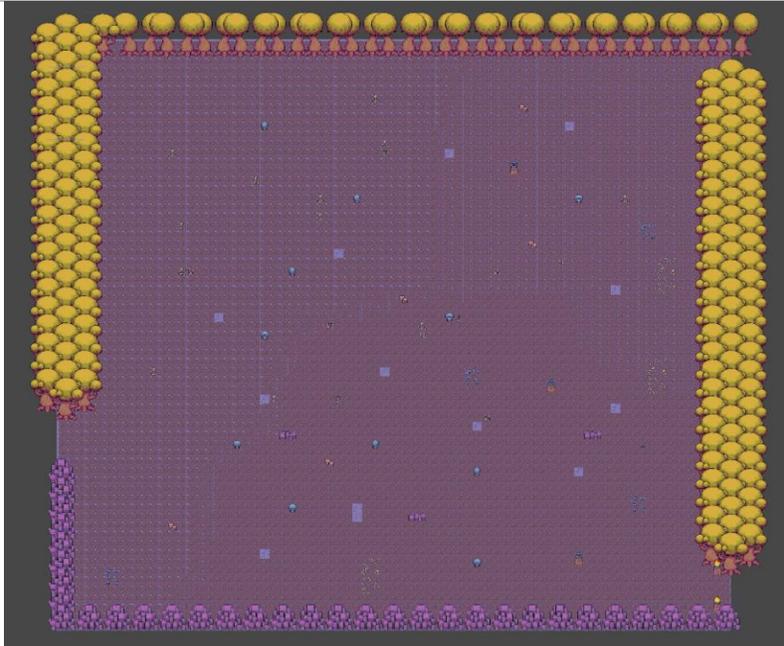
Ghastly Coast: Room 1

Figure 19



Ghastly Coast: Room 2

Figure 20



Ghostly Coast: Room 3

Figure 21



Fruitful Highlands: Room 1

Figure 22



Fruitful Highlands: Room 2

Figure 23



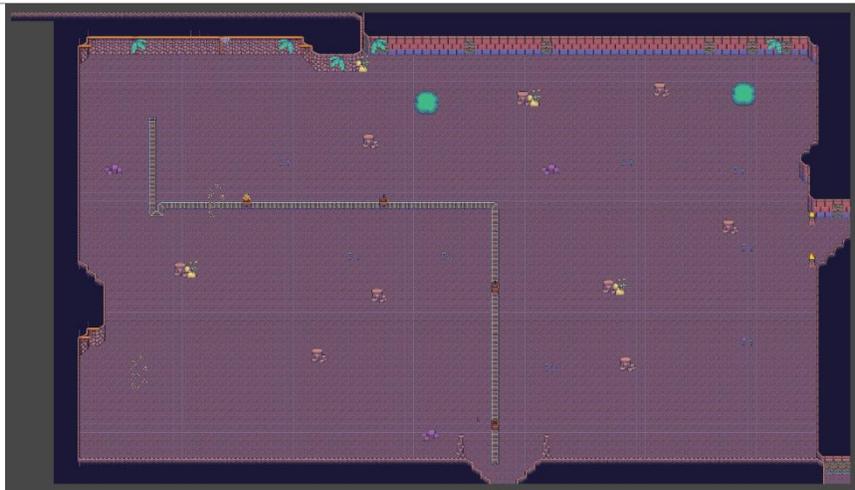
Fruitful Highlands: Room 3

Figure 24



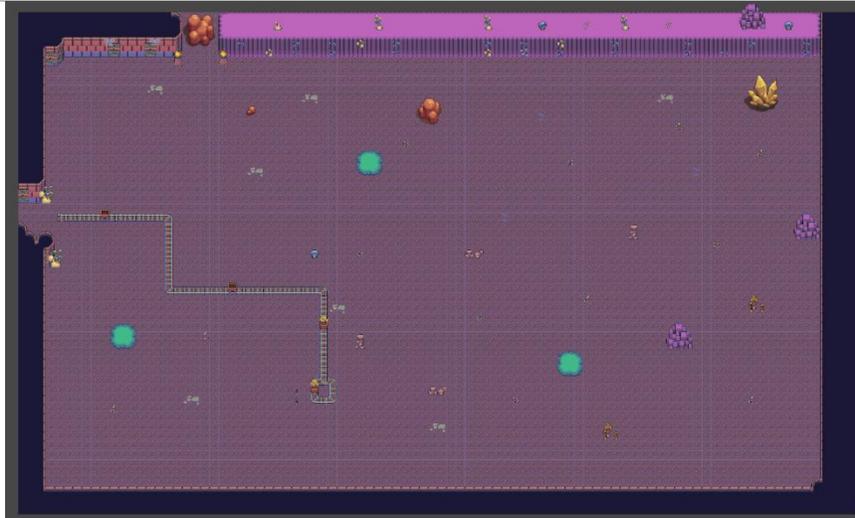
Nocturnal Cavern: Room 1

Figure 25



Nocturnal Cavern: Room 2

Figure 26



Nocturnal Cavern: Room 3

Figure 27



Fizzy Hollow: Room 1

Figure 28



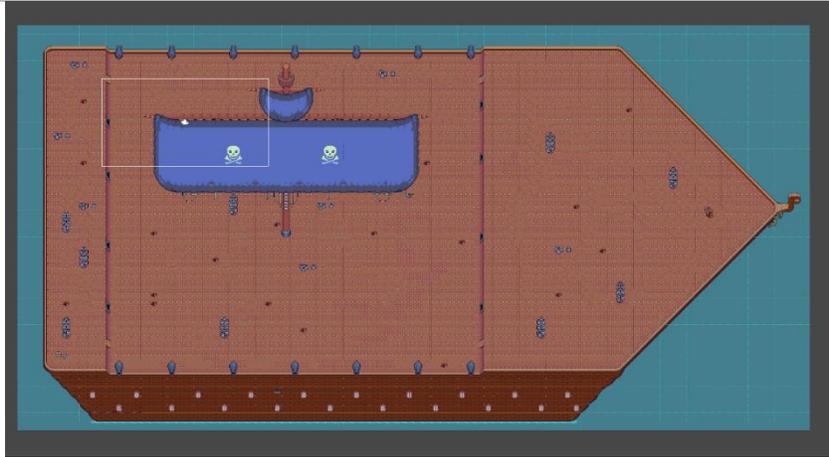
Fizzy Hollow: Room 2

Figure 29



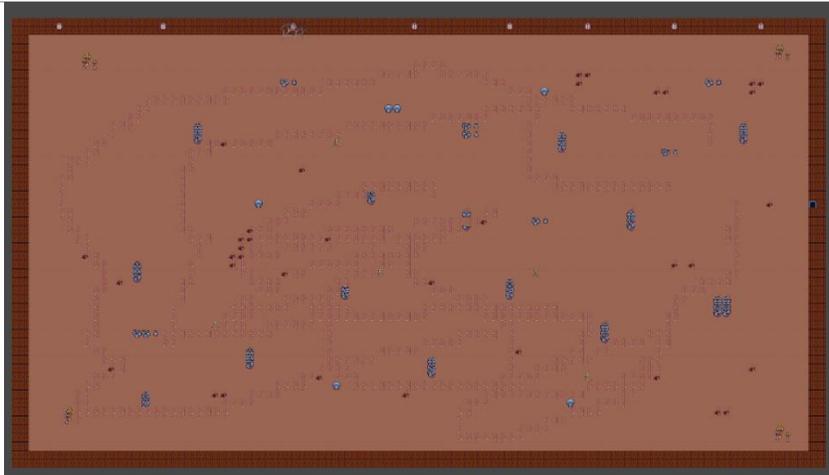
Fizzy Hollow: Room 3

Figure 30



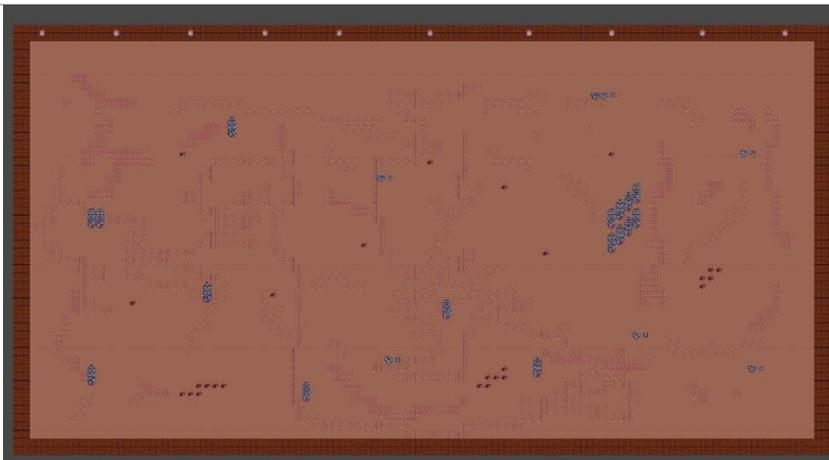
Rainbowbeard's Ship: Room 1

Figure 31



Rainbowbeard's Ship: Room 2

Figure 32



Rainbowbeard's Ship: Room 3

Figure 33

Level Design (Background Items)

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1. Barrel Item used in Map designs. (CC0)
2. Barrel Item used in Map designs. (CC0)
3. Door Item used in Map Designs. (CC0)
4. Door Item used in Map Designs. (CC0)
5. Bottle that is laid flat for puzzle levels. (CC0)
6. Bottle that is laid up for puzzle levels. (CC0)
7. A Green Bottle that is used with a Red Bottle for puzzle purposes. (CC0)
8. A Red Bottle that is used with a Green Bottle for puzzle purposes. (CC0)
9. A Candle that is used for decorative purposes in level designs. (CC0)
10. A Ship Helm used in Map designs. (CC0)
11. A Ship Window used in Map designs. (CC0)
12. A Chair used in Map Designs. (CC0)
13. A Table used in Map Designs. (CC0)

 barrel1.png Figure 1		 barrel2.png Figure 2		
 door1.png Figure 3		 door2.png Figure 4		
 bottle_down.png Figure 5	 bottle_up.png Figure 6	 green_bottle.png Figure 7	 red_bottle.png Figure 8	 candle.png Figure 9
 ship_helm.png Figure 10	 ship_window.png Figure 11		 chair.png Figure 12	 table.png Figure 13

Level Design (Texture Sets)

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1. Island textures for the tiling of the Island Maps (Level 1, 4) (CC0)
2. Jungle textures for the tiling of the Island Maps (Level 2 □ 4) (Craftpix License).
3. Ship textures for the tiling of the Ship Maps (Level 5) (CC0)
4. Ship textures for the tiling of the Maps that use Ships (Level 5, Pirate Island) (CC0)
5. Ship textures for the tiling of the Ship Maps (Level 5) (CC0)
6. Forest Textures for the tiling of the Forest/Jungle/Spooky Maps (Level 2, Level 7, Pirate Island) (Craftpix License).
7. Jungle textures for the tiling of the Island Maps (Level 2 □ 4) (CC0)
8. Spooky Water textures for the tiling of Spooky Maps (Level 8 □ 9) (Craftpix License).
9. Spooky Ship textures for the tiling of Final Level (Level 10) (CC0)
10. Cave Textures used for the tiling of Spooky Cave Levels (Level 7 □ 9) (CC0)
11. Enchanted Textures used for the tiling of Spooky Cave Levels (Level 7 □ 9) (Craftpix License).





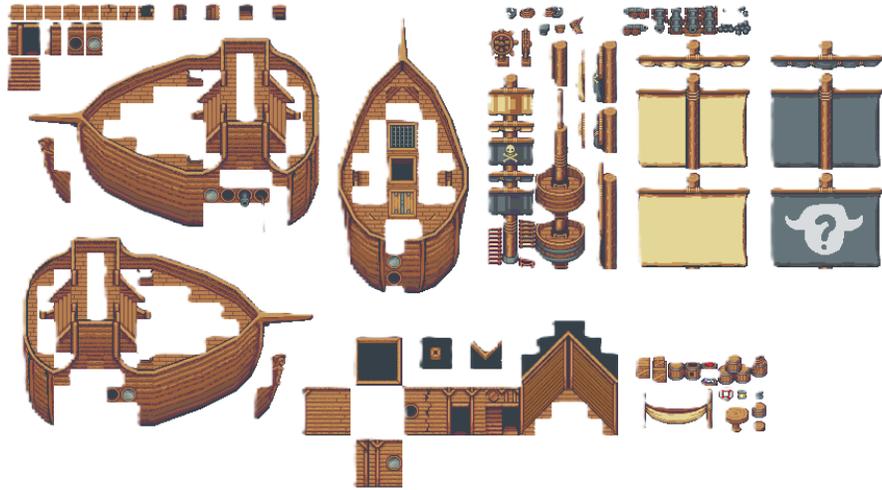
jungle_big.png

Figure 2



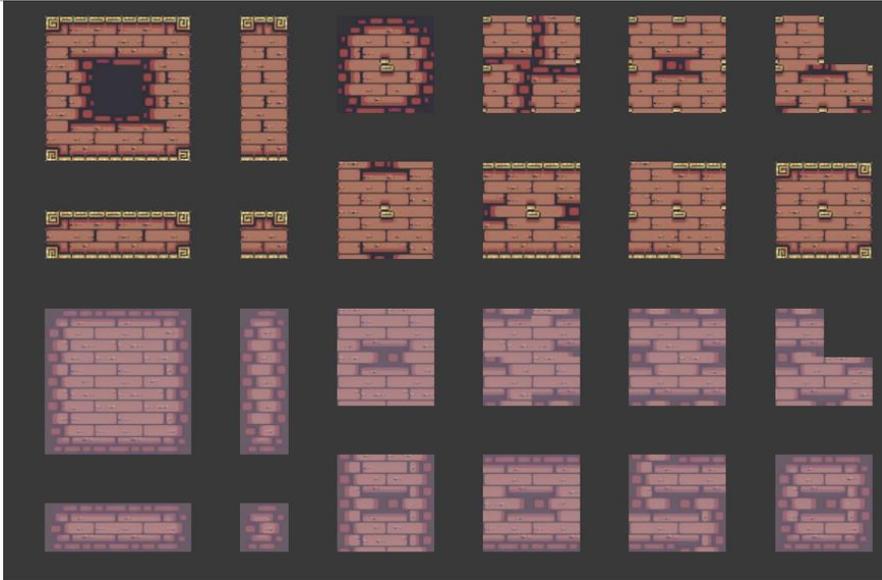
ship_big.png

Figure 3



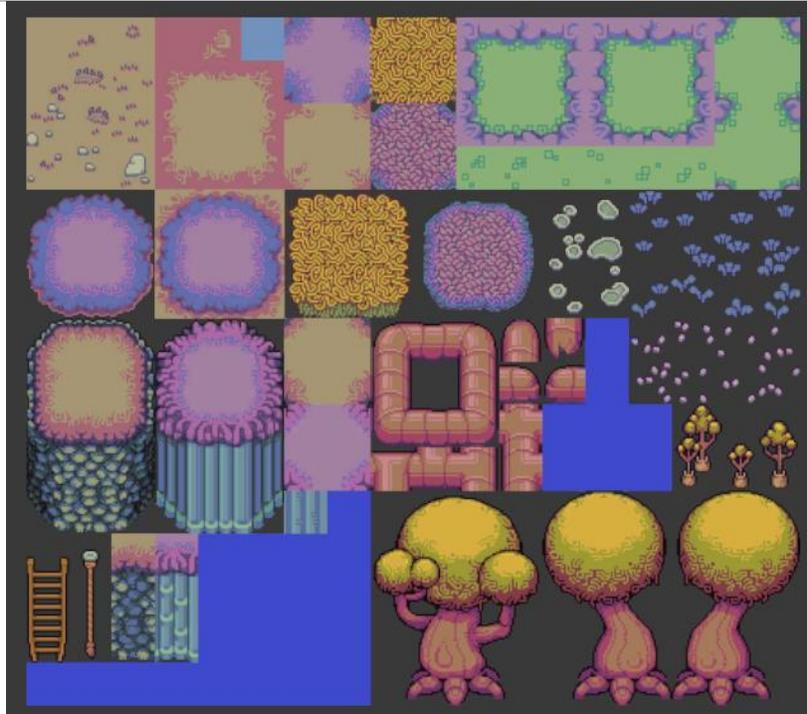
ship_small.png

Figure 4



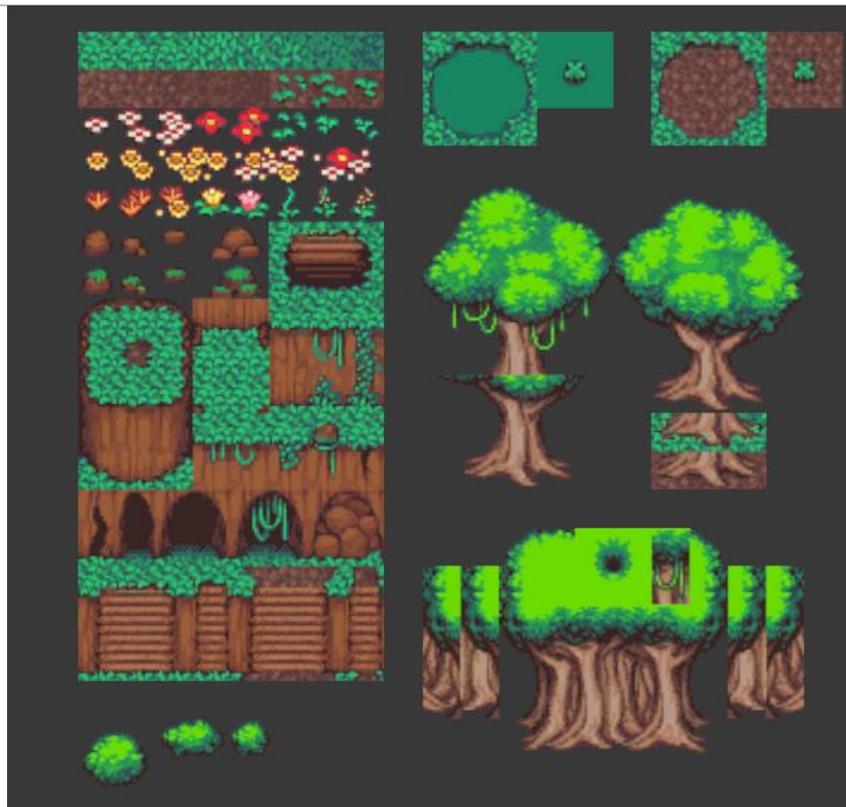
ship_rooms_tiles.png

Figure 5



spooky_forest.png

Figure 6



jungle_big.png

Figure 7



spooky_objects.png

Figure 11

Testing

User Testing

Competitive, cooperative, play based on skill, experience, change, whimsical play, role-playing, expressive play, simulation-based play

Sea Scoundrels consists of co-operative, skill-based, role-playing, and simulation-based play. The co-operative

During the testing process, a sample of 4 testers were used and introduced to the game without any prior knowledge of how it works/what it is. The set of 8 questions that were asked of these users are present within the Standardized Feedback Form as follows...

Sea Scoundrels Questionnaire	
1	What was your overall experience of the game? Any comments?
2	Did you find the game to be overwhelming?
3	Do you have any suggestions about gameplay or the game itself?
4	Was there anything in the game that left you confused or needed clarification?
5	How did you find the controls and mechanics of the game?
6	How did you feel about the stylistic choices of the game such as images, animation, music/sfx?
7	Did you run into any bugs/glitches while playing this game?
8	Were there any features that you liked? Any that you didn't like?
9	Was the difficulty level for this game appropriate? Did you feel challenged while playing?
10	Would you consider playing this game again?

The list of questions were deliberately chosen such that they could target some of the major concerns that we had. Most concern was held with bugs/glitches, but beyond that, it was desired to know how users felt about the atmosphere, which mostly covers the stylistic choices, game mechanics, and anything that the user may have been unclear about.

Testers were told nothing of how the game worked or instructions of what to do. The idea was to get testers to learn as they interacted with the scene. After doing so, here is how testers responded...

Tester 1

Sea Scoundrels Questionnaire	
1	<u>What was your overall experience of the game? Any comments?</u> I really liked the experience. It was good and thought out.
2	<u>Did you find the game to be overwhelming?</u> One issue that I noticed is mobs were difficult to kill and made it a bit overwhelming. They either have too much reach or my hitbox was too big.
3	<u>Do you have any suggestions about gameplay or the game itself?</u> Please fix the hitboxes on mobs. They hit me without even coming close to physical contact.
4	<u>Was there anything in the game that left you confused or needed clarification?</u> On the billboard, it said that items would be lost upon death, but they weren't. The shop isn't clear enough.
5	<u>How did you find the controls and mechanics of the game?</u> Good.
6	<u>How did you feel about the stylistic choices of the game such as images, animation, music/sfx?</u> Looked and sounded good.
7	<u>Did you run into any bugs/glitches while playing this game?</u> No.
8	<u>Were there any features that you liked? Any that you didn't like?</u> I like how mobs dropped loot.
9	<u>Was the difficulty level for this game appropriate? Did you feel challenged while playing?</u> I felt fairly challenged while playing and died multiple times.
10	<u>Would you consider playing this game again?</u> Yes.

Upon Tester 1's response, there were a few adjustments made to the game's physical mechanics, and some assets were changed around. Firstly,

1. The swipe radius of the melee weapons was reduced. The radius was too large at times and would swing over enemies.
2. The hitboxes were reduced for several of the enemies.
3. The sign that indicates inventory was lost upon losing the level was removed.

Tester 2

Sea Scoundrels Questionnaire	
1	<u>What was your overall experience of the game? Any comments?</u> I was confused at the beginning because I didn't know where the exit was or the entrance.
2	<u>Did you find the game to be overwhelming?</u> No.
3	<u>Do you have any suggestions about gameplay or the game itself?</u> Revealing where the entrance and exit area are. Making the bullets a bit larger, I can't see them at times.
4	<u>Was there anything in the game that left you confused or needed clarification?</u> Some of the background objects like boxes I thought were openable. I think having clearer indication will help make people understand what all of the objects do.
5	<u>How did you find the controls and mechanics of the game?</u> They were good I personally enjoyed it.
6	<u>How did you feel about the stylistic choices of the game such as images, animation, music/sfx?</u> They were good, I really enjoyed the art work!
7	<u>Did you run into any bugs/glitches while playing this game?</u> No.
8	<u>Were there any features that you liked? Any that you didn't like?</u> I liked the sword swinging animation.
9	<u>Was the difficulty level for this game appropriate? Did you feel challenged while playing?</u> It was appropriate for the amount of levels in the game.

10	<u>Would you consider playing this game again?</u> I would like to play the full game and finish it.
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Upon Tester 2's response, two adjustments were made to the game...

1. Some of the background objects were slightly transparentized or faded to be clearer indication of background elements.
2. Projectiles that are shot from enemies or bosses were increased in size and changed in colour for clearer indication from the background.

Tester 3

Sea Scoundrels Questionnaire	
1	<u>What was your overall experience of the game? Any comments?</u> It was fun and someone challenging.
2	<u>Did you find the game to be overwhelming?</u> No.
3	<u>Do you have any suggestions about gameplay or the game itself?</u> The obstacles were not properly identified on the map. The coin pick up should be clearer, the bullets should disappear after exiting walls.
4	<u>Was there anything in the game that left you confused or needed clarification?</u> I needed more clarification about the power of the weapons.
5	<u>How did you find the controls and mechanics of the game?</u> It functioned well together.
6	<u>How did you feel about the stylistic choices of the game such as images, animation, music/sfx?</u> They were well sounding.
7	<u>Did you run into any bugs/glitches while playing this game?</u> None.
8	<u>Were there any features that you liked? Any that you didn't like?</u> I like the gun and bullets movement, it all looked great.

9	<u>Was the difficulty level for this game appropriate? Did you feel challenged while playing?</u> It was fair.
10	<u>Would you consider playing this game again?</u> Yes I want to play everything.

Upon the response of Tester 3, one adjustment was made to the game...

1. The coin drop objects, weapons, and clothing items were made larger in size. When collected, the coins will increase in size and the clothing/weapon items will decrease in size as part of an animation to indicate collection of the items.

User Documentation

Main Menu

The main menu is the first screen shown to the player upon starting Sea Scoundrels.



Main Menu Directory

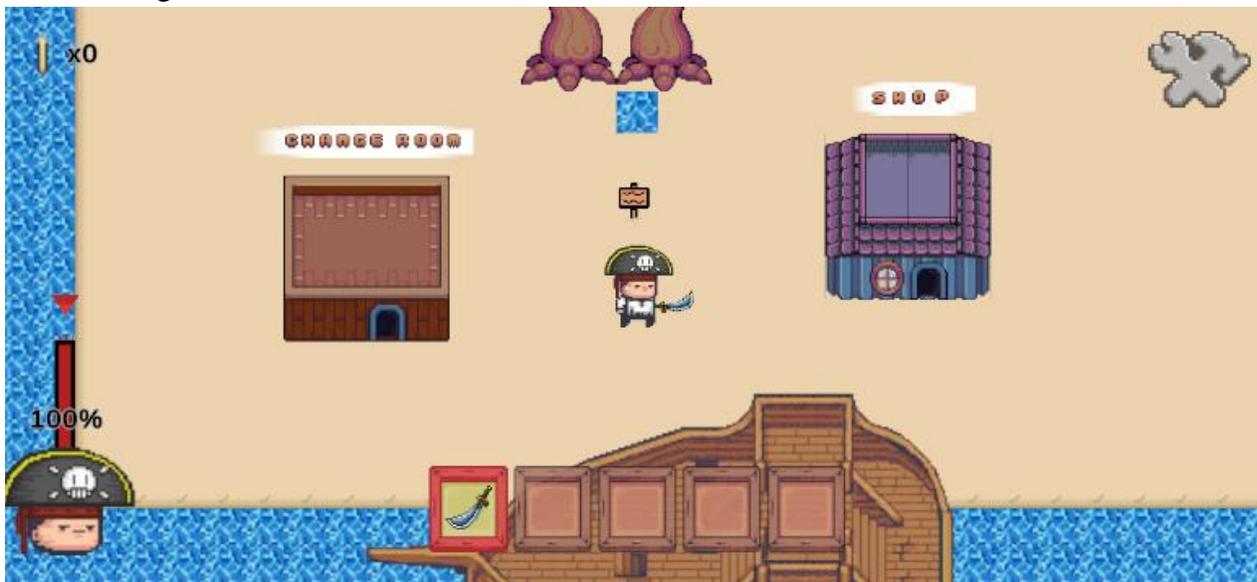
- The *PLAY* button will initiate the start of the game.
- The *CREDITS* button will launch the documentation page for the Sea Scoundrels application.
- The *EXIT GAME* button will close the application.
- The *RESET GAME* button will generate a popup...



- Clicking *YES* will clear all save data and close the application.
- Clicking *NO* will close the popup.

Pirate Island

This is the main area where all transactions, character customization, accessing ship inventory, and selecting levels occurs.



Changing Clothes

1. Enter the CHANGE ROOM on Pirate Island to trigger the Character Customization screen.



2. From here, the player can...



Select a crewmember to change



- By selecting a crewmember's head, the crewmember's outfit will appear.

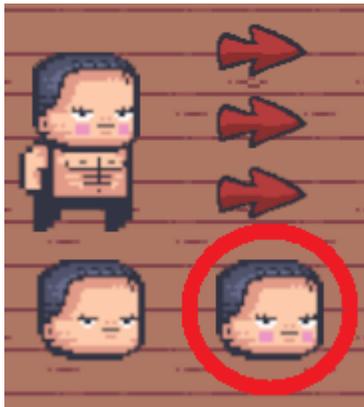
Changing a crewmember's clothes



- By selecting an arrow, a selected crewmember's outfit will change.
- NOTE: Be careful, if you select an item that hasn't been unlocked, you won't be able to continue (denoted with black shadowing).



Changing a crewmember's head



- By selecting a crewmember's head, the crewmember's new head will appear.

To finish changing clothes



- Once you are satisfied with your crewmember's looks, click the thumbs up icon to exit the change room.

Buying Items

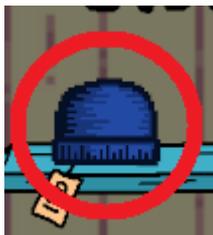
1. Enter the SHOP on Pirate Island to trigger the Shop screen.



2. From here, the player can...



Buy a clothing item



- The Toque or Guy Fawkes mask are 2 purchasable items in the game. They each cost 150 gold.

Buy a crewmember



- The Crewmember is purchasable once from the shop. It costs 300 gold.

Buy a bomb or rum



- Bombs or Rum are single-use items that can be bought for 25 gold. When they are purchased, they are added to ship inventory.

Buying Ship Inventory



- Buying ship inventory allows you to store more items in game! There are 15 ship inventory slots available.
- Buying a new ship inventory slot will cost 15 times the amount of gold of the previous slot!

To finish buying items



- Once finished at the shop, click the thumbs up icon to exit the shop.

Accessing Ship Inventory

1. Enter the area beside the pirate ship like so...



2. Doing so will prompt the ship inventory screen as well as the level selection screen.



Switching to a different crewmember's inventory



- By clicking on a crewmember's head, the hot bar inventory (brown slots) will update to that specific crewmember's inventory.

Adding items from ship inventory to crewmember inventory



- By clicking on an item from the ship's inventory while having a slot selected from the crewmember inventory, the item will be added to that slot in that crewmember's inventory.

Adding items from crewmember inventory to ship inventory



- By clicking on an item from the ship's inventory while having a slot selected from the crewmember inventory and an item is not in that active slot, the item will be added to the crewmember's inventory.

Selecting a Level

1. Enter the area beside the pirate ship like so...



2. Doing so will prompt the ship inventory screen as well as the level selection screen.



Picking a level



- By clicking on a level number, it will load the level. Level's that aren't unlocked yet will be faded dark yellow.

Settings Menu



1. The Settings menu is accessible at any point in the game except for the main menu and can be accessed by clicking the icon here. When clicked, the Settings Menu will appear.



Changing audio level



- By clicking on the audio icon, the audio will toggle between off to low volume, medium volume, and high volume.

Changing keyboard controls



- By clicking on a specific control, the player can adjust the keyboard inputs. For example...



Quitting the game



- By clicking on “Exit Game”, the game will save your data and close the application.

NOTE: The game auto saves by default.

Exiting the Settings Menu



- By clicking on the exit icon in the top right corner, the Settings Menu will close.

Crewmember Inventory

1. The crewmember inventory looks like this.



- The crewmember inventory has items available that the crewmember has accessed. Users can toggle between inventory by clicking on an inventory slot (the red and yellow highlight will indicate which inventory slot is currently active).

Collecting items

- This can be accomplished simply by walking over items.

Dropping items

- If a user wants to drop an item, simply right click on the item to have it leave that crewmember's inventory.



Gold

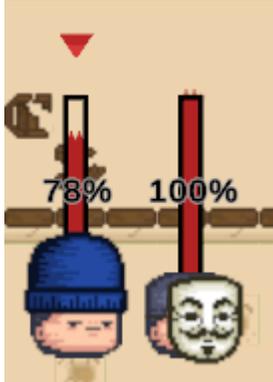
- Gold is located at the top left of the screen.



- It is used solely for purchasing items from the shop. Gold is obtained by killing enemies.

Crewmember Display

1. The crewmember display looks like this.



- There are 4 slots available for 4 possible crewmembers.
 - The health bar is the current health of a crewmember.
 - The triangle above the health bar indicates the currently active crewmember. To switch between crewmembers, simply click on the face of another one.
- NOTE: if all crewmembers reach 0 health, a Game Over screen will occur.

Accessing the Info Board

1. The Info Board is a bill board that is available on Pirate Island. Clicking on it will trigger an instruction screen for rules of the game and how to play.



Level Gameplay

1. Once a level is selected, the character will be placed at the beginning of the level.



Attacking Enemies

- Depending on the item equipped in your inventory, pressing the preset or default “Attack” key (default is Space bar) will cause the item held to attack the enemy.



Crewmember's Attacking Enemies

- Crewmembers that travel with the lead character will target enemies if an enemy enters their radius.



- If the item currently equipped by the crewmember is not meant to attack the crewmember, the crewmember will attempt to switch to a slot where an attackable item is present.
NOTE: bombs and rum are not considered “attackable” items because they have a one time use and cost money.

Attacking Bosses

- When the team encounters a boss, a Boss Overlay will appear.



- This overlay indicates the current health of a boss that is being targeted. Once a boss is killed, the level is complete.

Triggering a Victory screen

- A Victory occurs when a boss is defeated or a crewmember is unlocked or a chest is revealed.



Triggering a Game Over screen

- A Game Over Screen occurs when all crewmember's health has reached 0.



Credits Page

APIs

No APIs were used in the development of this game.

Libraries/Frameworks

The libraries and frameworks are that of Unity Game Engine which was the primary source used to create all functionality within this product.

<https://unity.com/products/unity-personal>

Source Control

Unity Version Control (built into Unity Game Engine) and Plastic SCM were used for version control.

<https://www.plasticscm.com/download>

Resources/Assets

NOTE: the specific licenses used for each asset are listed via the Prototypes section.

CCO

- some elements in the game are licensed via the Creative Commons (CC0) license, which can be found here: <https://creativecommons.org/public-domain/cc0/>

Craftpix License

- Some images were acquired with Craftpix applicable license upon purchasing, which can be found here: <https://craftpix.net/file-licenses/> and denoted as (Craftpix License).

CC BY-SA 4.0 DEED License

- Some images were acquired with CC BY-SA 4.0 DEED (Attribution-ShareAlike 4.0 International). The creator of these images is: <https://lunarsignals.itch.io/viewpoint-overhead-fantasy-rainbow-pirates?download>, with the licensing information available at: <https://creativecommons.org/licenses/by-sa/4.0/>. And denoted as (BY-SA 4.0 DEED).

Project Proposal Sign-off

We grant approval to pursue the project as outlined in this document, including any additional requirements listed below*. Any changes made to the project that deviate from the presented information renders this approval void and the approval process must begin again.



Câi Filiault



Nick Sylvestre

* With the following additional requirements: