

Scurvy: User Manual

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ENGINEERING 100 SECTION 650: GAMING FOR THE GREATER GOOD

System Requirements

- Operating System: Windows XP or later / OS X Snow Leopard (10.6) or later.
- Processor: 2.0 GHz Intel Pentium or better.
- RAM: At least 1 GB of Random Access Memory must be installed.
- Python: Python 2.7 or later installed with PyGame 1.9.1 or later.

Installation Instructions

From File explorer:

1. Download the game files.
2. Extract the zip archive:
 - a. Right click > Extract Here
3. For Windows, double click the 'Scurvy.exe' executable.
4. For Mac, double click the 'Scurvy' executable.

From Command line:

1. Follow File Explorer instructions 1 - 2a to download and extract the archive.
2. Open a new Terminal (or Command Prompt) window with a bash shell.
3. Navigate to the project folder using the command: `$ cd Directory/Subdirectory/`
4. Use the command: `$ python main.py` to start the game.

Purpose Statement

The purpose of this user manual is to describe detailed instructions of menus and gameplay of Scurvy. A user will be able to read this document and know all the details of how to play the game.

Description of the Audience

Description of Audience - Scurvy is intended for children with Autism Spectrum Disorder (ASD) of the ages of 7-14 but kids that are older can enjoy it too. Our game is trying to improve collaboration and teamwork between two players. This user manual will be helpful for children with ASD to learn the concepts of the game before playing. Parents and instructors will be able to reference the manual if the child is struggling with understanding the game.

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Main Menu Module

Summary

The first page the user sees as soon as they start the game is the Main Menu Module. This is the 'root-menu' for all actions the user can perform.

In terms of the User Interface the Main Menu is relatively simple. It shows the game's logo, 'Scurvy', to the user and has a nice looking background and animations. For functionality, the Main Menu has 5 buttons that perform the action that their labels specify, as detailed below. These buttons include: Play, Instructions, Settings, Credits and Quit.

Detailed Information

Play Button

The play button, as the name suggests, allows users to setup their game and then begin playing the game. The users can select a number of preferences outlined in the Play Setup Module later in this document. Once the options have been selected the users will be taking to the actual game and will be playing.

Instructions Button

This button can be used to directly navigate to the tutorial video and a document with the instructions about the game. This button allows users to view content that will help them better understand the purpose of this game and how to play this game.

Settings Button

The settings button allows users to control a variety of system settings for the game. This includes things like which song to play in case they do not like a particular song, muting the volume and even the ability to enter a cheat code. The Settings Module has more details about this page.

Credits Button

The credits button shows a list of people who helped contribute to the game development and has a list of special thanks as well as links the source of any open sourced resources used for the game.

Quit Button

This is a simple button that allows the user to quickly close the game. On click, the game will dispose of any computer resources it has holds on and quit gracefully.

Prototype



Figure 1: This is a prototype of how the Main Menu could possibly look.
However, this is still a work in progress

Settings Module

Summary

The reason behind the settings in Scurvy is to allow customization for the user so that this game can be played by children along all facets of the ASD spectrum.

The settings module will be initialized to default settings when the game starts. There will be a button in the main menu that allows the user to access the settings module which will allow the user to change the music, change the volume, and enter cheat codes.

Detailed Information

Music Tab

There will be two different settings for background music which allow the user to toggle between two different songs. This gives children with varying severities of ASD the opportunity to adjust the music to their liking, or give them more of a challenge if the game becomes too easy for them. The volume setting will be utilized in conjunction with the music. This will allow the user to adjust the volume to make the game more enjoyable or difficult. They will be able to toggle the volume between on and off. This allows a child with severe ASD is given the opportunity to turn the music off so that they can enjoy the game without too much trouble.

Cheat Code Tab

The settings menu will also have an option for the user to enter cheat codes. There will be a specific tab to enter these codes. Once the code is entered, the game will recognize the code and initialize the game in a distinct way. Each cheat code has different effects and will be explained in more detail below. These cheat codes will help make the game easier or simply more interesting for the player.

Cheat Code	Effect
edward	This allows the user to start the game with a different ship/sprite image
manav	Entering this code gives the user a starting score of 1000. However, this will not change the difficulty of the game at all, and the user will still start at the beginning
evan	Sometimes, the user will just want to play for longer and this cheat code will allow for this. Entering "evan" will give the user additional health when they start playing
omkar	Since this game is based heavily on timed actions, we decided to add a cheat code that extends the amount of time the user has to complete the on screen command
chesney	This is the master of all codes. It has the functionality of all the codes above and allows the user to play for longer and get a higher score

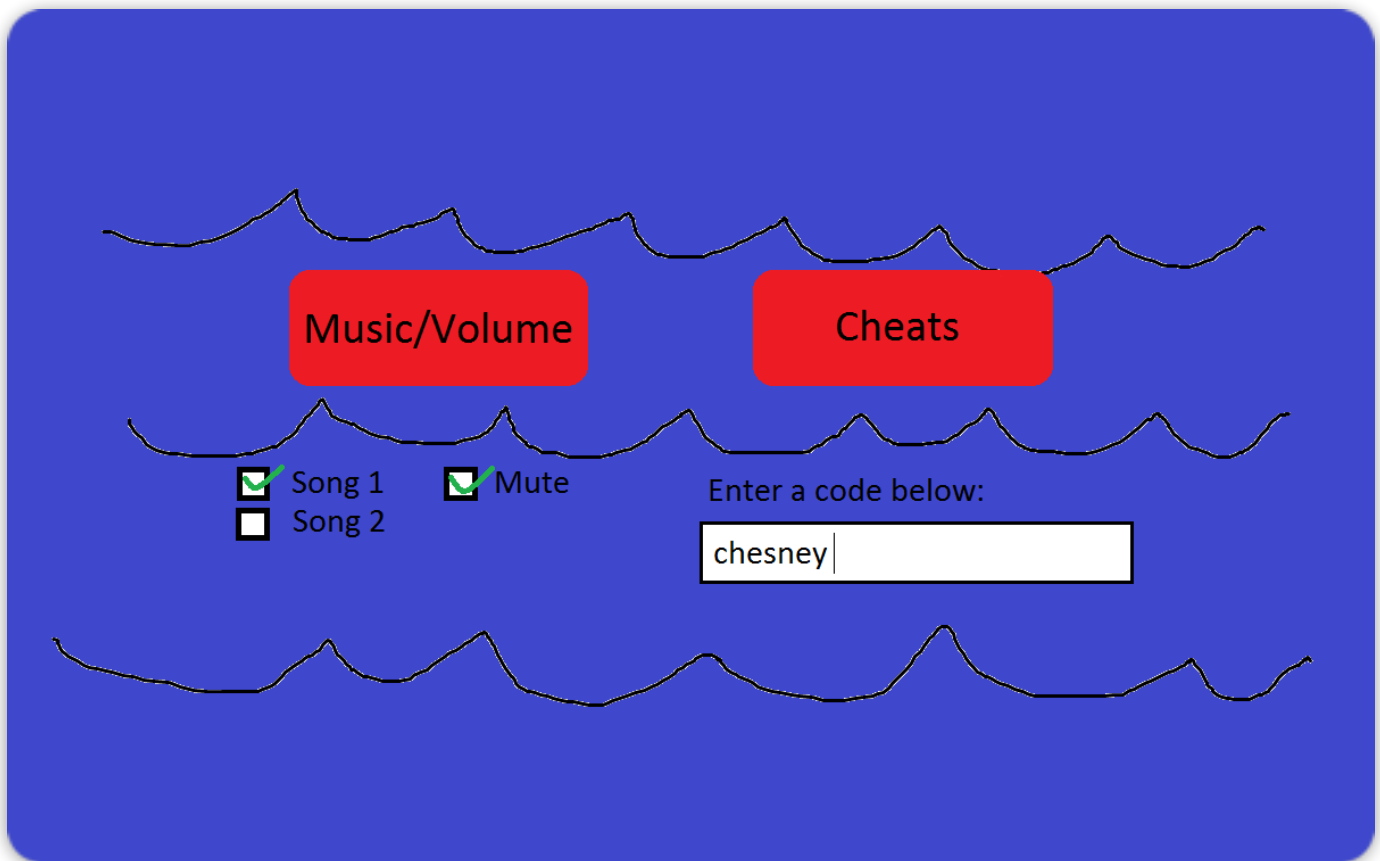
Prototype

Figure 2: The image above gives an idea of what our Settings Menu will look like. While this isn't what the final product will look like, it gives a template of how the layout will be. This screen allows the user to change music, change volume, and enter cheat codes. This allows the game to be more interactive and customizable for the player.

Game Play Setup Module

Summary

Once the play button is selected from the main menu, another screen will appear where the two players will be able to set up their game. They will be given the opportunity to choose a difficulty, type in their names, and customize the ship that they will be using to play Scurvy.

Detailed Information

Difficulty

The players will be given the option to choose between two difficulties: easy or hard. The easy difficulty will start with a quick tutorial on how to play the game. It will start by giving each player one command to finish before the timer runs out and progressively get harder. The hard difficulty will not start with the quick tutorial as it is assumed that the players are experienced with the game. Each player will start with multiple commands to finish and will need to collaborate before the timer runs out.

Names Customization

Before the two players start their game, they will need to input their names. This will make Scurvy feel more personal to the players and the names will automatically be put into the high score when the game is finished.

Visuals Customization

The color of the ship's flag will be able to be changed from the play setup screen. The players will be able to choose between a yellow, blue, or classic pirate flag. This will not affect the gameplay in any way, but will add a personal touch to the ship.

Prototype

Difficulty

Names

Flag Color

☒ Easy

☐ Hard

Player 1 Name:

Player 2 Name:

☐ Blue

☐ Yellow

☒ Classic

Figure 3: The image above gives an idea of what our Play Setup Module would look like. While this isn't what the final product will look like, it gives a template of how the layout will be. This screen allows the user to choose their difficulty, names and customize the appearance of the game.

Basic Level Module

Summary

The basic level consists of rock and iceberg obstacles that create a vertical wall with a randomly generated gap. The two players must correctly complete the instruction in the given time to successfully navigate through the gap. If the players fail to complete the instructions in the given time or don't correctly execute the instructions, the ship will collide with the obstacle and lose health..

Detailed Information

Controls

The keyboard will be split in 2 halves for the purpose of this game. The keys '5', 'T', 'G', 'B', and everything to the left will make up the left player's controls and the keys '6', 'Y', 'H', 'N', and everything to the right will make up the right player's controls. Because some keyboards do not have a dedicated num-pad, the num-pad will not be utilized. Each key maps to an action which the players must complete.

Task Screens

The top half of the game screen will display the obstacles, enemies, and a top view of the players' pirate ship. Underneath, each player will have his or her own task view where instructions are displayed one after the other. The timer below dictates how much time they have to complete the action.

Timer

The game is equally based on the accurate execution of instructions and doing so in a timely manner. Each player will have a timer displayed on their screen that represents how long they have to complete the task. Both timers are synchronized which means the players have to use teamwork to advance together; one player cannot receive the next instruction until both players complete the current set of instructions. The ship will also move towards the obstacle at a rate corresponding to the timer such that at 0s remaining, if the actions aren't completed, the ship will collide with the obstacle and lose health.

Prototypes



Figure 4: The left player will utilize the blue key, while the right player will use the red keys.

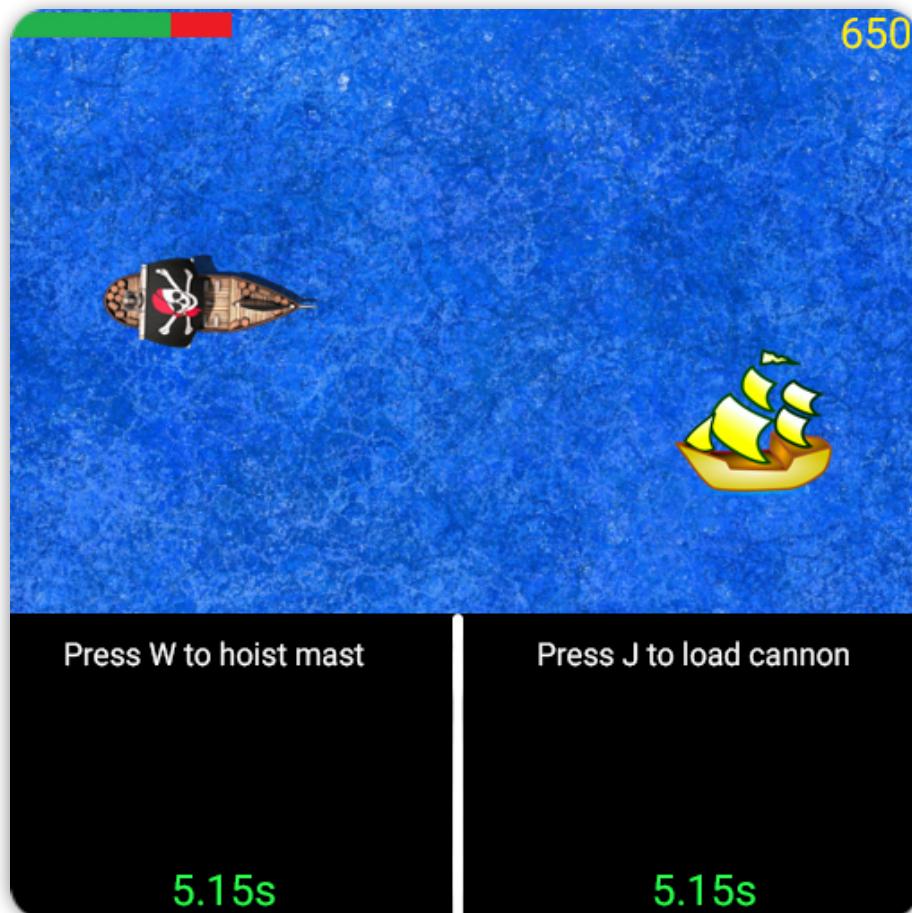


Figure 5: A sample rock obstacle is shown. Each player has a task view on the bottom with synchronized timers showing them how much time they have left to complete the action.

Overall Gameplay Module

Summary

Scurvy has a few major components. Each player must complete his or her tasks/instructions within the given amount of time in order to overcome various obstacles as well as enemies. As players advance, their score will increase based on the obstacle/enemy that was defeated. Furthermore, as your score increases, the instructions will increase in complexity and the time for each task will reduce. The object of the game is to sail for as long as possible, and thus maximize your score.

Detailed Information

Health

Each time the players are unable to overcome an obstacle or defeat an enemy, they will lose a portion of the ship's health, based on the obstacle or enemy. The health is displayed on the top left part of the screen and once the health reaches 0, the ship will sink and the game will end. There is no way to gain health, so health that is lost is gone forever.

Score

On the top right of the screen, the players' score will be displayed. The score is dependent on the type of obstacle/enemy that was defeated. Rocks and icebergs will have lower point values than enemy pirate ships and kraken.

Note: Certain cheat codes may alter the behavior of these gameplay feature and change the strategies involved in succeeding.

Enemies

Along with static or stationary obstacles such as boulder formations and icebergs, there will be enemy ship and kraken. Enemy ships and kraken will be harder to defeat and may even attack the player's ship as the difficulty and progression increases. These are purposely designed to be more difficult challenges than the environment obstacles in order to add dynamic and exciting gameplay.

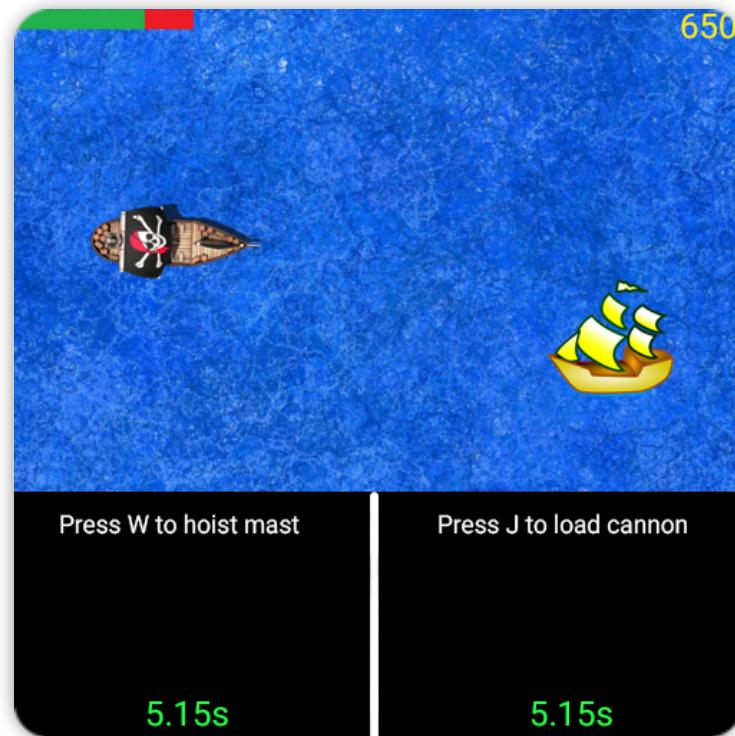
Prototypes

Figure 6: Health bar on the top left, and the score on the top right.

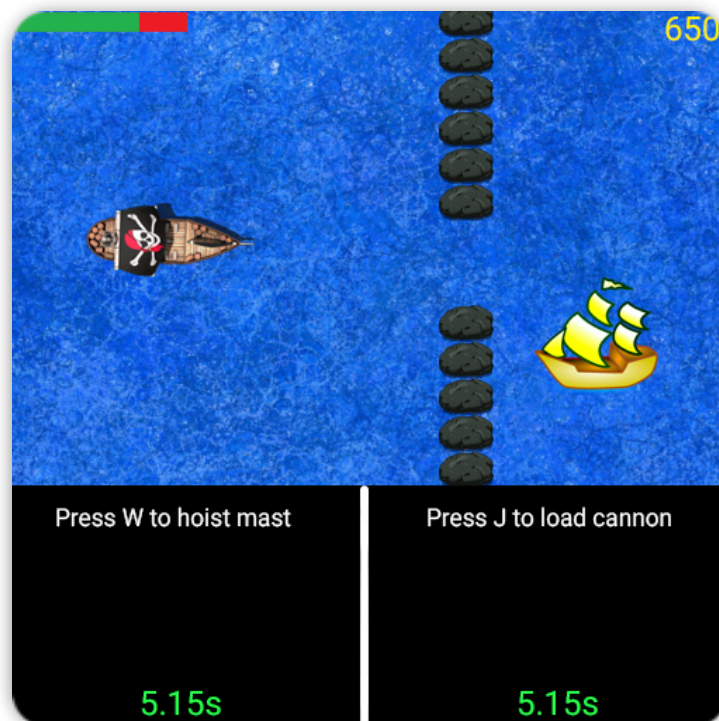


Figure 7: Multitude of obstacles and enemies. Enemy ship and rocks shown above.

Increasing Difficulty Module

Summary

This module describes how choosing a different difficulty level can affect the gameplay. Moreover, as users progress in the same difficulty the game becomes progressively more difficult. This ensures that the game is fun to play and that the users really benefit from playing the game more.

Detailed Information

Increasing Distractions

As the user plays on, the number of distractions and enemies increase. Distractions are in the form of sounds being played over the speakers. This will allow the user to get used to having conversations with distractions and socialize in that context. Further, they will develop a resistance to background noise and will improve their interpersonal skills. Moreover, they will be able to focus better because they need to get used to the increasing number of enemies that are appearing on the screen.

Instruction Complexity Algorithm

We have developed our own algorithm that determines the complexity of an instruction. Further, this algorithm assigns keystrokes to an instruction based on the key location and to whom the instruction is being shown. Therefore, as the game progresses the number of keystrokes to complete an instruction will increase and their placement on the keyboard will increasingly vary. The prototype shows one of the more complex instructions and keystroke combinations (however, do note things can get a lot more difficult).

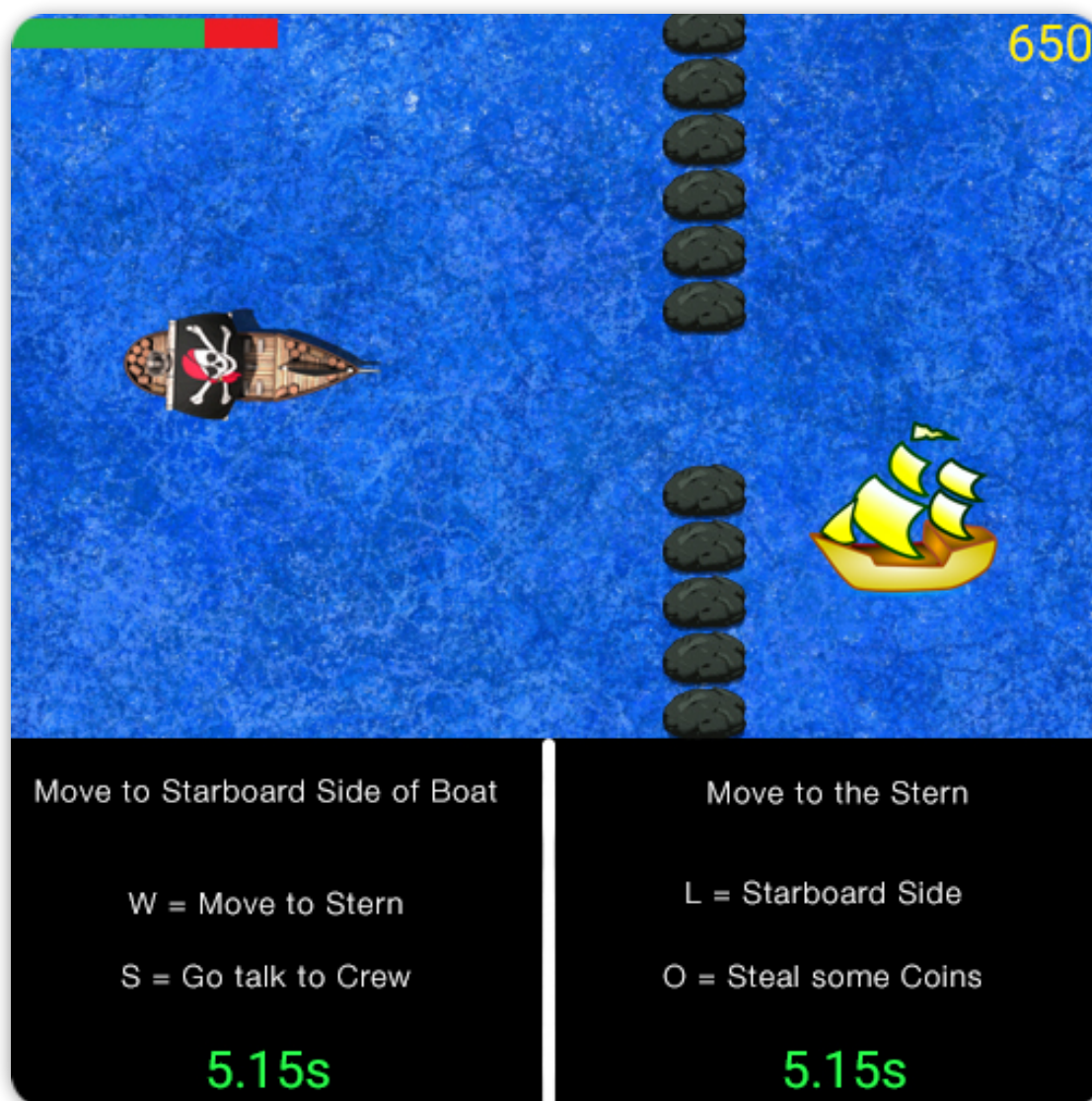
Prototype

Figure 8: This screen can be contrasted with Figure 5 to see the difference in complexity of the instructions and number of instructions.

Instructions And High Score Module

Instructions Summary

Instead of having the players read instruction before they play, our game will have a short tutorial before the game starts. A quick video will be shown that explains the details of how Scurvy is played.

From the game setup menu, the players will have the option to choose between an easy or hard difficulty. If the players select the easy difficulty, it is assumed that they are not very experienced with the game and could benefit from a tutorial explaining the game. If the players select the hard difficulty, it is assumed that they do not need to watch a tutorial again about how to play. There will be an option to skip the tutorial so the players don't have to watch the video every time they play. Once the tutorial video is complete, the players will have a better idea of how to play Scurvy.

High Score Summary

The screen shown will display when the game ends. This again, is an alpha version and is still very basic. This gives the user the score the current high scores. If a player gets high enough of a score, they will replace one of the players and push everyone else down a spot. Since their names were declared earlier during set up, the name will already be saved and that name will be shown on the high scores menu. The menu also gives the user feedback by presenting them with their score so that they know how well they did and how they compare with the high scores above.

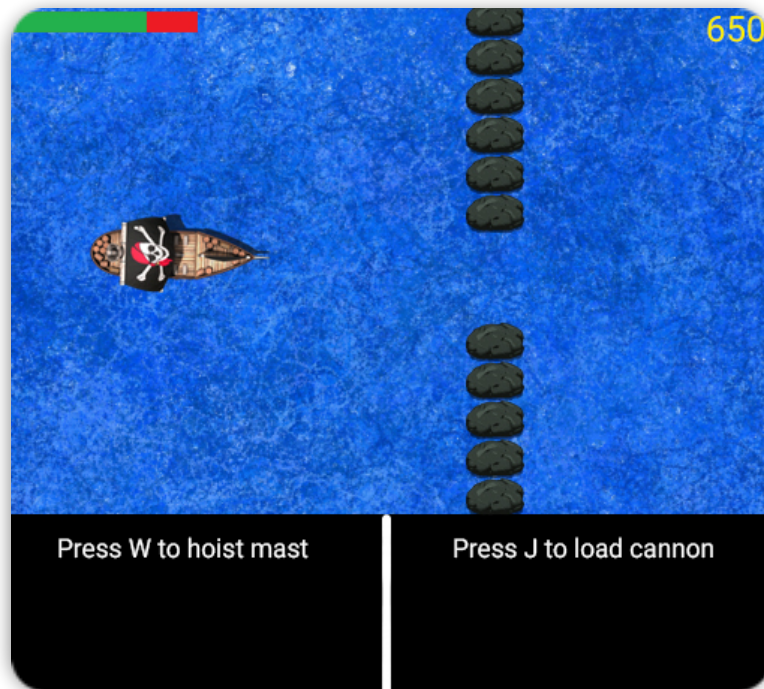
Prototypes

Figure 9: This is just a screenshot of the gameplay. However, the actual instructions module will be a video of simple gameplay.



Figure 10: This is a prototype of the high score menu, shown after the player has no health left.