

Candy Combaters

Group Members & Roles:

Amanda Cowan: Character Animation

Lauren Carlin: Scenery Design

Rian Rahman: Game Development & Sound Technician

Sarah Miller: Game Development

Siwoo Kim: Game Development

Game Link: <https://hmillersarah.github.io/candy-combaters/>

Code Repository Link: <https://github.com/hmillersarah/candy-combaters>

Project Concept:

For our LMC 2700 Final Project, we created Candy Combaters, a two-player candy-themed game where each player controls their character using the keyboard and fights their opponent in a brawl to the death. The game features custom characters, scenery design, and sprite animation that is relevant to the candy theme and street fighter genre.

Experience/Technical Execution:

Game Development: The game was developed in JavaScript using HTML Canvas. Using object-oriented methods, we created a Sprite class to reduce code repetition for all images, and a Fighter class to handle player variables and functions. Characters are able to move and perform actions by hitting keyboard keys that are linked to specific sprite functions. The start screen was added using shape elements on top of the game canvas and displays instructions and game difficulty settings.

Sound: To add sound to the game, we used a JavaScript Framework called [Howler](#). With Howler, we created a new Howler object for each MP3 audio file we used. Then we provided a src attribute to each object which referenced the location of the MP3 audio file in the directory structure.

Animation: To animate the characters, each action sprite PNG was looped through to create the appearance of movement. A switch case was used to cycle between the different sprite animations.

Design: Character design was primarily executed using [GraphicsGale](#), a common software used in the creation of pixel animation. After each frame was designed, the

frames were individually downloaded and combined to create the character sprite sheets. Designs for the game were inspired by the board game *Candy Land*. Player 1's design was initially based on the game's Princess Lolly, before it was altered to be centered around a bubblegum color palette. Player 2's design was created by [Luiz Melo](#), who has a variety of sprite sheets available. The sprite sheets were promptly recolored to align with the game theme.

Instructions for Game Play:

Players must choose a difficulty level for gameplay to begin. In easy mode, there is no game timer, but for medium and hard mode, players have a limited amount of time to defeat their opponent. Specifically, 30 seconds will be provided on medium mode, and 20 seconds on hard mode. Once a difficulty mode has been chosen, characters are dropped into the game.

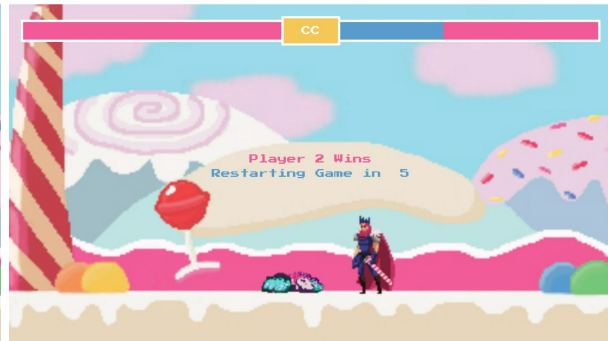
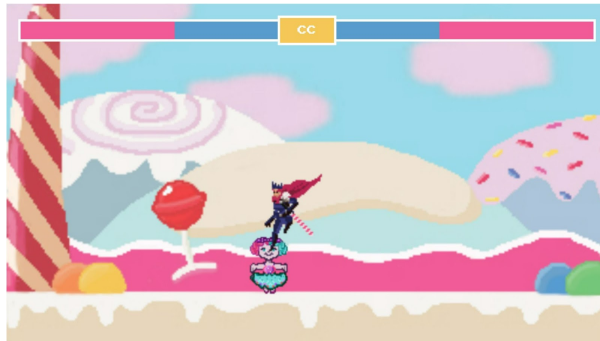
The character on the left side of the screen is assigned to player 1. The character can move right or left using the A and D keys, jump using W, and attack using S. Likewise, the character on the right side of the screen is assigned to player 2, and its controls are the arrow buttons on the keyboard. Player 2's character can move right or left using the right and left arrow keys, jump using the up arrow key, and attack using the down arrow key.

While playing the game, a health bar is located at the top screen, indicating the amount of health for each player. A player wins the game if they are able to drain their opponent's health to 0. If the timer runs out and no player has died, the winner will be whoever has the most health by the end of the game. If both players have the same amount of health, the game ends in a tie.

Once the game is complete, a countdown timer will appear indicating the time left until the next game starts. After the timer reaches 0, the game will reload, bringing both players back to the start screen.

Documentation of Sample Game:

The following sample game shows two players beginning at the start screen. Upon choosing the easy difficulty, they are moved to the game screen and follow their respective player controls to attack one another. Player 2 drains the health of Player 1 and is declared the winner.



Further Improvements:

Further improvements we could add to the game include:

- Adding different playable character options for each player to choose from
- Expanding the fighting mechanics to include higher strength fighting combos
- Diversifying the range of attacks each character is able to make
- Adding climbable surfaces to the stage for a varied game experience
- Adding a defensive mechanism, where characters can block enemy attacks
- Creating a variety of stages and backdrops
- Adding a loot system, where the player earns rewards after winning a game and can upgrade their characters using those rewards