Project #3 - Project Summary and Design Report

Developer Team Name: Quarantined Games
Team Members: Javier Melendrez, Gabriel Rivera
Game Name: Carrot Run

Introduction

Our project is a 2D endless runner. The user controls a carrot who is in an endless run jumping over bunnies who are essentially trying to eat you. The objective of the game is to jump over the bunnies and collect coins to try and survive as long as you can. The coins serve as a point system to keep track of how many bunnies you have survived so you know your score to beat for the next run.

Rules

The rules of the game are simple. Survive being eaten by bunnies by jumping over them and collect as many coins as you can before you lose the game. The only key the user needs to press is the space bar on their keyboard in order to jump.

Design

- Win State

The game has no winning state since it is an endless runner. There is no beating the game just survive as long as you can.

- Lose State

If the user collides with the npc bunnies they will lose the game.

- Expected Skills that the player is expected to have prior to starting the game

The player is expected to know how to use a keyboard to press the space key to jump while playing the game. The player is also expected to have good timing and quick reflex skills in order to successfully jump over the oncoming npc bunnies trying to eat them.

- Controls

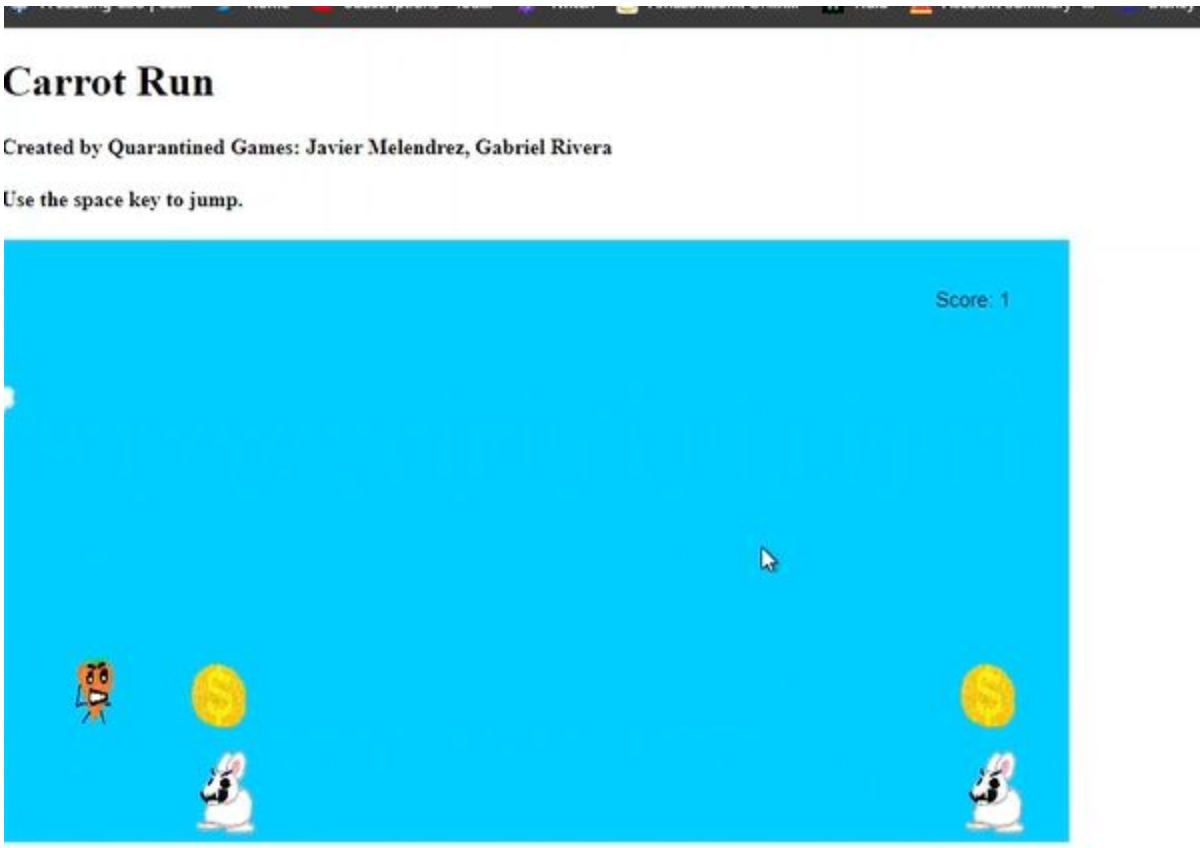
Player will use the space key on the keyboard to jump.
Use the mouse to select the restart button when the user wishes to play again.

- Expected duration of the game

There is no time limit but they game can be very challenging. After playing the game countless times ourselves on average players will probably survive for less than a minute.

- Scoring

There are coins placed over every bunny. When the user jumps over the bunny and collides with coins they will disappear and increment their score. The coins serve as a score for them to keep track of their run to beat on their next run.



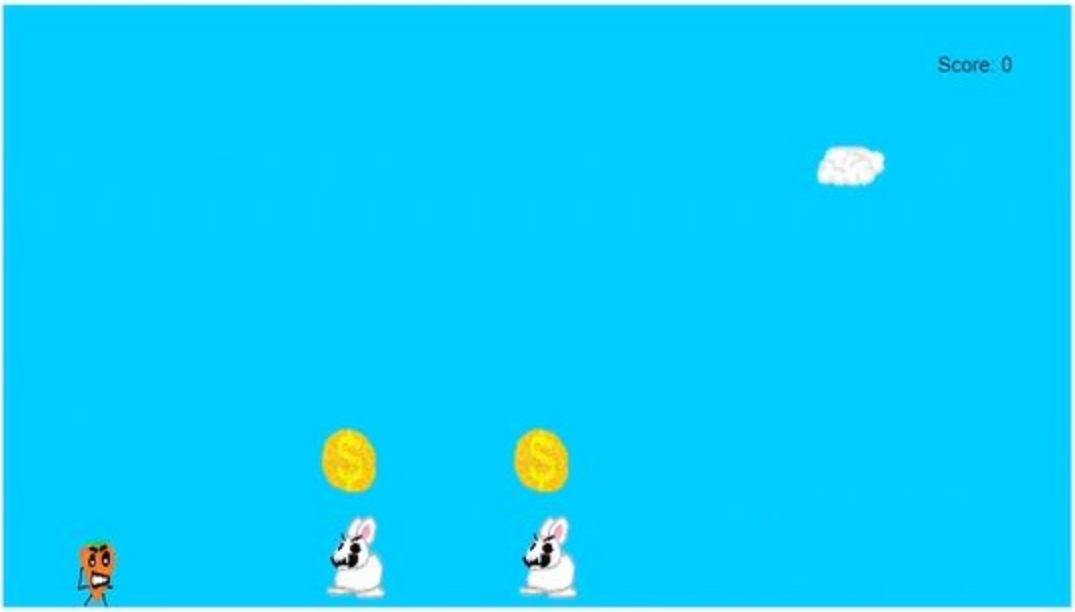
- Visual Representation of Game State

Starting State

Carrot Run

Created by Quarantined Games: Javier Melendrez, Gabriel Rivera

Use the space key to jump.



End State

Carrot Run

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Use the space key to jump.

Software Architecture Detail

All the objects in the game were programmed using classes. Within their constructors they are provided with the essential sizing and location of the object on the canvas. Each object then has their own respect functions which can be called for which provide the functionality to move and draw the object.

Because there is an infinite amount of bunnies, coins, and clouds they are placed in an array where their objects are being dynamically pushed into as the game moves along. A for loop is used to loop through every array calling for their movement and draw functions. Through the loops collison functions are also being runned to determine the state of the game. Certain states such as has the user collided with a coin to increment their score or has the user collided with a bunny to call the losing state screen.

All of the objects are organized into their own individual javascript files. The sketch.js file Is the file that calls every object and runs the game.

Game Demonstration

Here are screenshots of the game. Everything was implemented using P5.js.

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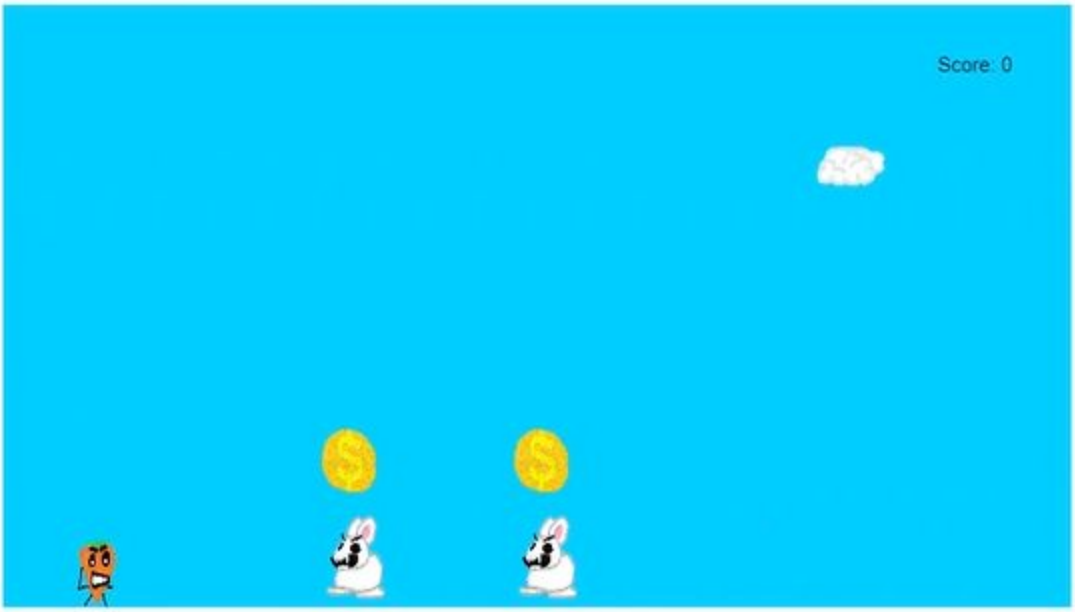

Bibliography.

To help understand and create this project the P5.js reference page was very helpful. Here you can find everything on how to draw, move objects, add key functionality, and add sound to the project to bring the game to life.

reference | p5.js