

Bun Run Project Document

● Introduction

This project is a bunny themed infinite runner. The infinite runner is a sub-genre of platformer games. The player controls a bunny that runs along a straight top-down road with 3 lanes. The bunny can be moved left and right along the lanes. The bunny automatically moves forward on the path without need for player input. The objective is to get as far as possible for a high score.

● Design

• Rules

The bunny wants to travel as far as it can and collect carrots for extra points.

Running into a rock will cause a game over.

The player can only move the bunny left or right.

• Sources of uncertainty

The rows are randomly generated by the computer so the player must adapt to each row as it appears.

• Win state, lose state

There is no concrete win state since the game is infinite. There is possibility for high scores, but they are not recorded by the game.

The lose state occurs when the bunny runs into a rock and ceases to move forward

• Expected skills the player must have prior to starting the game

The player should understand how to move objects using the WASD keys or keyboard arrows.

• Controls

The player uses the left and right keys on the keyboard or A and D keys to move the bunny left and right respectively.

• Expected duration of a game

Duration of a game is dependent on a player's skill level in playing games that require quick reflexes.

• Scoring

Score increases for every space that the bunny moves forward. Carrots that the bunny is able to pick up also increases score by a fixed amount.

- **Visual representation of game state**

Each game state is random.

There are six rows and 3 columns for each frame. A random number of rocks and carrots are placed on each row as it is generated and will stay on each row as it moves down.

- **Software Architecture Detail**

There are four scene definitions for the main menu, the how to screen, the game play screen, and the game over screen.

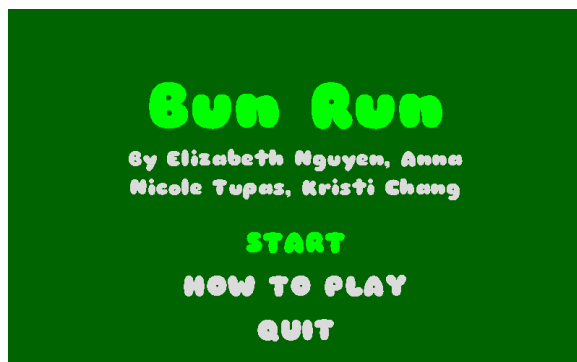
mainMenu is loaded when the program starts. It can call howto, gameLoop or quit based on user input.

howto loads text onto the screen and calls mainMenu if the user presses the Enter key.

gameLoop calls four other functions that help manage up the scene. drawBoard and createNewRow maintain the structure of the scene. hasCollided and hasCarrots keep track of what the bunny is running into and return values to gameLoop. gameLoop retrieves user input to move the bunny.

gameOver is called by gameLoop when the bunny collides with a rock. It can call gameLoop, mainMenu or quit based on user input. gameOver is given variables for score by gameLoop and displays them on the screen.

- **Game Demonstration**



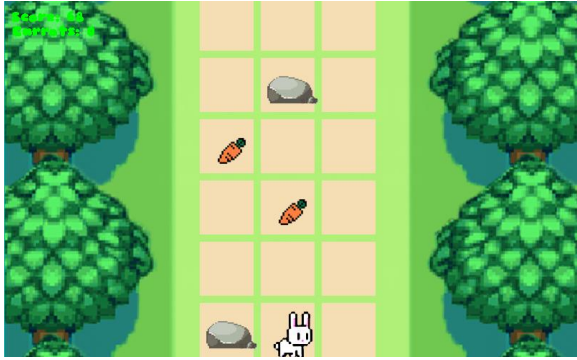
Main Menu

displays names and menu options



How To Play

displays instructions



Game Play

displays the game state and collects user input



Game Over

displays final score and menu options