

Super Cool Rabbit Game

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Introduction:

Super Cool Rabbit Game is a scrolling platformer set in a magical world made entirely of food. Using the arrow keys, the player will navigate through the levels as a rabbit who is trying to make it in time to attend a tea party by portalling through lollipops. Along their journey they will encounter collectible desserts that act as powerups and hungry card foxes and badgers that are tired of eating only sweets. Powerups grant the rabbit special abilities, such as invincibility. They are stored in the player's inventory until the player decides to activate them. Hopefully our game will be entertaining and attract people interested in a unique, charming platformer that isn't extremely hard to play and encourages improvement through replaying levels.

Instructions:

Use the arrow keys or WAD to move the player through the scrolling landscape. Up arrow or W key to jump, right arrow or D key to move right, and left arrow or A key to move left. There will be a menu at the very beginning where the player can view the instructions or start the game with buttons for each option. When the game first starts, there will be an introduction backstory that the player can click to continue. Once the player begins a level, they can exit the level to view the level selector, or view the instructions in game, through the buttons on the top right corner. Clicking the escape key also takes you to the level selector. Powerups in the inventory are accessed using the number keys (the first box corresponds to 1, the second to 2, etc.). To use the level selector, the player would first click the level they want, then click the play button to start. Players can only play levels they have unlocked through completing the previous level.

Features List:

Must-have Features:

- A starting screen that will be available to switch to at any point of time during the game.
- 4 scrolling levels that will take on average 2 minutes each to complete
- White rabbit that you control with arrow keys. This character travels around the levels collecting dessert powerups. The player doesn't have to use them right away, they are stored in the inventory, however once a level ends, the inventory refreshes.
- There will be enemies (card foxes!) that pace back and forth around the level, waiting to attack by ice cream cones at the rabbit. This and touching (from anywhere but above) the enemy will cause the rabbit's health to reduce. Enemies can be defeated by the rabbit landing on its head.
- Obstacles such as spikes that the rabbit cannot touch, or else it will lose some health
- Desserts (power-ups) that are collected and usable at any time throughout the game. The rabbit will change color when the powerup is in use.
 - 3 different kinds: jump boost, invincibility, speed boost
 - May help the player with simply passing a level or with defeating an enemy.

- A basic storyline to better engage the player.
- Inventory that stores power ups and other items that the player can pick up and use
- A record health (on the screen) measured in hearts not a bar.
- Respawn at the beginning of the level and checkpoints that signal the end of the level

Want-to-have Features:

- More levels with increased complexity.
- A more complex storyline.
- A boss battle at the end of the game.
- Detailed and pleasing art custom to the storyline and character animations.
- Sound effects that enhance the gameplay and accompany actions such as jumping or the use of powerups.
- Leaderboard/high score that records and saves scores from previous games.
- Timing (as a score)
- Different types of enemies with different abilities and/or appearances.
- Different story endings depending on what choices the player makes.
- Level selector that allows you to improve your times on previous levels.

Stretch Features:

- Eye tracking or a way to move the player using motion/camera tracking.
- Cheerful background music that helps set the theme.
- Enemies powered by AI, to enhance the difficulty of the game.
- Implementing 3D first-person levels to create a more immersive experience.

Class List:

- Main - the main that runs the program
- Sprite superclass (anything in a level that scrolls)
 - Powerup superclass, subclasses for each powerup
 - Character superclass
 - Rabbit - represents the player
 - Enemy - represents a non-playable enemy
 - Projectile class - what the Enemies shoot
- Platform - the individual platforms for each level (also a subclass of sprite)
 - Spike - unmoving obstacles that kills the player
- ScreenSwitcher interface
- Screen - a screen that can be displayed by the Drawing Surface
 - Menu - a screen, represents the start menu
 - LevelSelector - lets users toggle between different levels
 - Level superclass - base for all levels
 - 4 individual classes for each level - all of the platforms are assembled here and enemies/powerups/rabbit/checkpoints are individually set up and spawned

- Instructions
- WinScreen
- GameOverScreen
- Inventory - represents the inventory where powerups and other items are stored until the player uses them
- Health - keeps track of the bunny's hearts
- DrawingSurface - controls what is displayed on screen, switches between screens
- Scrollable - interface for all classes that scroll

Credits:

Anna Warila:

- Platform class
- Inventory class
- Screen superclass
- Scrollable interface
- Health class
- Spike class
- Level 3 & 4
- Time score
- Bug testing

Jessa Yang:

- Graphic designs/visuals
 - Rabbit & Enemy art
 - WinScreen and storyline art
- Powerup class
- Level superclass
- LevelSelector class
- WinScreen
- Character superclass and subclasses/controllers
 - Rabbit
 - Enemy
 - Projectile class
- Sprite superclass
- Sound effects

Revati Tambe:

- Graphic designs/visuals
 - Platform art
 - Screens art (Menu, Instructions, Game Over)
 - Powerup art

- ScreenSwitcher interface
- Screens
 - Level 1 & 2
 - Menu
 - Level Selector
 - Instructions
 - GameOverScreen
- DrawingSurface
- ScreenSwitcher interface
- Main
- Sound effects

Outside Resources:

- Shelby coding demos
 - Game Physics demo
 - Side Scroll demo
 - Timing demo
 - Playing an MP3 demo
- Image sources
 - Heart: https://commons.wikimedia.org/wiki/File:Emoji_u2665.svg?scrlybrkr=1a5e9892
 - Background: <https://stock.adobe.com/search?k=%22candy+mountains%22>
- Sound sources:
 - Jump noise: Pixabay - “Chime sound” (by Pixabay)
 - Background music: Pixabay - “Soft-piano-loop” (by Ncone)