

Synopsis

The shop window that was chosen is from “Kaj’s Guitar Store” in Enschede. The many guitars in the store window and the heavy theme of rock and roll and western inspired the main design. A guitar and cowboy boots are visible in the shop window and in-game. The jukebox and other music items led to a focus on sound, specifically country-rock music. The different guitars inspired different attacks, and the headless mannequins lead to an idea of zombies. Other elements that are present in both window and game include beer, cacti and a yellow chevrolet.



Usage and Interactions

Cowboy can be made to move around with WASD keys but cannot leave the screen. He must complete attacks and avoid getting hit by enemies to stay alive. He can pick up beer to heal himself.

Beats scroll across the screen towards the **RhythmBar**, they each have a direction assigned to them. When attacking the user must match a beat's direction by pressing an arrow key to launch an attack from the cowboy. The damage depends on the timing of the attack.

Bullets are sent out from the cowboy. The type of bullet depends on the direction of attack. Bullets move forward and damage enemies when they collide.

Enemies are spawned randomly across the screen, they move towards the cowboy and damage him.

Cactus can be used after the user hits an attack with excellent timing. The cactus is a very powerful bullet and can be used with the ‘e’ key.

Beer has a chance of spawning randomly across the map when the user hits a attack with excellent timing

Architecture

GameManager controls most of the elements in the game, telling each object what to do	Cowboy object moves around the screen, and takes damage from zombies	Beat objects used to create attacks and show attack directions
Song objects hold sound files and tempos, used for music	Enemie objects move towards and damage Cowboy	Beer objects heal the cowboy
SoundManager used to play and stop songs	Bullet class objects move forward and damage enemies	Response objects give visual feedback to the user

startNewGame

Loads songs and creates a new GameManager, having a new GameManager resets all other objects and effectively restarts program

isColliding (belongs to both Bullet and Enemy)

Checks if cowboys, enemies, and bullets are colliding with one another by comparing their distance to a value

aimCowboy

Finds the closest enemy to the cowboy and aims towards them.

isDead (belongs to Cowboy and Enemy classes)

Checks if health is below zero, causing object to 'die'

moveEnemy

Moves the enemy in the direction of the cowboy by finding the angle and changes its current angle using lerp

playGame

Used by GameManager as the game loop, controls all other game elements in this method, as well as drawing everything

attack (as well as cactusAttack maybe)

If the user gives an arrow key input, this method checks if it matches with the current Beats direction, if it does the cowboy fires a group of bullets. The type of bullets depend on the direction of the beat and their damage depends on the timing of the attack.

controlSongs/controlCowboy/controlEnemies/controlResponse/controlBullets/controlBeats

These methods control the steps that are completed for each element/object every game loop

gameOver

If the cowboy dies this method tells the gameManager to stop running the regular game loop and ask the user if they want to restart.

Design

