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BA in Game Art & Visual Design

Game Engines

Task 1: Research

Our Project

Our idea is a hyper casual runner game in which the player plays as a ghost navigating a haunted house while trying to scare ghost hunters away. The player controls the ghost using the left and right arrow keys and must avoid the beam of the ghost hunters' flashlights.

The ghost hunters start off as stationary enemies that the player must dodge, however as the game progresses, they begin walking from one side of the corridor to another, in a zigzag motion or up and down the hall to increase the difficulty. It is also a possibility for them to have longer flashlight beams and rotate, making it possible for them to defeat the player from far away. To earn extra points, the player can try to get close enough to the ghost hunters (without hitting the flashlight beam) to press the "boo" button (spacebar), which scares them away and increases the player's score. This makes it trickier since obtaining a high score is not as simple as avoiding the enemies.

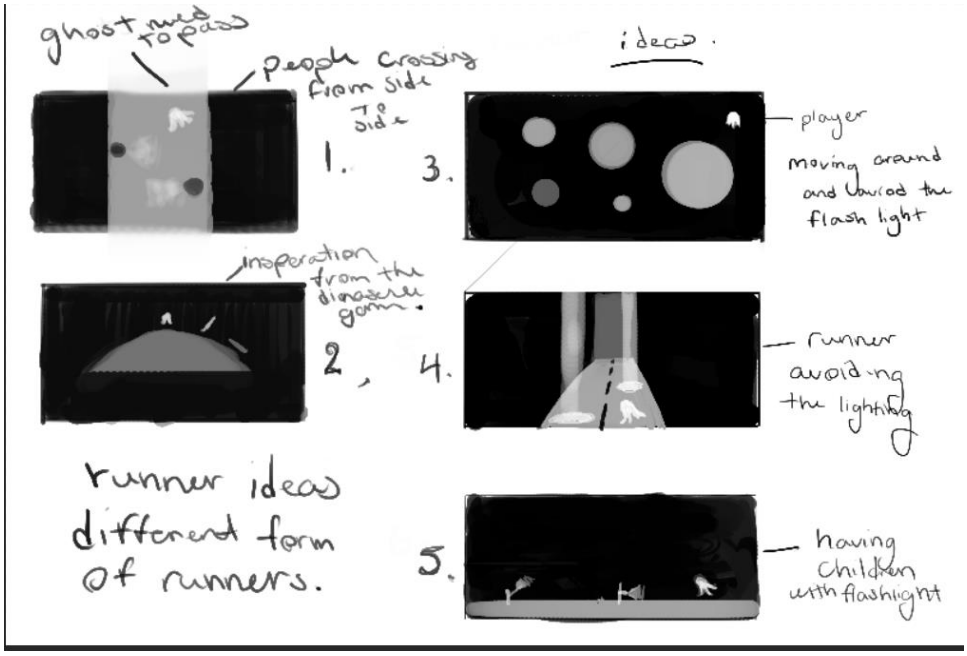

Figure 1: Preliminary sketches of potential layouts

Figure 2: A potential design for the background

Time plan

We began our work process by researching code structures of endless runners to get an idea of the steps needed to create one, as well as planning out when we would work on each step of the process. The following time plan was created:

Week 1 (Beginning 21st December):

- Creating a playable character in unity
- Writing code to make the character move when the player presses the arrow keys

Week 2:

- Create enemy characters
- Create spawn/despawn tiles for enemies

Week 3:

- Write code for enemy behavior
- Write code for enemy collisions and how it will affect the player

Week 4:

- Create menu and game over screens
- Work on UI for above screens

Week 5

- Set up a Point Storage system

Week 6

- Write code to make the game endless

Week 7

- Adjusting player and enemy speed, ensuring that the quantity of enemies spawning at any moment makes sense and is not too little or too much

Week 8:

- Testing and evaluating the game
- Thinking of any possible improvements
- Making any final adjustments that may be needed

Gantt Chart: (in separate file)

CRC Cards for Code Structure

Player
○ Movement control ○ Speed ○ Ammount of lives ○ "Boo" button to scare enemies ○ Taking damage when colliding with enemy flashlight beam
Communication
○ Ghosthunter (enemy) ○ Enemy Flashlight Beam ○ Boo button

Ghosthunter (enemy)
○ Movement (likely across the screen or up and down the hall) ○ Respond to Boo button

○ Respawn ○ Flashlight beam kills player
Communication ○ Player ○ Boo button ○ Enemy Flashlight ○ Spawn Tile

Spawn Tile ○ Spawns enemy ○ Controls enemy spawning speed ○ Stops spawning when player dies ○ Controls amount of enemies spawning at once
Communication ○ Ghosthunter

Boo Button ○ “Scares” enemy (does not destroy, but increases score) ○ Works when within a certain distance of an enemy
Communication ○ Enemy ○ Score Count (if possible)

Score Count (if possible) ○ Stores player’s score ○ Increases score by 100 when the boo button is used to scare an enemy
Communication ○ Boo button

References:

Sharp Coder, n.d. *Endless Runner Tutorial in Unity 3D.* [Online] Available at: <https://sharpcoderblog.com/blog/endless-runner-tutorial-in-unity-3d> [Accessed 11 December 2020]

J. Nyland, n.d. *How To: Endless Runner Game,* SoloLearn: Learn to Code. [Online] Available at: <https://code.sololearn.com/WI3Cu9zk3XSJ/> [Accessed 16 December 2020]