Documentation

[Collect candles]

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For video showing, you can see at https://u.osu.edu/pu.127/candle-collect/

Main

The idea is from the game “Sky: Children of the Light”. A player will collect the fixed candles on a terrain. If player close to the flame, the flame will fly to the player and delete itself, and the player’s score will increase. The fire will destroy and then create an empty to instead. The player has gravity and have collider with terrain to protect not fall.

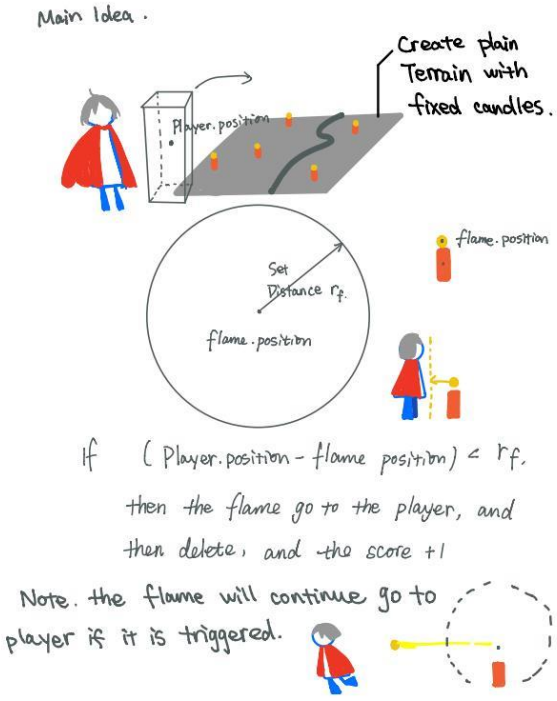

Figure 1. Example main idea

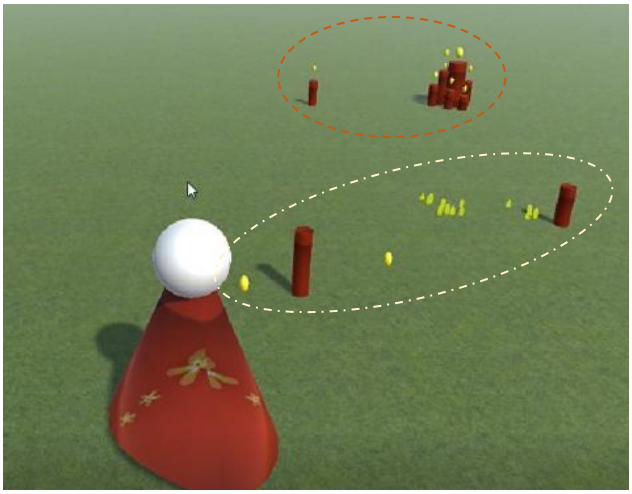

Figure 2. Actual main idea in game in video. The yellow circles the fires in the trigger range go to the character. And the red circles the fire out of the trigger range.

Features

* Model

Create models for player and its clothing, simulate the clothing animation.

I used maya to create the character model and grass model. Then for character, I used front and side view to create the base character. Then I created joints and circles which controls the joints. I let the joints invisible and then tried to animate the movements of character, and finally got the “walking” animation, you can see the model creation and the inner construction in video “Model: maya” part. You can see character animation as “try.fbx” in Unity or in the video “Model: Unity” part.

Figure 3. Examples of character

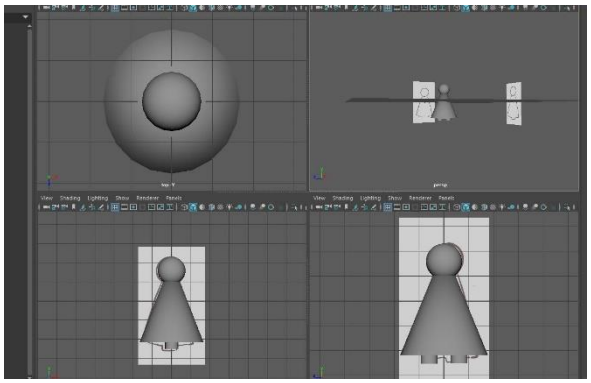

Figure 4. Use front and side view to create the base character

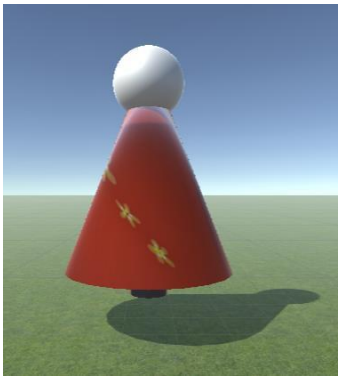

Figure 5. Actual character in the game (side view)

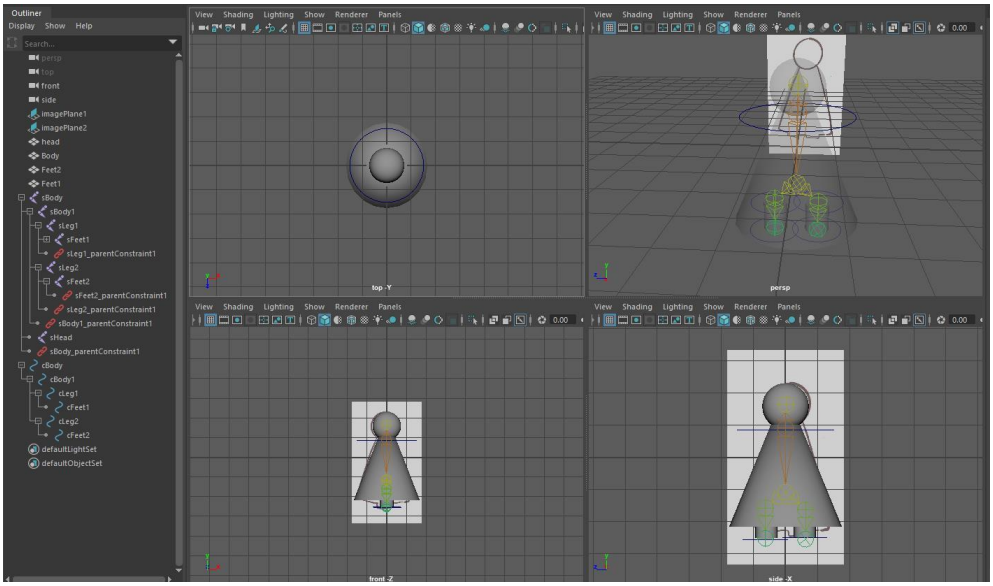

Figure 6. Joints and Controls.

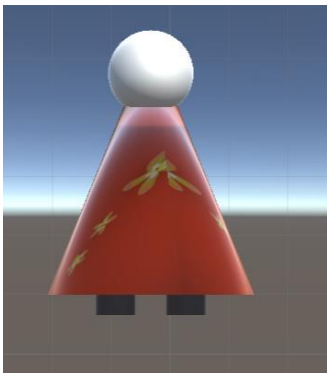

Figure 7. Actual character in the game (player/back view)

* Note: When use images to start creating model, the picture should in the top-X and topZ, but not the [presp]. Also, remember to “orient joint” for every parent joints. When hold on entering “v”, the

controller could change the position but near the joints. Also, when select child and then parent and click “P”, it can quickly get parent-child.

***Grass rendering and interaction**

Create grass on the terrain and if player walk on the grass, the grass will move away and then back.

Figure 8. Example Grass

Figure 9. Actual Grass in the game

I used the texture to the terrain. I challenged the shader to fix the grass interaction. The grass has its regular wave by wind, and when player walk on the grass, they will move away and when player walk away, the grass will back to its original movement.

The biggest problem I met for shader is that the parameter in shader is a fixed number. The reason why I cannot change data in the shader is because I set the position of player in the shader, but it needs the c script to send parameter into it.

Additional Features

***Different Scene**

Jump to different scene took me a lot of time. The scene after jumping always is darker than the original game view. Finally, I find if I change the light setting and change the “Player setting” to change some shader selections and then I get a good build of my scene.

***Button animation**

I set “Normal”, “Press”, “Select”, “Highlight” button animations.

***GUI and score system**

I used pictures and text to remind the collect of fires. The main idea is “3 score” = “1 candle” in GUI. When player gain 1 score, the GUI will appear "1/3" of candle. And when player get 3 score, the text of GUI will increase to remind he the number of candle that he collected.

***Sound**

Every scene has background music. When player collect the candle, a voice will remind him.

* Framework.

[GameStart] Scene of the start.

[Load Image.cs]

For load GUI images to show the candle collection of players.

[GameStart.cs]

For controlling the scene jump to game scene “Try”.

[Try] Scene of the game.

[playerMovement.cs]

For storing basic player information and control movement. [Player]

[CandleSelect.cs]

For designing the flame creation, deletion, fly movements and scores count. [EmptyGameObject]

[Fire.cs]

For designing flame and avoid touching “empty object” in flame array.

[GrassShader]

For designing the grass material to control grass visual movement.