Capstone Planning Document

Description:

For my Capstone Project, I will be building an interactive simulation of the rescue of a caged rabbit. The concept is to build on emotional connection to the trapped animal initially through encountering his friend who is frantically trying in vain to save him.

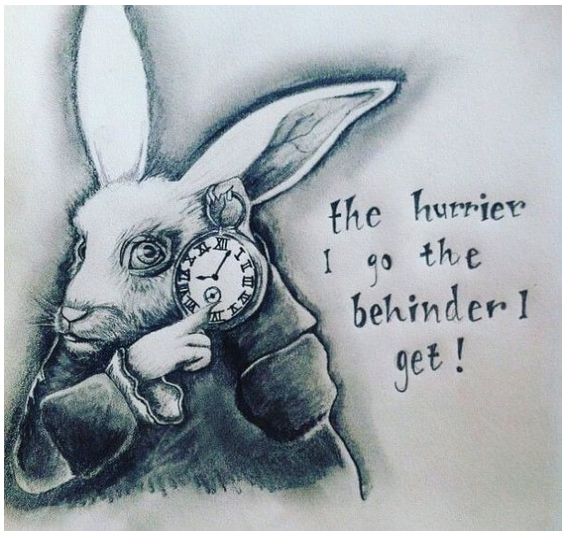
"The hurrier I go the behinder I get!"

- The Rabbit, Alice's Adventures in Wonderland

"If you'll believe in me, I'll believe in you. Is that a bargain?"

- The Unicorn, Through the looking glass

To begin the experience, the observer will see a forest scene around them with a clearing and a flowing river of lava that is uncrossable. On closer inspection a rabbit can be seen running around the clearance and by his movement it can be determined that the rabbit is in a distrssed state.

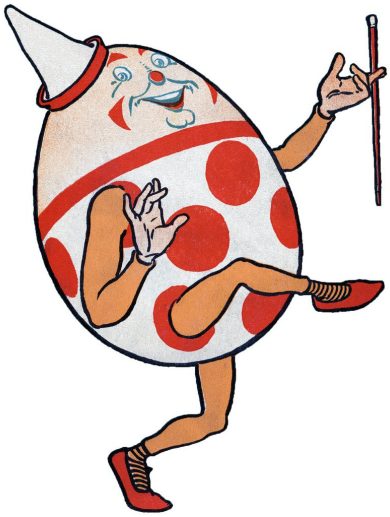


When the observer approaches the rabbit, he will pause and look up and speak. When the observer speaks back an answer the rabbit will ask to be followed as he needs human strength to save his friend. The rabbit will lead the obserber to a boulder that must be pushed aside so that the rabbit can dig up a key or switch to reveal a bridge across the lave to free his friend.

Features And Dependencies:

1. 3D Models + Animations (Reference Images)
    a. *Humpty Dumpty model and animation*

a.i. 

a.ii. 

b. King's army soldier

b.i. 

b.ii. 

c. Medieval Skybox

c.i. 

c.ii. 

c.iii. 

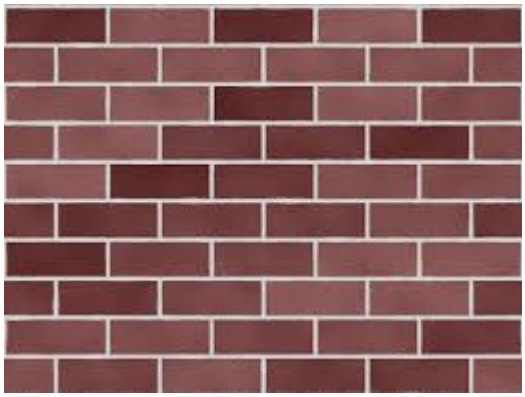
d. Greenery

d.i. 

d.ii. 

d.iii. 

e. Giant Brick Wall

e.i. 

e.ii. 

2. Game Loop

a. Interaction for player with Humpty Dumpty
b. Procedurally break the Humpty Dumpty model into many pieces
c. Speak Recognition for player crying for help
d. Game Mechanic for player to try to put Humpty back together
    d.i. Grid lines of where the pieces should all go
    d.ii. Player clicks and drags them into the appropriate spot.
e. Fading to black and restarting
f. Hints to guide player towards the right areas

3. Other Effects
    a. Cartoon Lighting to make the experience feel more like Mother Goose
    b. Particle Effects to reward users for doing a correct actions
    c. Spatial Sound effects for egg breaking, king's army marching, ambient sounds
    d. Procedural navigation mesh to have army walk around objects
    e. Light cues to make sure that players find where Humpty Dumpty is

Example Capstone Scoping

Features And Dependencies:

4. 3D Models + Animations
    a. Humpty Dumpty model and animation

        a.i. Revised: Will start with a basic Capsule model and then from there begin working on modeling and animating.

    b. King's army soldier

        b.i. Revised: Will create one model and duplicate that to form an army in order to reduce scope.

    c. Medieval Skybox

        c.i. Revised: Will not be making this and will instead use the one provided by Unity.

    d. Greenery

        d.i. Revised: Will use SpeedTree to create the forest and save on performance and creation time.

    e. Giant Brick Wall

        e.i. **Revised: Will use brick wall provided in this Unity package**

5. Game Loop
    a. Interaction for player with Humpty Dumpty
        a.i. Still planning this!
    ~~b. Procedurally break the Humpty Dumpty model into many pieces~~

b.i. Revised: procedural mesh destruction can be a little complicated, so instead we will just create a separate mesh that is destroyed.

c. Speak Recognition for player crying for help

c.i. Revised: although this is a bit complicated in scope, will do this for the Speech Recognition achievement.

~~d. Game Mechanic for player to try to put Humpty back together~~

~~d.i. Grid lines of where the pieces should all go~~

~~d.ii. Player clicks and drags them into the appropriate spot.~~

d.iii. Revised: although a great mechanic to add interactivity, to scope down, I will remove the interactivity as it is inaccurate the storyline.

e. Fading to black and restarting

e.i. Revised: Still a go!

f. Hints to guide player towards the right areas

f.i. Revised: Will use baked lighting with light probes to avoid complexities and help performance as opposed to volumetric lights

6. Other Effects

a. Cartoon Lighting to make the experience feel more like Mother Goose

a.i. Revised: To scope down, will have to forgo this requirement

b. Particle Effects to reward users for doing a correct actions

b.i. Revised: Still planned to do.

c. Spatial Sound effects for egg breaking, king's army marching, ambient sounds

c.i. Revised: Required as per the rubric, but will clearly increase the fidelity of the game

d. Procedural navigation mesh to have army walk around objects

d.i. Revised: Will use Unity Navigation to simplify this effect

e. Light cues to make sure that players find where Humpty Dumpty is

e.i. Revised: Relates to the guide players and this will be done with simple lighting (non volumetric)

I Saw a Little Rabbit Go Hop, Hop, Hop

I saw a little rabbit go hop, hop, hop!
I saw his little ears go flop, flop, flop.
I saw his little eyes go blink, blink, blink.
I saw his little nose go twink, twink, twink.
See her coat so soft and furry
See her hop away in a hurry!

Description
A cute cyber-rabbit in distress is in need of some human assistance to solve a problem to get free his friend trapped on a lave encircled island.

The user is at the foot of a hill in a digi-forest setting and can see a rabbit coming towards them in a hurry.

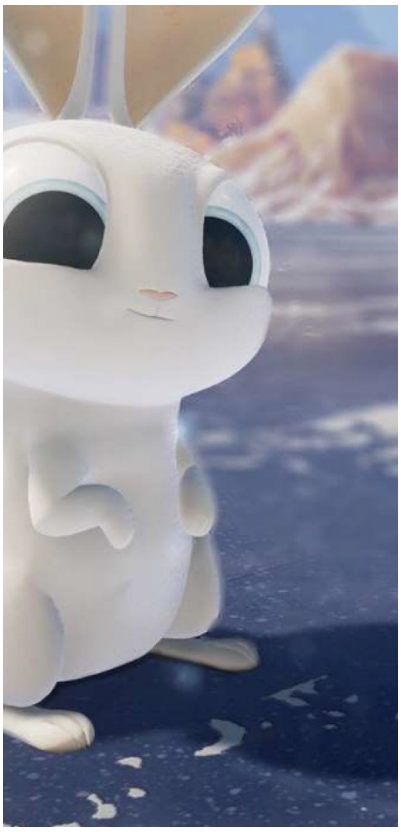
It is dusk and the sun is starting to set, crickets may be audible.

Although the setting is warm there are ominous sounds audible as the forest is revealing a darker side

Behind the user is a lava river which the rabbit needs to get across. As the rabbit and user interact the way is blocked as the stepping stones are hidden or retracted.

The user must help the rabbit by solving a puzzle to reveal the stepping stones.

1. 3D Models + Animations (Reference Images)



2. Game Loop
    f. Interaction for player with Rabbit
    g. Procedurally break the Rabbit interaction into many pieces
    h. Speak Recognition for player to interact with rabbit
    i. Game Mechanic for player to
        i.i. Grid lines of where the pieces should all go
        i.ii. Player clicks and drags them into the appropriate spot.
    j. Colors to show completion and fading to black and restarting
    k. Hints to guide player towards the right areas

3. Other Effects
    a. Cartoon Lighting to make the experience feel more like Mother Goose
    b. Particle Effects to reward users for doing a correct actions
    c. Spatial Sound effects for egg breaking, king's army marching, ambient sounds
    d. Procedural navigation mesh to have army walk around objects
    e. Light cues to make sure that players find where Humpty Dumpty is