

Escape the Forest

Game Design Document

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Lab 2

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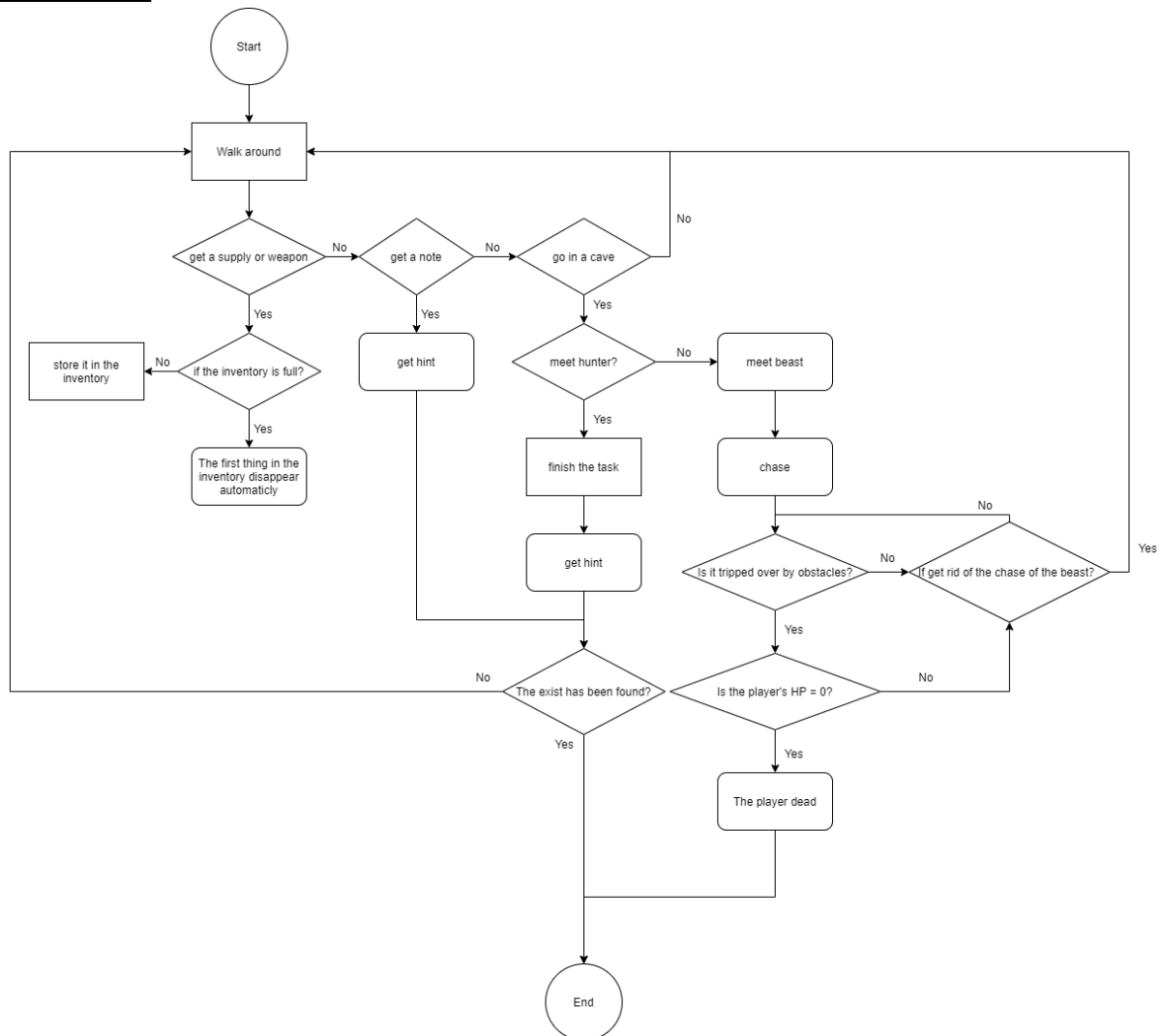
Intro

This is a 3D environment puzzle game with some parkour game element. You are a courier from the NDT express company. You have received the company's order and need to work in Tamara City. So you start to go to Tamara. One day, you took a ship to cross the sea but reached a forest and it's already night. You want to go back and wait until tomorrow morning to cross the forest. You know that it is not safe that cross the forest at night. But the pier is closed. You can only go through the forest and find the way to Tamara as soon as possible. In this forest, you only have a torch. Your sight range is only the range that the torch can illuminate. You need to explore this forest, get hints, and find your way out of the forest.

Gameplay Description

The player need to walk explore the forest and find the exit. You will find sign in the forest. There are kinds of resources to strengthen or protect yourself. You may encounter beasts. You must escape in time to avoid injury, attack with the weapon. On the way to escape, be aware that the trees and rocks under your feet will trip you.

Flowchart:



Map:



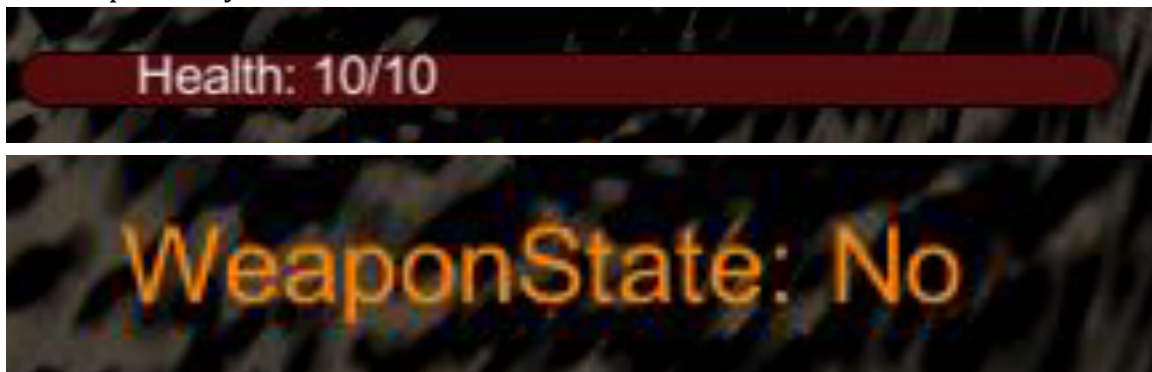
Systematic Breakdown of Components

I used a canvas system to hold all UI components in Start, End, Gameplay, and Die scenes. I also used the animation controller system to control the switch of beasts' animations.

About the light system, I only add two light source in this game. One is the directional light. It is for the environment light. I didn't set the day and night cycle and just let the environment keeps dark cause it is midnight in the game setting.

Artistic Style Outline

For the user interface, I used a forest background image to fit the background of my game. In the gameplay scene, I specifically darkened the color of the blood bar in the upper left corner of the screen. Considering that the player is exploring the forest late at night, so the field of view will be darker than everyday, if you choose a brighter red color will look more abrupt in the screen. I used a more conspicuous orange color for the weapon carrying status. Because this is one of the more important components in this game. The player needs to make a judgment based on the weapon carry status.



I have also added several sounds to the game. A burning-wood sound will keep playing while the game is in progress to simulate the player walks in the forest with a torch. When the player touches weapons, the system will play a "get" sound that is common in games after a collision. When the player touches supplies, the system will play a sound similar to a magic spell to indicate that the player's blood level is filled. When the player is attacked, the system will play a sound similar to being stabbed. When beasts die, the system will also play the corresponding death sound. Spiders are bugs and wolves are beasts. The screams of the two kinds of beasts are different. So I specifically chose two different and close to this two beasts realistic sounds.

Asset Breakdown

Art Assets

Player:

- First-person controller:

<https://assetstore.unity.com/packages/tools/input-management/mini-first-person-controller-174710>

Beasts:

- Spiders and wolves: <https://mantisda.itch.io/mantis-hatchery-battle-creatures>

UI:

- Weapons and supplies icons: <https://nicaciocrow.itch.io/survicons>
- Stones texture: <https://juliovii.itch.io/stoneandbrickspk01>
- Buttons textures: <https://wenrexa.itch.io/uimobile-free>

Worlds:

- Terrain ground:

<https://assetstore.unity.com/packages/2d/textures-materials/nature/terrain-tools-sample-asset-pack-145808>

- Trees:

<https://assetstore.unity.com/packages/3d/vegetation/trees/dream-forest-tree-105297>

Sound Assets

In-game music:

- Background music: <https://www.51miz.com/sound/256210.html>

UI feedback sound:

- Button Clicked sound: https://www.aigei.com/sound/ui/?wd=点击音效&bd_vid=12701023628321071334

In-game music:

- Weapons touched sound: <https://www.aigei.com/s?q=碰撞&type=sound>
- Spider die sound: <https://www.aigei.com/s?q=死亡&type=sound>
- Wolf die sound: <https://www.aigei.com/s?q=死亡&type=sound&page=2>

- Player be attacked sound: <https://www.aigei.com/s?q=加血&type=sound>
- Fill up health sound: <https://www.aigei.com/s?q=加血&type=sound>

Development

In fact, at first, my idea is to do a parkour game. The background and setting of the game remain the same. The player is still a courier from the NDT courier company, was asked to work in another city. Because of the difficulty of making the game, I changed the game map to a forest that the player has to pass before reaching the new city. But I think if it's just a 3D environment puzzle game, it's not interesting enough, so I want to add the element of the parkour game.

First I created a terrain ground and mapped it to make it look like a forest environment. Then I added grass, trees, and stones to the map. Since the player can walk through the tree objects, I added pillars to each tree and resize them so that they overlap the tree objects, then hid the pillars. I also added texture to the stones. I used Probulider to make a cave and duplicated them into 10, scattered around the map. I started adding content to the caves. I set the forest exit to the second cave on the right when the player is facing the map. The remaining 9 caves were set to three each of spider caves, wolf caves, and supplies caves, and placed the corresponding object/enemy in each cave. But then I considered that if supplies existed in the caves and in the map, there would be less need for players to choose to enter the caves. And the obstacles(trees and stones) in the terrain is not too dense. Therefore, I think players don't need too many medical supplies in this level of difficulty. Supplies should be rare items so that players will have a reason to choose to enter the cave to explore to get supplies. So I removed the setting that supplies existed outside the caves and replaced it with supplies that existed only in the caves. Then I added 10 squares to the map and added textures to them.

After I finished the basic layout of the map, I added two light sources to the game. Directional light is used to represent the lighting of the whole environment. The point light is used to represent the light emitted by the torches in the player's hands. I also wrote code to constantly transmit the player's position to the point light, so that it follows the player's movement all the time.

Then I started writing the code for the mechanics. When the player enters the pursuit range of beasts, the beasts will start moving towards the player. If the beasts catch(touch) the player, the player's health value will minus 2. When the player touches the weapon box or the supplies box, it would be destroyed.

Then I made three more scenes: Start, End, and Die. I made a background image and three buttons in the Start scene. When the player clicks the HowtoPlay button, there will be an operation guide to show the player the game goal and how to play the game. When the player loses all health, the game fails and will skip to the Die scene. In the Die scene, there are two buttons: Restart and Exit. When the player finds the exit successfully, it will skip to the End scene. In the End scene, there are also two buttons: BacktoStart and Exit. When each button is clicked, a click sound is played.

At this point, the mechanics of this game are all done. Then I started trying to make the game become more like a real game than just a game demo. In the gameplay

scene, when the player does not enter the beasts chasing range distance, the beasts will keep playing idle action. When the player enters, the beasts will switch to running animation and start chasing the player. And I made the beasts always face the player on the front. When the beasts are killed, they will stop chasing the player, switch to the death animation, and be destroyed after 2 seconds. Then I took into account that players usually don't remember their blood and status when they play the game. So I made a health bar and text to indicate the weapon-carrying status. They are set in the upper left of the screen. The health bar will show the player's current health. The weapon's status will show whether the player currently has a weapon or not. When the player touches a weapon(exclamation mark cube) on the map, the weapon-carrying status will be displayed as "Yes". When the player touches the supplies(question mark cube) on the map, the player's health will become full. If the player is touched(attacked) by a beast while the weapon carries status is "no", the player's health will drop. If the player is touched while the weapon-carry status is "Yes", the player's health won't drop. The beast switches to death action and be destroyed after two seconds.

Then I start adding music and sounds to this game. In the Start, End, and Die scenes, when all buttons are clicked, a sound will be played. In the gameplay scene, I added loop-playing background music to simulate the sound of torches burning. When the player touches weapons, supplies, under attack, and the beasts die will play the corresponding sounds.

Lastly, I created a canvas for the pause menu and wrote codes. When the game is playing, if the player presses the key "Esc", the game will be paused, the pause menu will be shown. There is a button to quit the game. If the player presses the key "Esc" again, the game will be continued.

Additional Ideas and Possibilities

When I try to develop my game, I faced some difficulties. My idea is that when any beasts start chasing the player, additional music will be played. When the beasts that chase the player are more than two, the music keeps playing and won't be played again at the same time. When there is no beast chasing the player, the music will be stopped. I spent 3 days trying to make this mechanic, but I still didn't write the right logic and codes. Then I gave up it. After this course, I still want to finish this mechanic.

If it is possible in the future, I want to finish the whole game, including my first idea that the player parkour through the city and delivers couriers to each house.