CS 4730: Computer Game Design
Design Team: Overall Design

Overview

For this assignment, you will produce a document describing the overall design of your game. You have flexibility in your design, but you must meet some basic requirements. Your design will answer these overall questions:

Step 1: Overall Game Summary

Begin by giving me an overall summary of your game in a couple of paragraphs. Who is your protagonist? What is their goal? What are the primary gimmicks / mechanics that you will be designing with for the game. What is the environment like? How does the player make progress? Is there a story or narrative involved? How does the game end?

Step 2: Design your main character(s)

Your first task is to design your main character or characters (please try to limit the number of characters). Your document should serve as a spec for a programmer who will eventually be implementing this character (those programmers are YOU by the way). Start by answering these questions:

2.1. Who is main character? What is their name? Why are they the protagonist of this game? Why should the player care about them and their goals?

2.2. List out ALL of the characters controls. This includes all buttons on a controller and what each one does. I want this to be precise. What exactly happens when each button is pressed on the controller?

2.3. List all special abilities that involve combinations of button presses as well (if any). For example, perhaps your character can wall jump but not if they've already double-jumped. Remember to consider combinations that aren't allowed. Perhaps your character cannot jump while in water, or cannot dash while in mid-air, etc.

2.4. You do NOT need to include interactions with other objects yet (e.g., when character is on ice their movement is changed by …). That will come in a later document.

Once you've answered these questions, provide a finite-state machine describing the behavior of the main character of your game. You will use this design to implement the character in a couple of weeks.

Step 3: Design the Overall Environment

While you don't need to design individual rooms and challenges yet, you do need to provide the overall environment. Start by answering the following questions:

3.1. Your world must contain four (or more) distinct areas. Each of these areas will need to have at least 8 rooms in it and each room must be larger than the screen (i.e., requires the camera to pan). As stated earlier, you don't need to design the earlier rooms but this gives you an idea of the scale we are looking for. What are the four areas? What are they called? What makes each unique?

3.2. How are the areas laid out? Are they linear? Is there a hub and spoke? Or are there multiple connections between them throughout the world.

3.3. Which area does the player start in and in what order are they visited? Does the game bounce them around the areas solving puzzles and challenges, or is it more linear? Is everything accessible at the beginning or do we unlock one area at a time in a pre-determined order?

3.4. If your game has powerups / collectibles, which area(s) contain which items? Describe where the locks and keys are located (if applicable).

Complete this step by providing a drawing of the overall map marked with any points of interest (e.g., doors between areas, notable item pickups, etc.

Step 4: Bosses / Final Challenges

Each of the four areas of the game must include some kind of "boss". This does not need to be a typical boss fight, but it does need to be some kind of larger scale final challenge. Answer the following questions:

4.1. Describe each of the four "bosses" in detail. What is the challenge? How does the player overcome these challenges? Are there specific strategies, weaknesses, risks, associated with each?

4.2. Does the player earn anything after finishing these segments? How does the player know what to do next after one of these bosses?

For each boss, provide a state-machine diagram describing how that particular boss character works.

Requirements

You will pass this assignment if you have provided the following:

- A succinct high-level overview of the entire game and its progression / mechanics.
- Sufficiently detailed answers to the questions regarding your main playable character as well as a detailed state machine describing the controls and behavior of the main character.
- Sufficiently detailed description of the overall environment and four areas, including the overall path the player takes through these areas to complete the game. A concrete map of the overall game world is provided.
- Sufficiently detailed descriptions and state-machines for each of the four game "bosses"

Turn In

Submit a single pdf of the design of your game on Collab.