

CS 4730: Computer Game Design

Design Team: Enemies and Environment

Overview

For this assignment, you will design 8 “enemies” and 8 environmental objects. It is intended that each of these be simple to describe and simple to code. The intention is for 2 of each of these things to exist in each of the four main areas of your game.

Step 1: 8 enemies

Your first goal is to describe and design 8 “enemies” for your game. Your enemies do not have to be traditional character-based enemies. Instead, they might come in the following forms instead:

- Weaknesses that hinder the player (e.g., in this area, you can’t double jump anymore)
- Environmental “enemies” (e.g., floor is hot and you can’t stand on it anymore. Gravity works differently. Wind. Etc.)
- Types of puzzles (e.g., this area has block sliding puzzles)

Once you have listed and described all eight of these. Do the following:

- Describe what area they are found. List 2 or 3 examples of how that enemy or mechanic can be used to make an interesting room. Is there a tradeoff in how the player deals with this enemy?
- Describe a state machine for the enemy. How does it react to player input? Are there different versions based on internal variables (e.g., wind speed, cooldown timer, etc.). If so, describe how these all work.
- Remember that it should be easy to convert your state diagram into code, so be as precise as you can.

Step 2: Environmental objects

In addition to “enemies”, your game should contain 8 (2 per area) environmental objects the player can interact with. Some examples of these might include:

- Bouncy objects (e.g., mushrooms in Hollow Knight)
- Spikes that fall from the ceiling.
- Bushes that can be cut to reveal treasure
- Rocks that can be picked up and thrown

For each object, you need to describe:

- How the player interacts with that object and its effects
- The effects of the object on other game entities. Does the object interact with other environmental elements in the game? Does it interact with enemies? If so, describe how. *These interactions by the way, are what make many games more complex and fun and allow for more interesting level designs.
- Provide 1 or 2 examples of how the object might be used in the game in interesting ways.
- Provide a state diagram for how the object works in code.

Requirements

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

- A detailed description of 8 “enemies” with state diagrams that make them reasonably programmable.
- A detailed description of 8 interactive objects with state diagrams that make them reasonably programmable.

Turn In

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