

Monster Casino Project Proposal

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Hardware Architecture

The hardware is divided into two main components, including the DE1-SoC's Cyclone V FPGA and related peripherals. The DE1-SoC part is developed based on the official Linux platform provided by the manufacturer, responsible for running the game, loading related resources, and other computational processes. The related peripherals include USB input devices: keyboard and mouse, as well as output devices: VGA, microphone, and other peripherals such as LEDs, switches, and buttons, which are used for human-machine interaction and other functions.

Game Design

Our goal is to design a mini-game based on slot machines and monster cultivation. The gameplay mainly includes lottery, capture, and cultivation.

The first part, the lottery, is based on the probability of a slot machine to obtain items, money, and monsters at a low probability. Players control the stopping and running of the slot machine in each cycle with the mouse, thus probabilistically obtaining three icons and receiving corresponding rewards based on the icon rules.

Monster acquisition is achieved through capturing "wild" monsters that randomly appear on the screen. The capture method involves completing a certain number of hits within a set time. After clicking on a monster, it will try to escape, and the mouse must track it. The capture probability is determined by mapping the number of clicks within five movements. If capturing a new monster, the player must discard the original monster, as only one can be kept at a time.

Cultivation involves spending items and money obtained from the slot machine to enhance various parameters of the monster. Improving the monster's parameters can increase the probability of winning at the slot machine. Reaching different cultivation values within various cultivation periods can unlock related achievements.

The goal of the game is to destroy the slot machine in various ways. Methods to destroy the slot machine include, but are not limited to, rare achievements and reaching threshold values for monster parameters. Upon destroying the slot machine, the monster is liberated.

Milestone:

1. Complete the slot machine module and the design of monster-related structure(before 3.20).
2. Insert relevant images and basically complete the game demo(before 4.10).
3. Optimize the game and attempt to add network functionality(before 4.30).