Vegas-Style Slot Machine

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Overview

• To make a Vegas-style slot machine, given its popularity in casinos and the popularity of online gambling

• Will rely on camera-controlled inputs from user, instead of physical touch

• Dividing project into two parts: game inputs and game outputs

• Deliver a fun, interactive, and visually-appealing slot machine
Agenda

• How a traditional slot machine works
• How our 6.111 slot machine will work
• Implementation
  – Block Diagram
  – Discussion of two modules
• Optional Functionalities
• Time-line
How a Traditional Slot Machine Works

• Three identical reels with pictures that rotate when lever pulled after money has been inserted
• One-player game
• Player wins money based on the pattern of pictures shown when reels stop
Our 6.111 Slot Machine

- Will have the slot machine's elements on a computer screen
- Reels and lever will be animated
- On-screen buttons
- Player will start out with a fixed amount of money to gamble with
- Player pulls the lever by standing in front of the camera with a red glove on one hand and making the correct pull-down motion
Implementation

• Project divided into two major components, which will be broken up into modules
  – Game input component
    • Detects position of the red glove from the camera
  – Game output component
    • Responsible for game functionality
• Modules can be made and tested incrementally
Red Color and Center of Mass Detector Module

- Inputs: pixels from camera frame buffer
- Outputs: read address for next pixel in frame buffer, x-y coordinates of the center of mass of red glove
- Functionality: Take in each pixel, decide whether red or not, if red, then average it into the current center of mass, thus determining a new center of mass. Center of mass must be greater than a certain weight in order to be considered.
Game Logic Module

- Inputs: random number, x-y coordinate of red glove, payout (end game), bet amount
- Outputs: Current bet amount, cash pot, results, enable, reel1, reel2, reel3
- Functionality: Takes in a bet amount, waits until hand is over lever for 2 seconds, then waits until hand makes a “pulling lever” motion until it reaches a certain threshold. The game logic picks random sprites for the reels.
Optional Functionalities

• Make the slot machine user-friendly by having it give the player on-screen directions
• Make the reels spin faster or slower in relation to the force of the pull-down of the lever
• Make it so that a player can place bet by using the on-screen buttons, instead of having to use the switches on the FPGA
Time-line

• Meet together
  – Mondays 12pm-2pm
  – Wednesdays 12pm-3pm
• Current week: Checklist, code
• Week of 11/18: Code
• Week of 11/25: Debugging
• Week of 12/2: Optional functionalities
• Final Week: Preparing presentation and report
• Ongoing: Writing description of modules as we code