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Digital Logic Design

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Final Project Proposal Paragraph

Description: We intend to implement a sort of number guessing gambling game. The purpose of the game is for the program to randomly generate a number and allow a user to guess what the number is. The goal is to implement VGA output so that the program will respond to the player with whether their guess is too high, too low, or right on the dot. The game will also have a gambling aspect, where the player will start with a certain amount of money and will be able to place bets on how many tries it will take them to get it. The amount of money the player has will also be implemented as VGA output.

List of Requirements:

1. Use the VGA port to output whether the most recent guess was too high, too low, or right on the dot.
2. Use the VGA port to display the user’s current monetary balance.
3. Track the user’s current monetary balance based on the success or failure of their guess and the amount of their bet.
4. Keyboard input
5. Keep track of the current number of guesses for a given target value and scale the payoff for a successful guess. If the current number of guesses exceeds a threshold, negate the payoff and reset the guess, target, and bet states.
6. Determine success or failure of a given guess
7. Determine the success or failure of a given game based on the user’s monetary balance
8. Permit the user to reset the game and start anew.

Contingency Plan: The biggest concern for our project is the VGA output, so if the project does not go to plan we will use on-board LED and 7-segment display output. The LED’s we will use for displaying success and failure states. The 7-segment display we would use to display the monetary value associated with the player.