CSE590 Computer Architecture
Design Document For Guessing Game
Reshma Raghavan, 50132421
Steps to play the Game

1. At the beginning of the game, PL1 is displayed on the 7 segment display indicating that it is player 1's turn.
2. **Enter the number (0-F) in binary via the switches 3:0** (switch 3 is the msb while switch 0 is the lsb).
3. Any **button press** would display the number on the switches 3:0 onto the corresponding 7 segment display. This would result in the numbers being strobed onto the display, effectively clearing out PL1 and this is stored in *no* as the number to be guessed by player 2.
4. **Move switch5 from low to high.**
5. PL2 gets latched onto the 7 segment display indicating that it is now player 2's turn to enter the no via the switches 3:0 (switch 3 is the msb while switch 0 is the lsb). Any **button press** would display the number on the switches 3:0 onto the corresponding 7 segment display. This would result in the numbers being strobed onto the display, effectively clearing out PL2.
6. **Once the player 2 has entered the guess using the switches 3:0, move switch 4 from low to high and then to low.**
7. The number in the switches at this point is stored in the register *guess* as the guess made by player 2. **If the guess is less than no, then 2LO is displayed** on the 7 segment displays or **if the guess is higher than no, then 2HI is displayed** on the 7 segment displays. **If it is the correct guess, the no of guesses stored in *cnt* is displayed on the last 7 segment display and the leds next to the four switches start to blink in celebration.** This ends the game.

Assumptions

1. The maximum guesses is assumed to be 15. This will get displayed in its hex equivalent A on the last 7 segment display, if player 2 makes that many guesses before finding the number entered by player 1.
2. The leds used to blink upon a correct guess are assumed to be the 4 leds next to the switches 3:0.
3. Switch 5 is assumed to remain at high once player 2 gets her/his turn.
4. Only when the player has entered the guess should switch 4 be moved from low to high and then to low.