Week 13 - Project Progress 2nd Report
CIS-033, Spring 2024

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Timeline & Current Status

Week of	Done?	Planned Actions
April 22, 2024	x	• Project Timeline Plan *(this)*
	x	• Assemble components
	x	• Determine Arduino Pin Assignments for all components
	x	• Do Unit Tests, verify individual components / blocks
	x	• Prepare schematic with all connections
April 29, 2024	x	• Design & document Game Logic
	x	• Breadboard full circuit, with all components
	x	• Merge unit-test codes, verify components in single programs
	x	• Run startup tests, check all output components
May 6, 2024		• Mount RGB LED onto Servo-controlled part, and align fixed color LED in semi-circle around former
	(on-going)	• Code game logic
		• Add simple sounds for game
		• Test game mechanics
		• Build structure to assemble all components suitable for game
May 13, 2024		• Last minute changes (if any)
		• Final polish

High-Level Game Logic

At Power on, do system checks:
- Blink Fixed-LEDs in sequence
- Blink RGB-LED through colors used in game
- Rotate Moving-Part, through 8-positions, to align with Fixed-LEDs
- Make a few beeps on Buzzer to check sound
- Display some text on LCD to check text output

Before Game:
- Set Moving-Part to middle of rotation range
- Turn RGB-LED off
- Display message: "Press button to Start"
- Accept only Button press, to Start game

Start Game:
- Set Time_Remain = 30 seconds
- Set Score = 0
- Enable Joystick Inputs
- Goto Start of Round

Start of Round:
- Randomly pick 1 to 3 Fixed-LEDs to light up. Note which Fixed-LEDs.

During Round:
- Joystick x-axis input (Left/Right):
  - Rotate Moving-Part to next (counter-)clockwise position; unless already at left/right-most position
- Joystick y-axis input (Up/Down):
  - Rotate color of RGB-LED, between (Red, Yellow, Green, Blue)
- Button press:
  - Check Moving-Part position & RGB-LED color.
  - Compare this position and color, to see if it matches Fixed-LED(s) lit.
  - If yes: award points, and turn off matched LED.
    - If all Fixed-LEDs off, move to Next Round
    - Else allow user chance to "match" other lit LEDs.
  - If no: award No points, and move to Next Round.
- If Time_Remain == 0: goto End Game

Next Round:
- Beep Buzzer to signal round over.
- Goto Start Round

End Game:
- Stop accepting Joystick & Button Inputs.
- Keep score displayed. Also show High-Score.
- After several seconds, goto Before Game

Project Prototype