The Color Reflex Game

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Background

With the ever-evolving development in the society, we have been reliant with the technology around us. So dependent that we tend to lose function of something in ourselves. Technology reduce human effort and is a convenience to us. Too convenient that we let loose of ourselves and become weaker. According to cognitive studies, people tend to react slower nowadays compared to people in the past, this may have cause from a many reason. Slow reaction time may be related to early death. An article written by Favid Mcnamee states the relation of slow reaction time and faster death by 25% as compared to people with faster reaction time. This project, the color reflex game, will help determine and also improve your reaction time. A healthy dose of monitoring and practicing your cognitive abilities so as to help you live longer in the long run.

Project Description

A player will start the game by selecting the push button. Afterwards, the LCD will display random color's name wherein we limited it by three colors: red, green, and blue. Therefore, the player is tasked to push the right button. When a player selects a wrong button the game will still continue. When the game ends, the LCD will display the tally of the scores if the button was pushed on time or not.

Project Features

- Matching the right pushbutton to the color name shown on the display.
- Challenges the reflex, reaction, and coordination of a player within 30 seconds of gameplay.
- LEDs are used as an indicator in this game, specifically red, green, and blue.
- The LCD Display will show random 3 color names: Blue, Red, and Green. It will also show the tally of the score.
- The Push Button acts as the activator in this game. Each Buttons are added near each LED's indicating the association between them. When a player pushes the right button, they will score a point, if not game still continues.

Project Specification

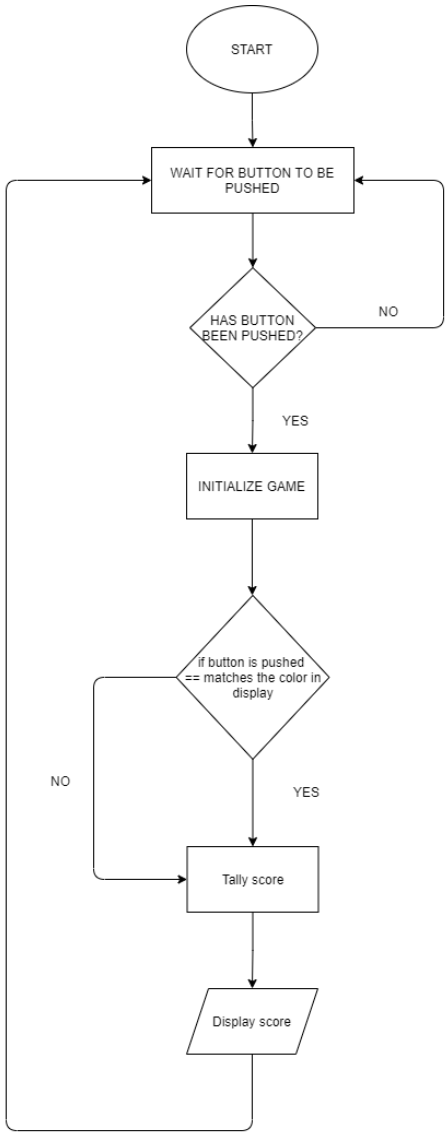
- LEDS (in various colors, 3)
  LED are used as an indicator in this game.
- LCD Display (1)
  The LCD Display will show a random 3 colors: Blue, Red, and Green. It will also show the tally of the score.
- Push Button (3)
  The Push Button acts as the activator in this game. Each Buttons are added near each LED's indicating the association between them. When a player pushes the right button, they will score a point.

Implementation Details

[A] Circuit Description

Based on the Project Specifications, LEDs are used as an indicator and push buttons as activator in this game. Each Buttons are added near each LED's indicating the association between them. When a player pushes the right button, they will score a point.

[B] Flowchart



[C] Program/Code/Algorithm Description

[D] Fabrication Description (optional)

[E] Work Assignment of members

- Paul Vincent B. Espina: Researcher
- Lorenzo R. Macaso: Rapporteur
- Ma. Pamela P. Tagayon: Leader

Test & Results
Conclusion & Recommendation

References

[1] Donald, F. ”Reflex test for your brain using Arduino”. Internet: https://www.gadgetronicx.com/reflex-test-game-using-arduino/, 2016, April 05 [March 10,2021].

[2] “I2C LCD Arduino Tutorial”. Internet:https://lastminuteengineers.com/i2c-lcd-arduino-tutorial/, [March 10, 2021]

[3] Klements, M. “Arduino based reaction timer - improve your reaction time.” Internet:https://www.the-diy-life.com/arduino-based-reaction-timer-improve-your-reaction-time/, 2020, April 21 [March 10, 2021].

[4] Miller, L. “Random LEDS Arduino.” Internet: https://www.learnrobotics.org/blog/random-leds-arduino/, 2020, January 28 [March 10,2021].

Appendix

[A] Bill of Materials

Quantity	Price (Php/each)	Materials
3	5	(3) LED
1	249	Arduino Uno
3	46	Push Buttons
3	7	Resistors
		Jumper Wires
1	65	Breadboard