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Quickfire Game
Author: Salvatore Amico
samic2@uic.edu
University of Illinois Chicago

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Quickfire Game (Abstract)
The "Quickfire Game" is a 2-4 player game built around an Arduino board, ideal for group enjoyment and skill enhancement. It challenges players to swiftly react to a light and sound cue, with their reaction times sparking friendly rivalry. It features multiplayer and single-player modes and is perfect for gatherings and solo play. The construction includes assembling LEDs, buttons, resistors, and an LCD into a case, offering a hands-on experience in electronics. The "Quickfire Game" is a great choice for family and friends, combining entertainment with educational value.

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Project Idea
The "Quickfire Game" is a fun and interactive project designed for 2 to 4 players. This project is ideal for bringing people together, offering an entertaining and engaging way to enjoy each other's company while indulging in a bit of friendly competition. The game begins with a random delay signaled by a pulsing white lights, after which players must react to a white light and a piezo sound to press their button as quickly as possible. The project involves assembling a circuit with elements like LEDs, buttons, resistors, and an LCD for display, all of which are assembled in a custom case. The case design, which is crafted from materials like plexiglass and wood, ensures the game is strong and visually appealing.

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Multiple Arduinos and I/O devices were used.
Receiving the communication from the Transmitter(T1), receiver 1 (R1), receiver 2 (R2), and receiver 3 (R3) will delegate game component signals and instructions to the various game lights displays and switches to be interacted with by the players. T1 will control the LCD screen and supply power to the other controllers. Additionally, transmits commands serially to the controllers and receives input from the game buttons and the on/off switch. R1 will be responsible for the gameplay LED lights. R2 will be responsible for the game's white lights and sound and will hold its corresponding playlist. R3 will be responsible for the on/off LED light.

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Communication between the multiple Arduinos
This project utilizes four Arduino uno R3 cards in serial communication, one of which is the transmitter (T1), and the other three are the receivers (R1), (R2), and (R3). The transmitter will be responsible for the game logic. Displaying the messages on the LCD screen and receiving signals from the play buttons. The (T1) will also transmit commands to the other three receivers, activating their components appropriately. (R1) will light the gameplay LEDs if 1, 3, 5, and 7 are received from the serial port. (R2) will play buzzer sounds and white lights when 9 and B are received from the serial port. Finally, (R3) will

illuminate the game on the LED when it gets an D or E from the serial port.

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Original Work
The "Quickfire Game" is based on the "Reaction Timer Game". In this game, players press a button and release it when an LED turns red. The reaction time is shown on a screen, and a buzzer makes sounds to distract players. If you let go too soon, you start over. The game uses a LED, a screen, a button, and a buzzer connected to an Arduino. The LED's colors change randomly, making it hard to predict when it will turn red.

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What Worked
Circuit Assembly: We assembled the circuit with LEDs, buttons, resistors, and an LCD. The custom case design uses plexiglass and wood ensured a sturdy and visually appealing game. Engaging gameplay mechanics: The white lights and piezo sound cues triggered players to react quickly, creating an exciting challenge. Displaying the winning player

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What Doesn’t Work
Power button issues Power light issues Reaction time functionality needs more work Game loop issues More extensive testing with multiple players could have helped with overall gaming experience

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Team related roles and processes.
Each team member had an equal share of responsibilities and work. We had regular team meetings to communicate and make decisions. We checked each other's work to meet project standards. When we had problems the whole team worked together to solve them and keep making progress.