CS/EE 120B

Custom Project: Step

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Introduction

Step is a two player racing game. Each player sees two LEDs and uses joysticks as controls. The LED represents the left foot, while the right LED represents the right foot. When the left LED turns on, the player needs to move their left foot by moving their joystick left. When the right LED turns on, the player needs to move their right foot by moving their joystick right. Each player cannot simply spam the joysticks because the timing of your steps matter, step too soon or too late and you may trip on your own feet.

Each player can earn points by winning a race. After 5 races, the player who wins the most races wins the game.

Components

Inputs:

* 2 Joysticks buttons (2 per player) [A0 - A3]
* 1 Push button (reset the game) [A4]

Outputs:

* LCD Display (current score and messages)
* 4 LEDs (2 per player to signal steps)
* Another atmega1284 (because I need more ports)

Complexities

1. 2 players play simultaneously
2. 2 joysticks
3. Another atmega1284 (one atmega1284 will be dedicated to game logic, while the other will control the overall project)