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Laser Arcade Project Proposed Problem Report

RCET 3374

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The goals for the Laser Arcade project this semester are to finish the target system and blasters. The target system needs to connect two circuits, the master and several slaves together via I2C, which will be controlled by a VB program. Additionally, a target that allows both IR sensors to detect the laser when shot needs to be found or created. The blaster circuitry needs to be updated to include a boost circuit that will allow the PIC, laser, and solenoid to be driven at 5V, as well as an audio board. Additionally the blaster will need a chassis to mount into, which is why a Nerf gun will need to be modified to mount all of the circuitry and components, and function properly with the solenoid to simulate slide recoil. The main challenges will be the Nerf gun modifications to the slide, finishing the code for the targeting system, and writing a VB program to run the target system from scratch.

* Finish programming the master and slave PICs so that they function as intended, and so that they are able to communicate via I2C, and write a program in Visual Basic to control the game.
* Modify and convert a Nerf gun to house all of the electronics, and function as a laser blaster.
* Make some changes to the blaster circuit to include an audio board, and design a boost circuit that allows it to drive all components from a 3.7V battery.
* Find/create a target that allows both IR sensors to detect the laser when hit by the blaster.
* Design PCBs for the blaster, and target master and slave circuits.