Protect Your Room!

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When we were younger, our father taught us how to program. We became involved with programming using Arduino. It became a hobby of ours. We were able to create a color sensor, temperature sensor and use LED lights to react to lights and sound. We realized that many experiments and projects could be done with the materials. We decided as teenagers, we needed alarms for our bedrooms. First, we designed the Arduino breadboard using resistors, LEDs, jumping wires, and an ultrasonic sensor to create the project. Next, we had to create a program in Sketch to make the design work. We had to be careful with what we typed because the slightest error could cause the sensor not to work. Once we had the program configured correctly, the ultrasonic sensor could sense the object or person by sounding the buzzer and lighting LED lights to show distance. The first green light shows distances measured from 25-30 cm. The second green light shows distances measured from 25-20 cm. The first yellow light shows distances measured from 20-15 cm. The second yellow light shows distances measured from 15-10 cm. The first red light shows distances measured from 10-5 cm. The second red light shows distances measured from 5-0 cm. The closer the object the louder the buzzer sounded. Therefore the buzzer signaled at the first green light and increased sound to the second red light where it was the loudest. We had minimal errors during the entire experiment.

Awards Won: