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Introduction

Aim

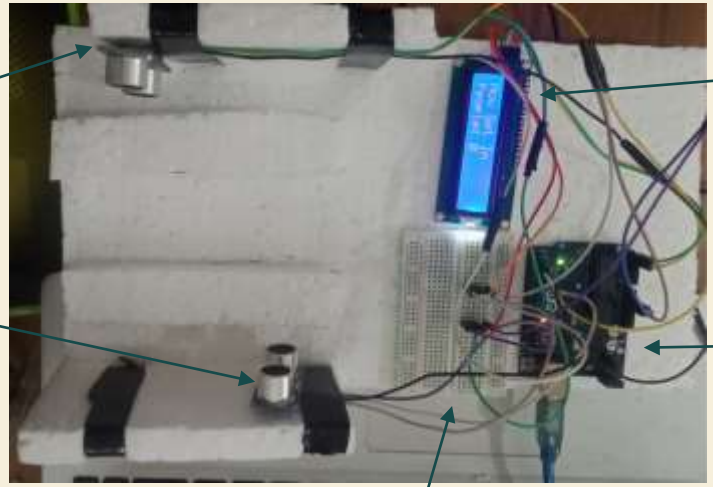
Automatically count people entering and exiting a room using sensors for monitoring room occupancy.

The aim of this project is to automatically count the number of people entering and exiting a room using ultrasonic sensors placed at a doorway. This system helps monitor occupancy in real-time, prevents overcrowding, and ensures safety by displaying alerts and live counts on an LCD screen based on movement detection.

Components Used

- Arduino Uno
- 2 × Ultrasonic Sensors (HC-SR04)
- I2C LCD Display (16x2)
- Jumper wires and breadboard

Photo of Device



Sensors

I2C LCD Display (16x2)

Arduino Uno

Breadboard

Working Principle

Two ultrasonic sensors are placed at the door.

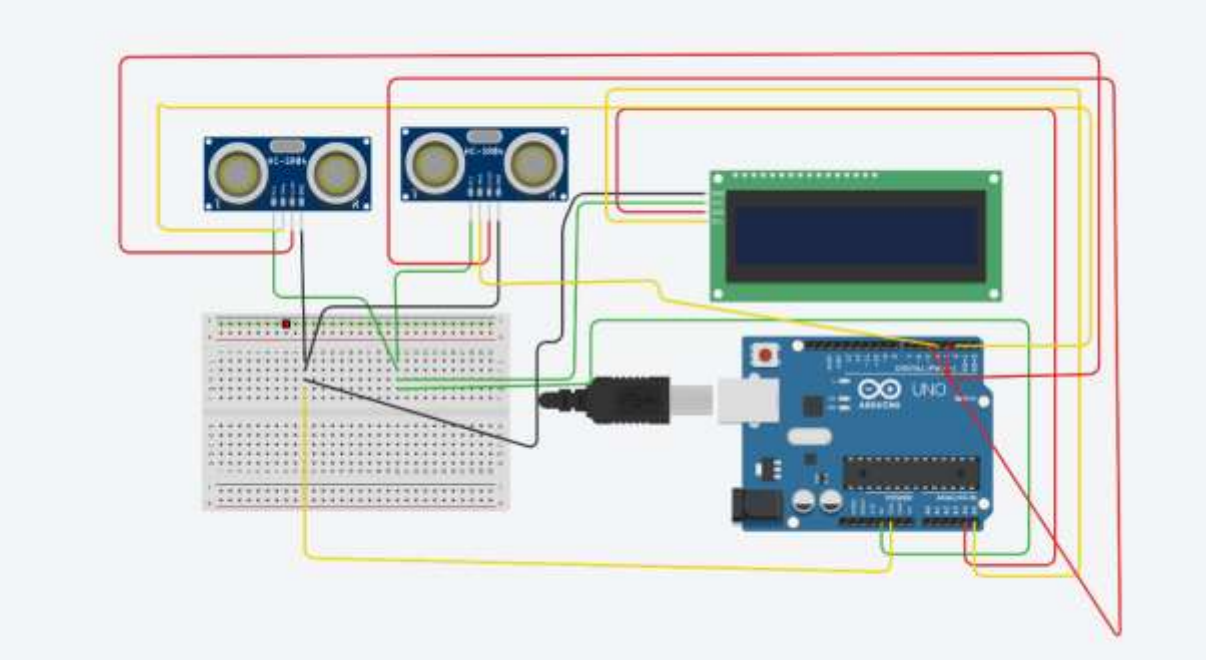
If Sensor 1 is triggered before Sensor 2 → person is entering.

If Sensor 2 is triggered before Sensor 1 → person is exiting.

The LCD displays:

- “Now Get In” if under limit.
- “DO Not Enter” if limit exceeded.
- A warning if someone blocks the door too long.

Circuit Diagram



THANKS!