**Smart Alarm System Using Motion Detection**

Group Member :

College of Engineering & Technology,

SRM Institute of Science and Technology, Kattankulathur, Chengalpattu Dt,

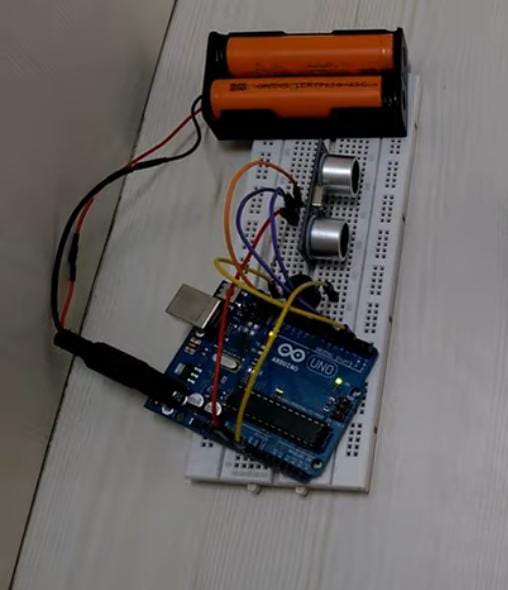
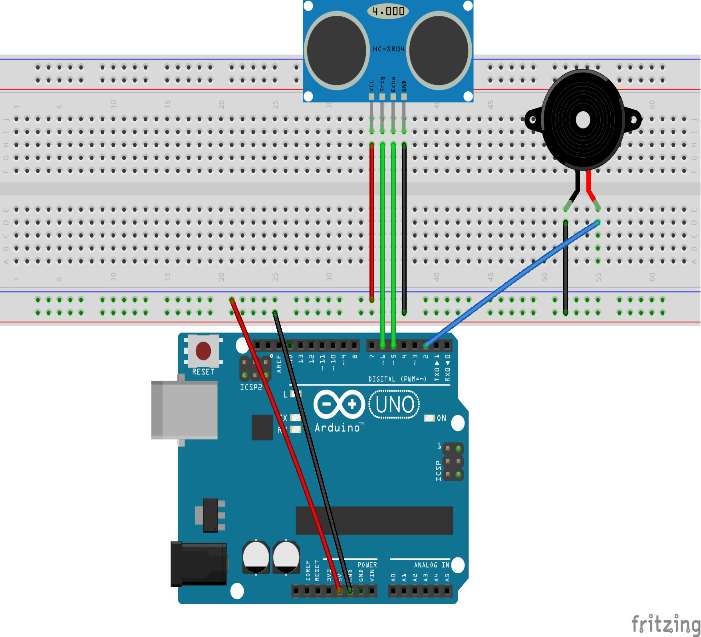
Tamil Nadu

**Dr. R. Maheswaran**

Department of Physics and Nanotechnology, College of Engineering & Technology, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu Dt, Tamil Nadu

The **Smart Alarm System** is an ultrasonic-sensor based alarm. It is distance sensitive so the speed of the buzzer depends upon how close or far the object is. If the object is near then the buzzer beeps faster and if it far then the buzzer beeps slowly. It is an innovative security solution designed to enhance home and office safety through real-time motion detection. This project integrates an Arduino microcontroller with an ultrasonic sensor and a motion detection module to create an intelligent and automated alarm system. The ultrasonic sensor is used to detect objects or individuals within a predefined range by emitting sound waves and measuring the time it takes for the waves to reflect back. When motion is detected, the system triggers an alarm, such as a buzzer or siren, to alert the user of potential intrusions or unauthorized movement. The use of Arduino ensures flexibility and ease of modification, allowing for future upgrades, such as integrating it with Wi-Fi modules or other sensors for advanced features like remote monitoring or controlling the alarm system. Overall, this project demonstrates how simple components can work together to create an effective, smart security system.

Materials Required: Arduino UNO, connecting wires, jumping wires, Buzzer, ultrasonic- sensor, Object to detect.

****