**Smart Alarm System Using Motion Detection**

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**Distance Indicator Using Servo Motor and Ultrasonic Sensor**

The **Distance Indicator** is an innovative system that visually represents object proximity using a servo motor and an ultrasonic sensor. As an object approaches, the servo motor adjusts its position to indicate distance, providing an intuitive and real-time distance measurement solution for automation and safety applications.

The system operates using an **Arduino microcontroller**, which processes data from the **ultrasonic sensor**. The sensor emits sound waves and calculates the distance based on their reflection time. The servo motor then moves to a corresponding angle, offering a clear visual representation of the detected object's distance.

This setup is useful in various fields, such as **automated parking systems, obstacle detection, and robotics**. With Arduino's flexibility, the system can be further enhanced by integrating **LCD displays, wireless communication, or additional sensors** for advanced functionality.

**Required Components:**

* Arduino UNO
* Connecting wires
* Jumper wires
* Breadboard
* Servomotor
* Ultrasonic sensor
* Target object for detection

 