

1. Distance Measurement Display:

Connect an ultrasonic sensor and a 7-segment display to the Arduino. Program it to measure the distance to an object in front of the ultrasonic sensor and display the result on the 7-segment display.

<https://www.tinkercad.com/things/6PqBf1JQ2OK-distance-measurement-display>

2. Smart Distance Counter:

Connect both an ultrasonic sensor and a touch sensor to the Arduino. Display a counter on the 7-segment display that increments every time an object (such as a hand) crosses a specified distance threshold (detected by the ultrasonic sensor). Use the touch sensor to reset the counter.

<https://www.tinkercad.com/things/1kD4T2j1gjM-smart-distance-counter>

3. Touch-Activated Range Finder:

Program the Arduino to take a distance reading from the ultrasonic sensor only when the touch sensor is activated. Display the measured distance on the 7-segment display and hold the value for 5 seconds before clearing.

<https://www.tinkercad.com/things/iFwO8HjVoTk-touch-activated-range-finder-partial>

4. Countdown Timer with Obstacle-Activated Reset:

Use the touch sensor to start a countdown on the 7-segment display. If the ultrasonic sensor detects an obstacle (within a specified range) during the countdown, reset the timer. Display "E" on the display if the countdown completes without interruption.

<https://www.tinkercad.com/things/bU9ot1zHsry-countdown-timer-with-obstacle-activated-reset>

5. Digital Stopwatch:

Create a simple stopwatch using an LCD display and two buttons. Use one button to start/stop the stopwatch and the other to reset it.

<https://www.tinkercad.com/things/lKqpsQnkpeM-digital-stopwatch>

6. Motion-Activated Alarm:

Connect a PIR motion sensor to the Arduino and write code to sound a buzzer when movement is detected. Add a feature to log the timestamp of each detected movement in the Serial Monitor.

<https://www.tinkercad.com/things/6Z7Eur3LMbb-motion-activated-alarm>

7. Temperature Monitoring System:

Using a DHT11 or LM35 temperature sensor, create a temperature monitoring system that reads temperature data and displays it on the Serial Monitor. Adjust the code to send a warning message if the temperature exceeds a certain threshold.

<https://www.tinkercad.com/things/3QNmB4w1d5y-temperature-monitoring-system>

8. People Counter with Direction Detection:

Place an IR sensor on either side of a doorway to count the number of people entering and exiting. Display the count on a 7-segment display. Use the ultrasonic sensor to confirm direction by measuring the time an object passes between the two IR sensors.

<https://www.tinkercad.com/things/hxi9yMzsouk-people-counter-with-direction-detection>

NOTE: TO Demonstrate use Tincker cad application(online)