RSA ASSIGNMENT ON ARDUINO 30-10-24

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/l5qXsdTWjae-copy-of-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/6l1J4IBpbB8-copy-of-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/hG3Zkne7APi-copy-of-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/lpwxcyR5Wjd-copy-of-4countdown-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/fSFhI7qVl4Z-copy-of-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/eB7pWASKXCV-copy-of-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/4PoWLVaItne-copy-of-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/jyi0Wftm6q2-copy-of-people-counter-with-direction-detection

NOTE: TO Demonstrate use Tincker cad application(online)