RSAASSIGNMENT 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/6QIKCxmiHXi-1distance-measurement-display?sharecode=0ELpEh8NvTOEOIVQQN4XRqfQa8wS_Htk_qR9vECJI5E

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/a48JoaMI6uJ-2smart-distance-counter?sharecode=D4X0sXKxbX9D9AzwYOizBP1FH7pRoe9a3_WrB4mqa2g

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/9vJ7HcRcLZ1-3touch-activated-range-finder?sharecode=dzOrt7Qfmh74gBhD4EOP0IAVBYkzYpNKfvqb0an2FH0

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/a1J1sKS91B9-4countdown-timer-with-obstacle-activated-reset?sharecode=uteuuhTKDSd9rXEwxv6uh8Gkf2FW1hHpF3Zerj1_aTI

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/jEXcIqWPTEp-5digital-stopwatch?sharecode=ha9F8YYvXLGDm37pZ8rWNKhXlqisbIhfgPcRyaAAza4

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/bxQ1E9y6Zuo-6motion-activated-alarm?sharecode=fZXL_cgwMDePwO1ugVgYH8V-X1UBVEgq9RCkotKao4o

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/2FzAhujOKNH-7temperature-monitoring-system?sharecode=KubnzxS1JoKS3PduY1zDjv760VD3AS2Yv1I8mxorhF0

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/1vCSoC4cJF8-people-counter-with-direction-detectiom-?sharecode=dUrTIRh4iYVXotsHHYN6o0_7MdjIYO8tFE-djKaaDtU

NOTE: TO Demonstrate use Tincker cad application(online)