CAPE INSTITUTE OF TECHNOLOGY

LEVINGIPURAM

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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Assignment-4

1.Write Code and connections in wokwi for ultrasonic sensor. whatever distance is less than 100 cms send "Alert" to ibm cloud and display in device recent events.

Code

```
// put your setup code here, to run once:
const int TRIG_PIN = 7 ;
const int ECHO_PIN = 8;

//Anything over 400 cm (23200 us pulse) is "out of range" const
unsigned int MAX_DIST = 23200;

void setup() {

// The Trigger pin will tell the sensor to range find
pinMode(ECHO_PIN, OUTPUT ); digitalWrite(TRIG_PIN,
LOW);

//Set Echo pin as input to measure the duration of //pulses coming back from the
distance sensor
pinMode(ECHO_PIN, INPUT ) ;

// We'll use the serial monitor to view the sensor output
Serial.begin(9600);
} void loop() {   unsigned
long t1;   unsigned long t2;
unsigned long pulse_width;
```

```cpp
float cm;        float
inches;
// Hold the trigger pin high for at least 10 us
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10); digitalWrite(TRIG_PIN,
LOW);

// Wait for pulse on echo pin while
(digitalRead( ECHO_PIN )==0 );

// Measure how long the echo pin was held high (pulse width) // Note: the
micros() counter will overflow after-70 min t1= micros ();
  while (digitalRead(ECHO_PIN) == 1);
t2= micros ();      pulse_width = t2-
t1;

// Calculate distance in centimeters and inches. The constants
//are found in the datasheet, and calculated from the assumed speed
// of sound in air at sea level (- 340m/s)
cm = pulse_width/58; inches =
pulse_width/148.0;

//Print out results if
(pulse_width>MAX_DIST ){
  Serial.println("Out of range");
} else
{
  Serial.println("*******************************");
  Serial.print("The Measured Distance in cm: ");
Serial.println(cm);   if( cm < 100 ){
    Serial.println("ALERT!!");
  }
  Serial.print("******************************");
}

//wait at least 1000ms before next measurement delay(1000);
}
```
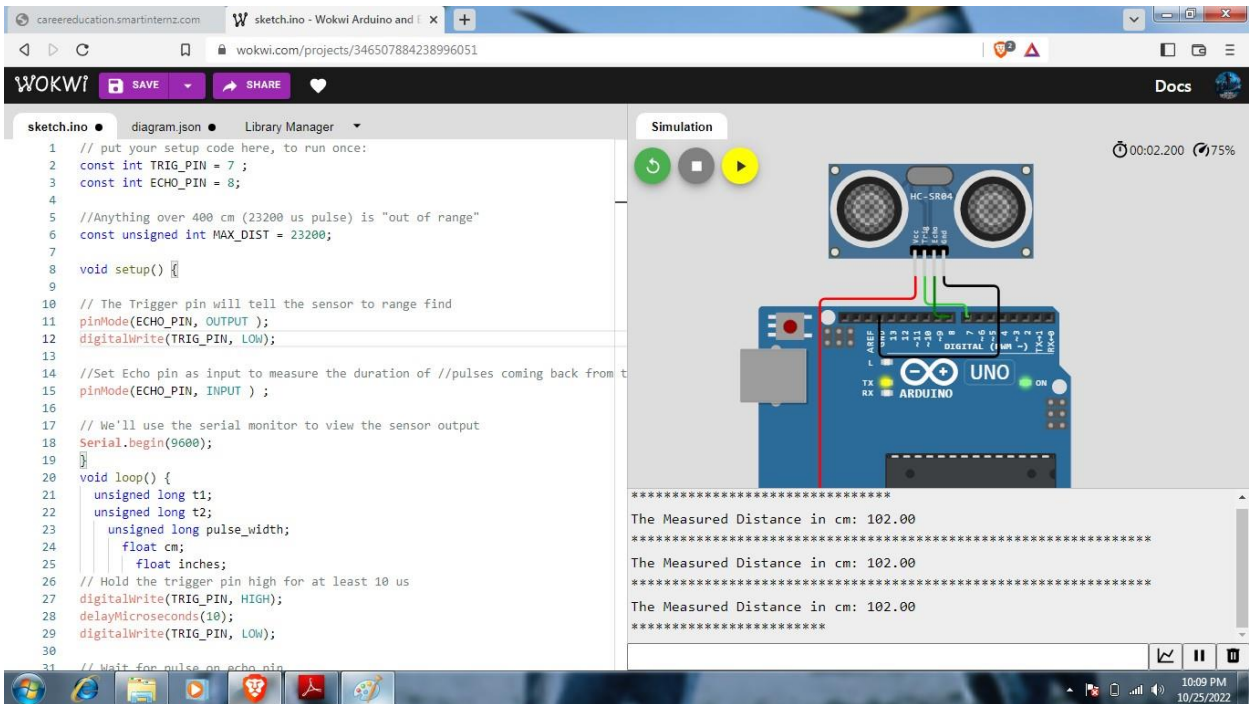
If distance is greater than 100,it will not alert.

If distance is less than 100,it will alert.