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| Assignment Date | 15.10.2022 |
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| Maximum Marks | 2MARKS |

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

```
//Pins
```

```
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
```

```
Pin Mode(TRIG_PIN, OUTPUT); digital
```

```
Write(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;
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

```

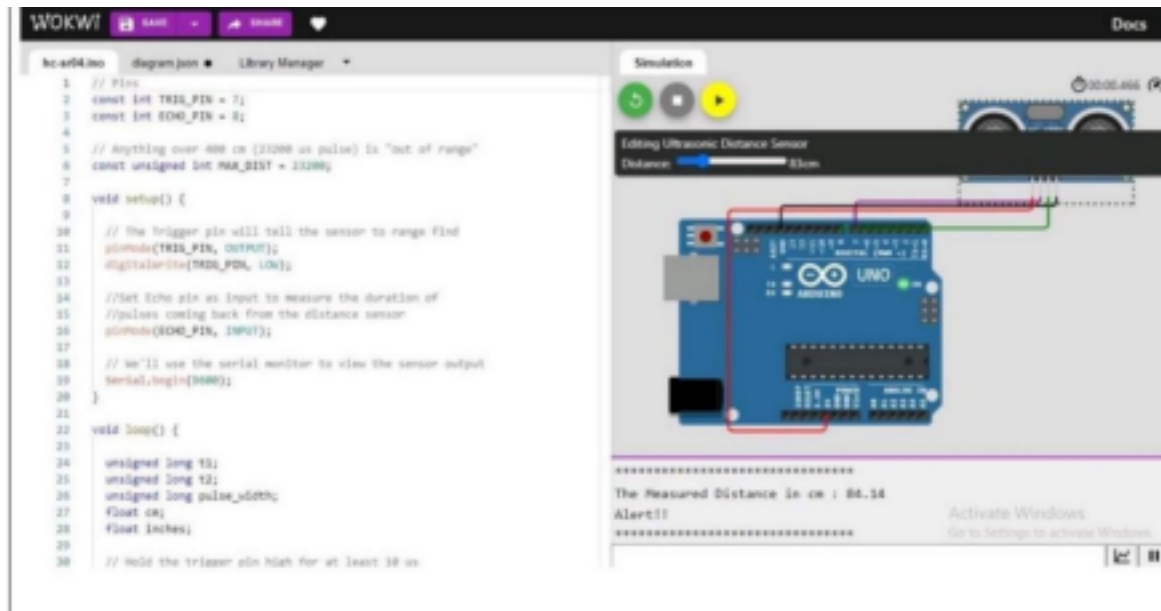
found in the datasheet, and calculated from the assumed speed // of
sound in air at sea level (- 340m/s)

```
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 ){  
//while(true){  
Serial.println("Alert!!");  
//}  
}  
Serial.print("*****");  
}  
  
//wait at least 1000ms before next measurement  
Delay(1000);  
}
```

Output:

1.If the distance is less than 100 centimeters,it alerts.



2.If the distance is more than 100 centimeters,it won't alert

