ASSIGNMENT -4 SMART SOLUTIONS FOR RAILWAYS

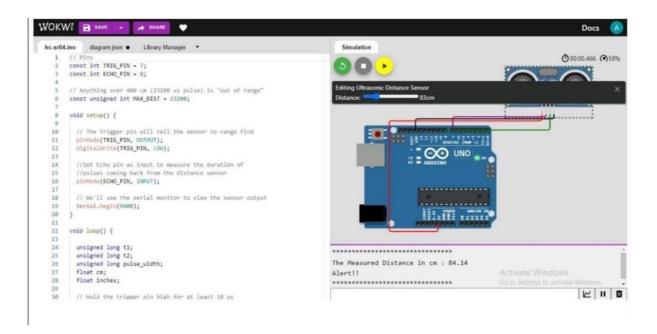
ASSIGNMENT DATE	04 November 2022
PROJECT NAME	SMART SOLUTIONS FOR RAILWAYS
TEAM ID	PNT2022TMID37740
MAXIMUM MARKS	2 Marks

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

```
const int TRIG PIN = 7; const int ECHO PIN = 8;
void setup() {
digital Write(TRIG PIN, LOW);
void loop() { unsigned long t1;
unsigned long t2;
unsigned long pulse width; float cm;
float inches;
while (digitalRead( ECHO PIN )==0 );
while (digitalRead(ECHO_PIN) == 1); t2= micros ();
pulse_width = t2-t1;
inches = pulse width/148.0;
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("*******************************);
}
}
```

Output:

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



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

```
WOKWI - SAVE
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                                                                                                                     Simulation
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           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(TRIG_PIN, OUTPUT);
digitalWrite(TRIG_PIN, LOW);
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                                                                                                                                               UNO WARDUINO
            //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);
}
                                                                                                                                                     PART ANLOS IN
           void loop() {
              unsigned long t1;
unsigned long t2;
unsigned long pulse_width;
                                                                                                                 The Measured Distance in cm : 227.10
                                                                                                                 *************************
              float cm;
float inches;
                                                                                                                                                                                  Activate Windows
```

3. Simulation and code execution

