ASSIGNMENT -4 SMART SOLUTIONS FOR RAILWAYS

ASSIGNMENT DATE	04 November 2022
PROJECT NAME	SMART SOLUTIONS FOR RAILWAYS
TEAM ID	PNT2022TMID37659
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.

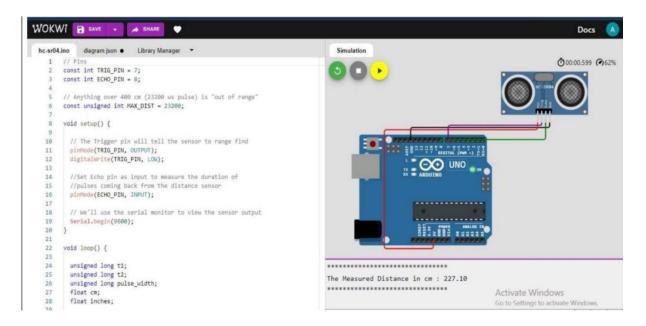
```
const int TRIG PIN = 7; const int ECHO PIN = 8;
void setup() {
digital Write(TRIG PIN, LOW);
void loop() { unsigned long t1;
unsigned long t2;
unsigned long pulse width; float cm;
float inches;
while (digitalRead( ECHO PIN )==0 );
while (digitalRead(ECHO PIN) == 1); t2= micros ();
pulse width = t2-t1;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

```
WOKWI - SAVE - SHARE
                                                                                                                                                                                                      Docs (A)
hc-sr04.ino
                 diagram json ● Library Manager ▼
                                                                                                               Simulation
                                                                                                                                                                                               ₫00:00.466 (%58%
            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);
                                                                                                                                        OO UNO
              //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);
}
                                                                                                                                             ANILOS IN ANILOS IN
            void loop() {
              unsigned long t1;
unsigned long t2;
unsigned long pulse_width;
float cm;
float inches;
                                                                                                            The Measured Distance in cm : 84.14
                                                                                                           Alert!!
                                                                                                            W II 0
              // Hold the trigger pin high for at least 10 us
```

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



3. Simulation and code execution

