RAJALAKSHMI ENGINEERING COLLEGE

Department of Electronics and Communication Engineering

IOT ASSIGNMENT

Topic: Assignment on home automation using Arduino

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1.WriteCodeandconnectionsinwokwiforultrasonicsensor.whatever distanceisless than100cms send“Alert”toibmcloudaand displayindevicerecentevents.

Solution:

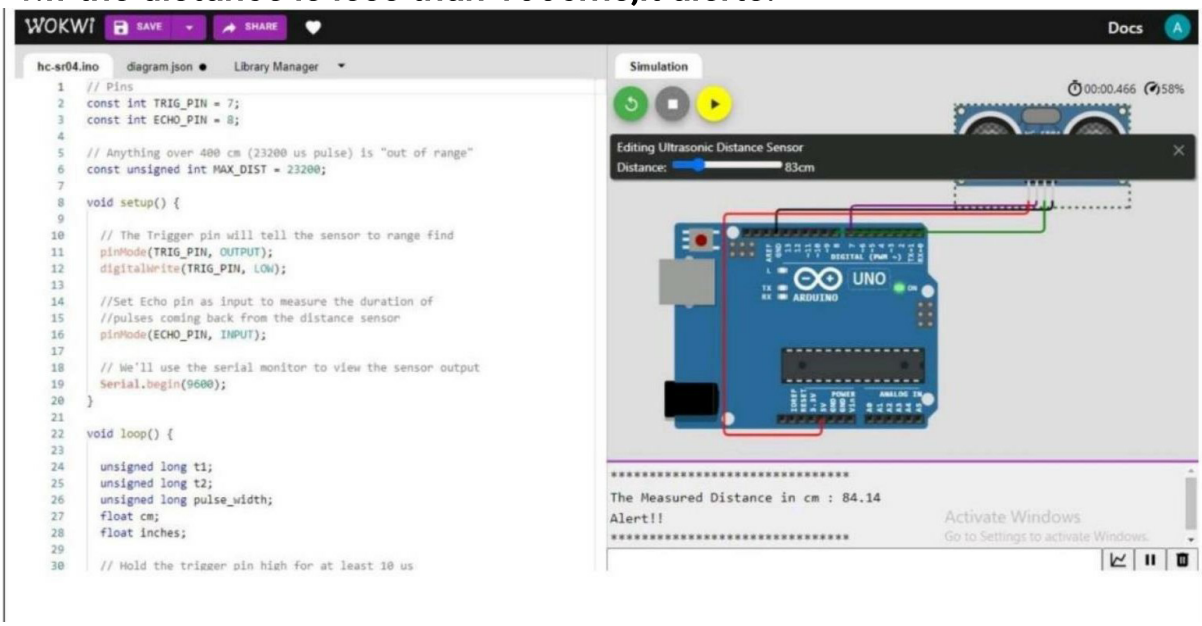
```
 //Pins
const int TRIG_PIN =
7
 ;constintECHO_PIN=
8;

//Anythingover400cm(23200us
 pulse)is"outofrange"constunsignedintMAX_DIST=2320
 0;

voidsetup(){

//TheTriggerpinwilltellthesensortorangefindPin
 Mode(TRIG_PIN, OUTPUT);
digitalWrite(TRIG_PIN,LOW);

//SetEchopinasinputtomeasure the duration of
 //pulsescomingbackfromthedistancesensorpinMode(E
CHO_PIN,INPUT);
```

```
//We'llusetheserialmonitortoviewthesensoroutputSerial.
 begin(9600);
}
voidloop(){unsi
gnedlongt1;
 unsignedlongt2;
 unsignedlongpulse_widt
 h;floatcm;
 floatinches;
//Holdthetrigger
pinhighforatleast10usdigitalWrite(TRIG_PI
N,
HIGH);delayMicroseconds(10);digitalWrite
(TRIG_PIN, LOW);

//Waitforpulseonechopin
while(digitalRead( ECHO_PIN)==0);

//Measure howlongtheechopinwas held high(pulsewidth)
 // Note: the micros() counter will overflow after-70
 mint1=micros ();
  while (digitalRead(ECHO_PIN) ==
   1);t2=micros ();
   pulse_width= t2-t1;

 //Calculate distanceincentimetersandinches.Theconstants
 //arefoundinthedatasheet,andcalculatedfromtheassumedspeed
 // of sound in air at sea level (-
```

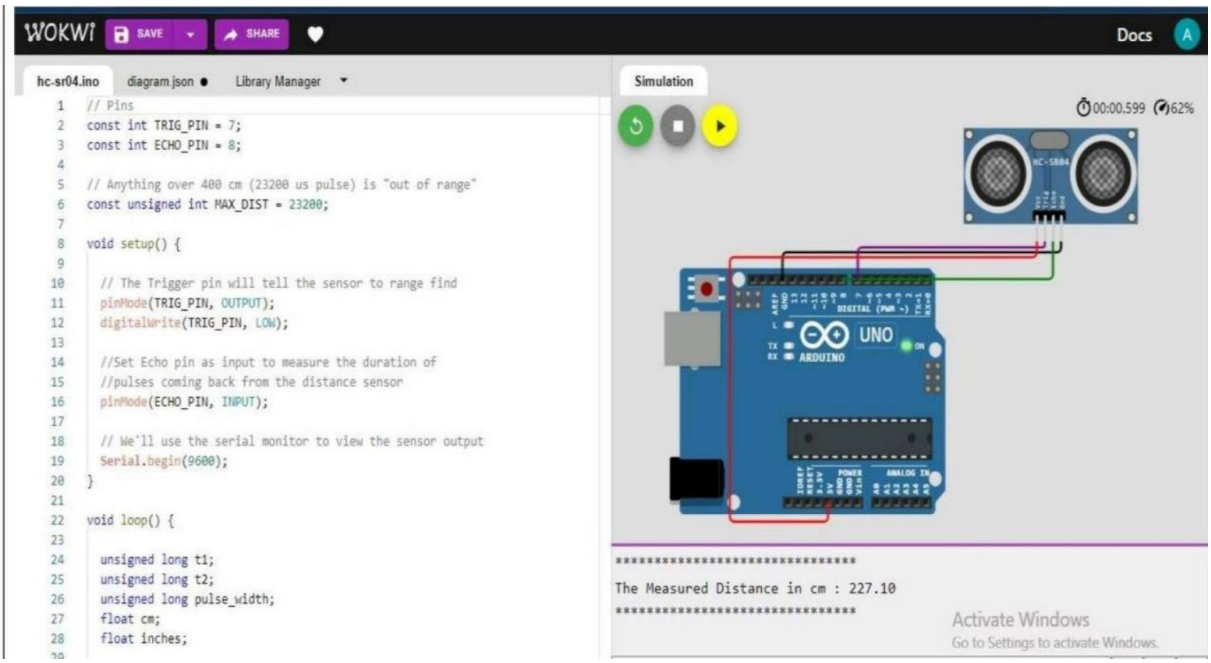
```
 340m/s)cm=pulse_Width /58;
 inches=pulse_width/148.0;
//Printout results
if (pulse_width >MAX _
DIST
 ){Serial.println("Outofrange
");
} else
{Serial.println("*******************************”);Serial.pri
nt("The Measured Distance in cm: ");Serial.println(cm);

if( cm<100){
     //while(true){
      Serial.println(“Alert!!”);
      //}
}
Serial.print(“***********************************”);
}
//wait at least 1000ms before next
measurementDelay(1000);
}
```

Output:

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



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



3.Simulation and code execution