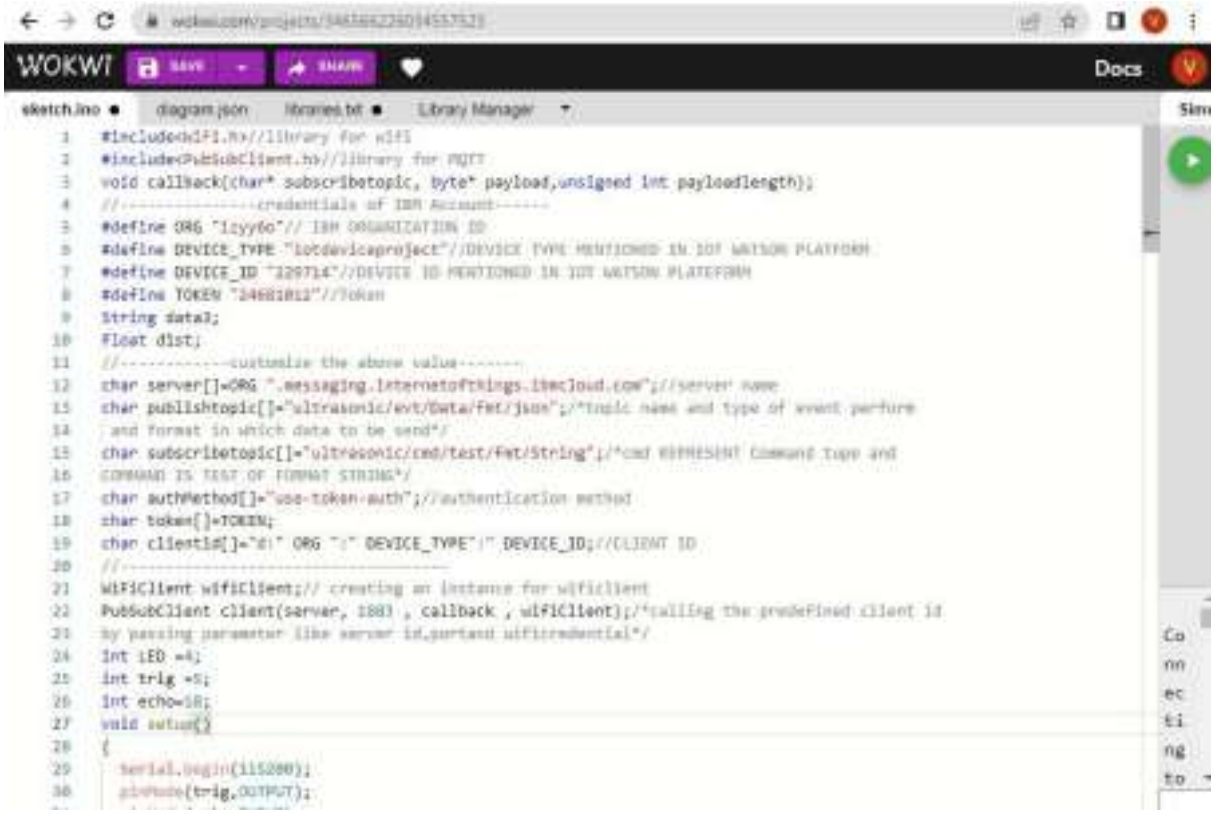
Assignment -4

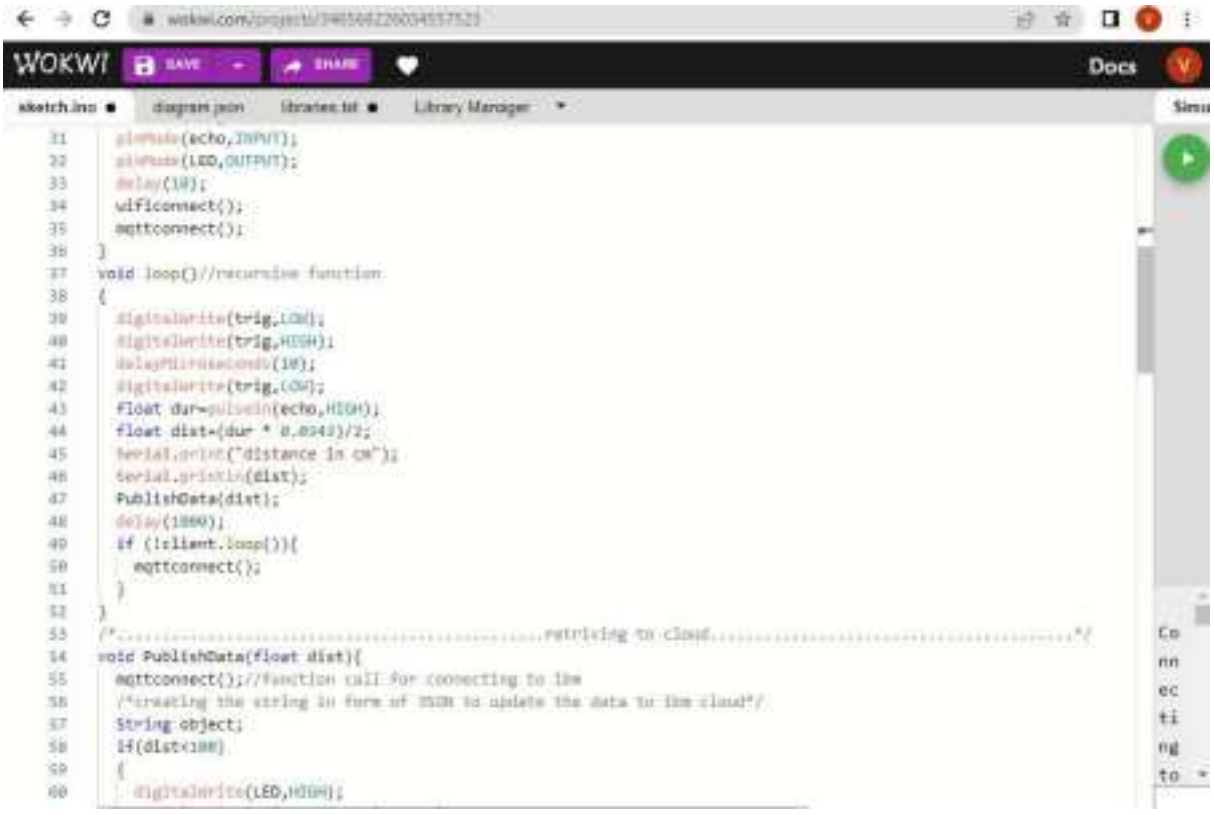
Assignment Date	25 October 2022
Student Name	Arunkumar.R
Student Roll Number	812419106008
Maximum Marks	2 Marks

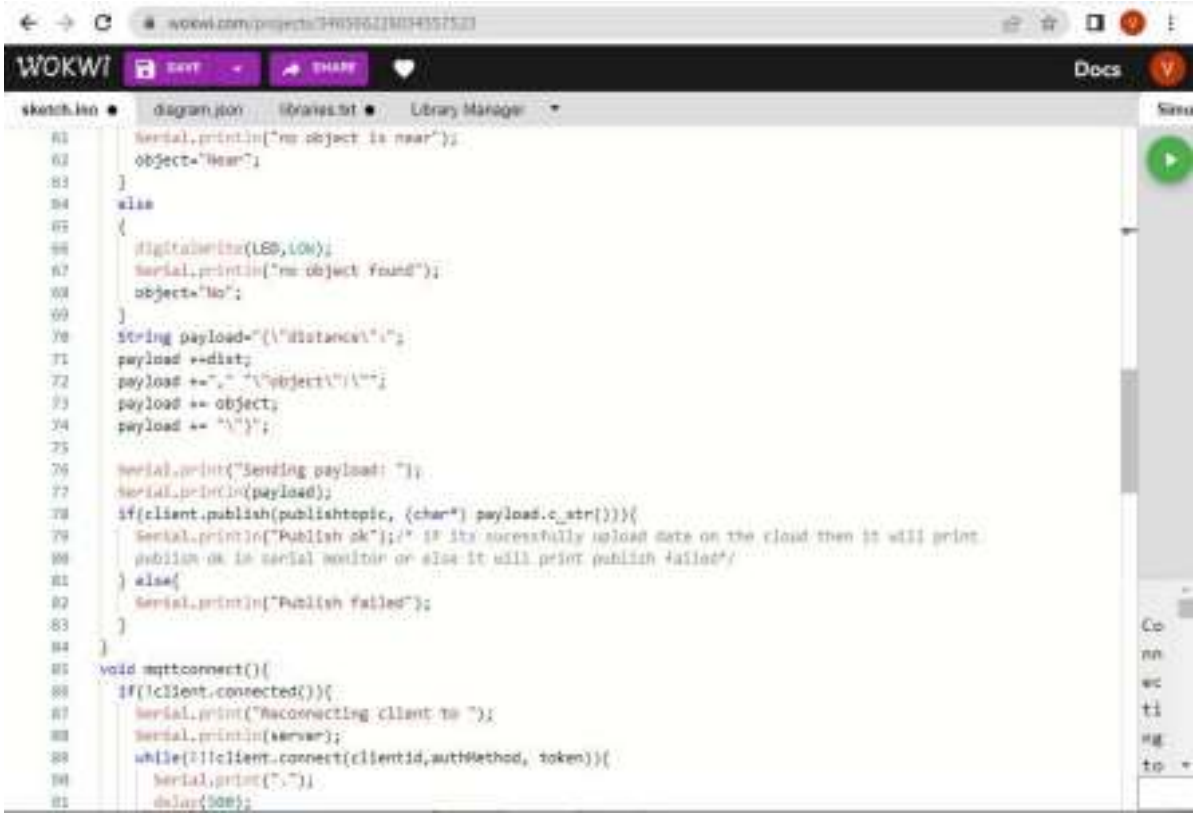
Question-1:

Write code and connections in wokwi for ultrasonic sensor.
Whenever distance is less than 100 cms send "alert" to ibm cloud and display in device recent events. Upload document with wokwi share link and images of ibm cloud

Solution:




WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
pinMode(echo,INPUT);
pinMode(LED,OUTPUT);
delay(10);
wificonnect();
mqttconnect();
}
void loop()//recursive function
{
digitalWrite(trig,LOW);
digitalWrite(trig,HIGH);
delayMicroseconds(10);
digitalWrite(trig,LOW);
float dur=pulseIn(echo,HIGH);
float dist=(dur * 0.0343)/2;
Serial.print("distance in cm");
Serial.println(dist);
PublishData(dist);
delay(1000);
if (!client.loop()){
mqttconnect();
}
}
/*.....retriving to cloud.....*/
void PublishData(float dist){
mqttconnect();//function call for connecting to ibm
/*creating the string in form of JSON to update the data to ibm cloud*/
String object;
if(dist<100)
{
digitalWrite(LED,HIGH);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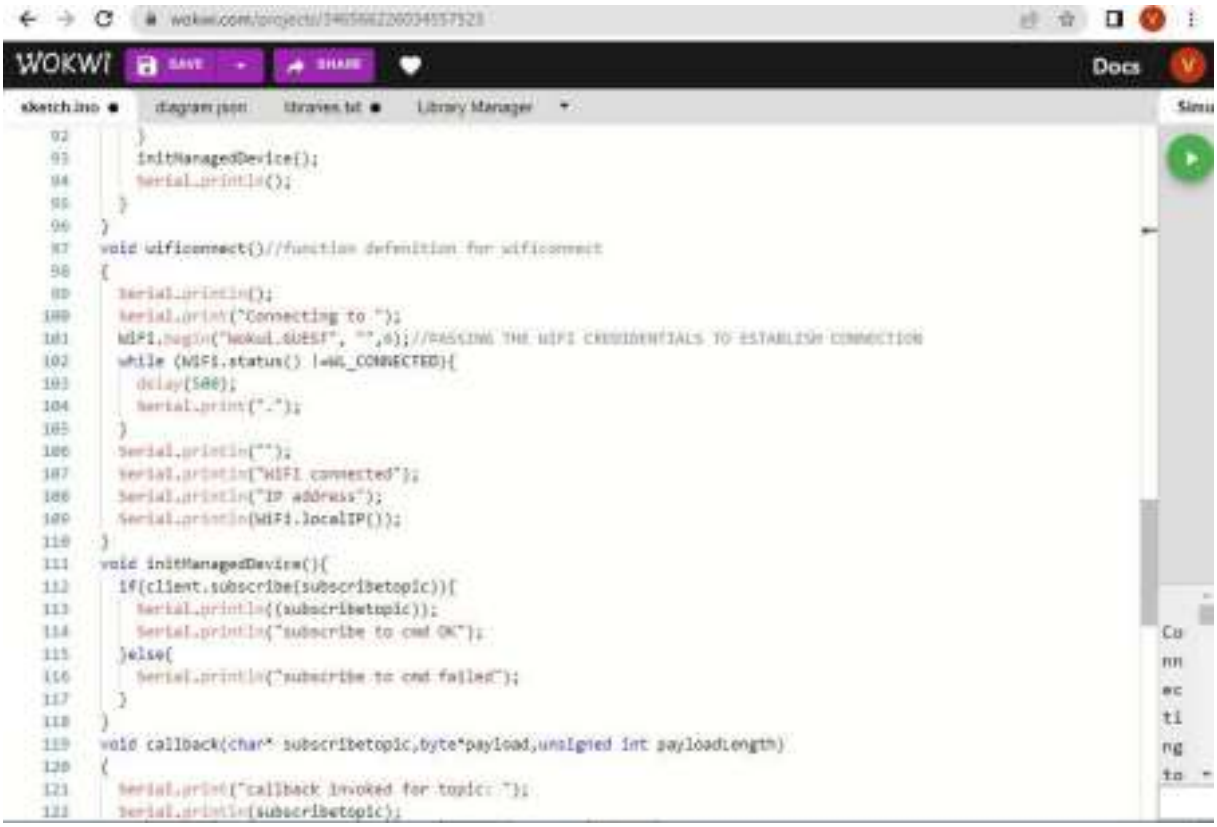
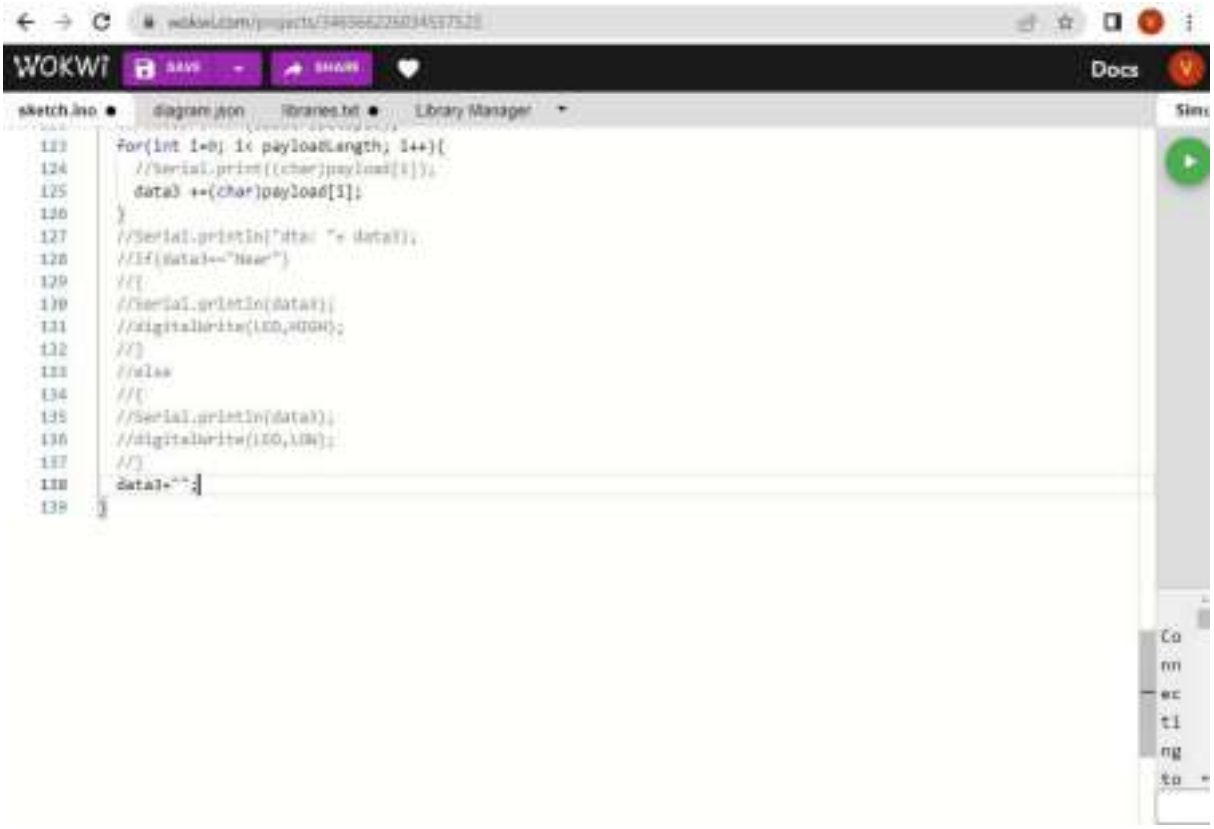
Library Manager
Serial.println("no object is near");
object="Near";
}
else
{
digitalWrite(LED,LOW);
Serial.println("no object found");
object="No";
}
String payload="{\"distance\":";
payload +=dist;
payload +="," "\"object\":\"";
payload += object;
payload += "\"}";
Serial.print("Sending payload: ");
Serial.println(payload);
if(client.publish(publishtopic, (char*) payload.c_str())){
Serial.println("Publish ok");/* if its sucessfully upload data on the cloud then it will print
publish ok in serial monitor or else it will print publish failed*/
} else{
Serial.println("Publish failed");
}
}
void mqttconnect(){
if(!client.connected()){
Serial.print("Reconnecting client to ");
Serial.println(server);
while(!!client.connect(clientid,authMethod, token)){
Serial.print(".");
delay(500);

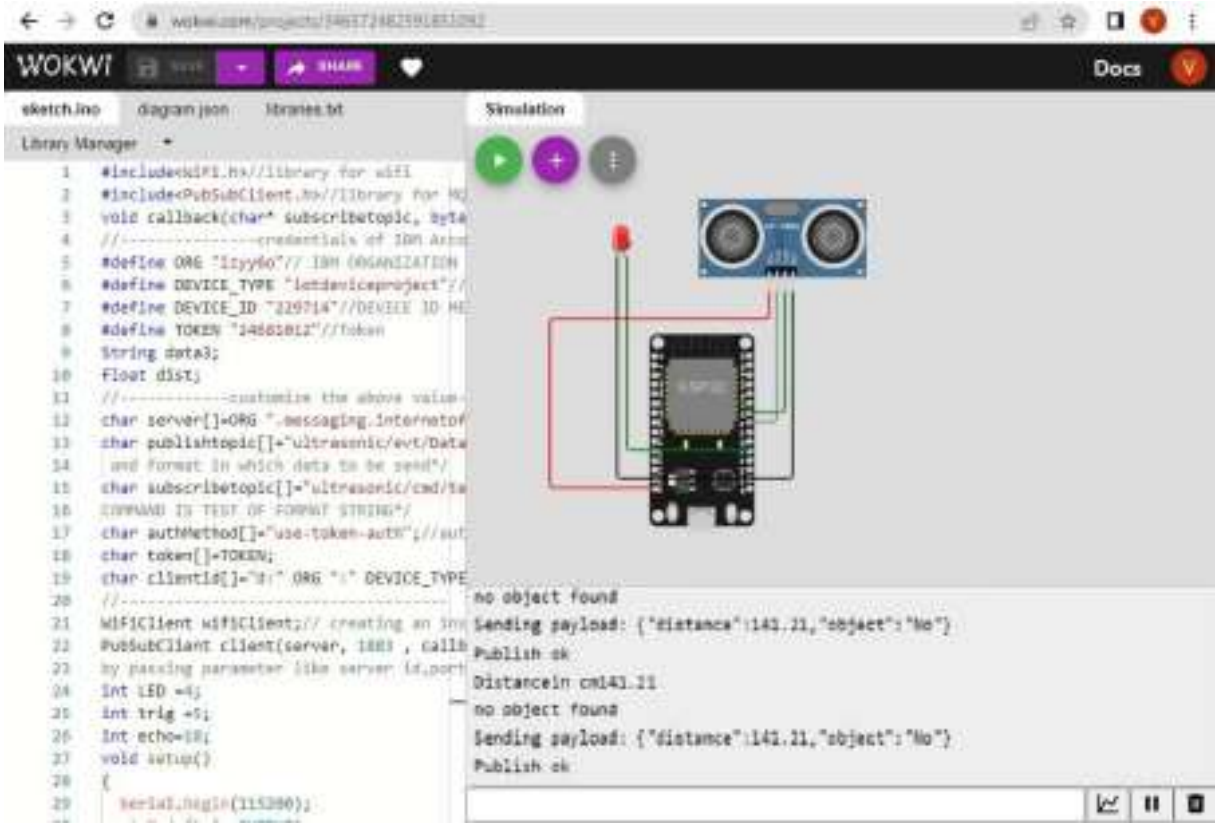


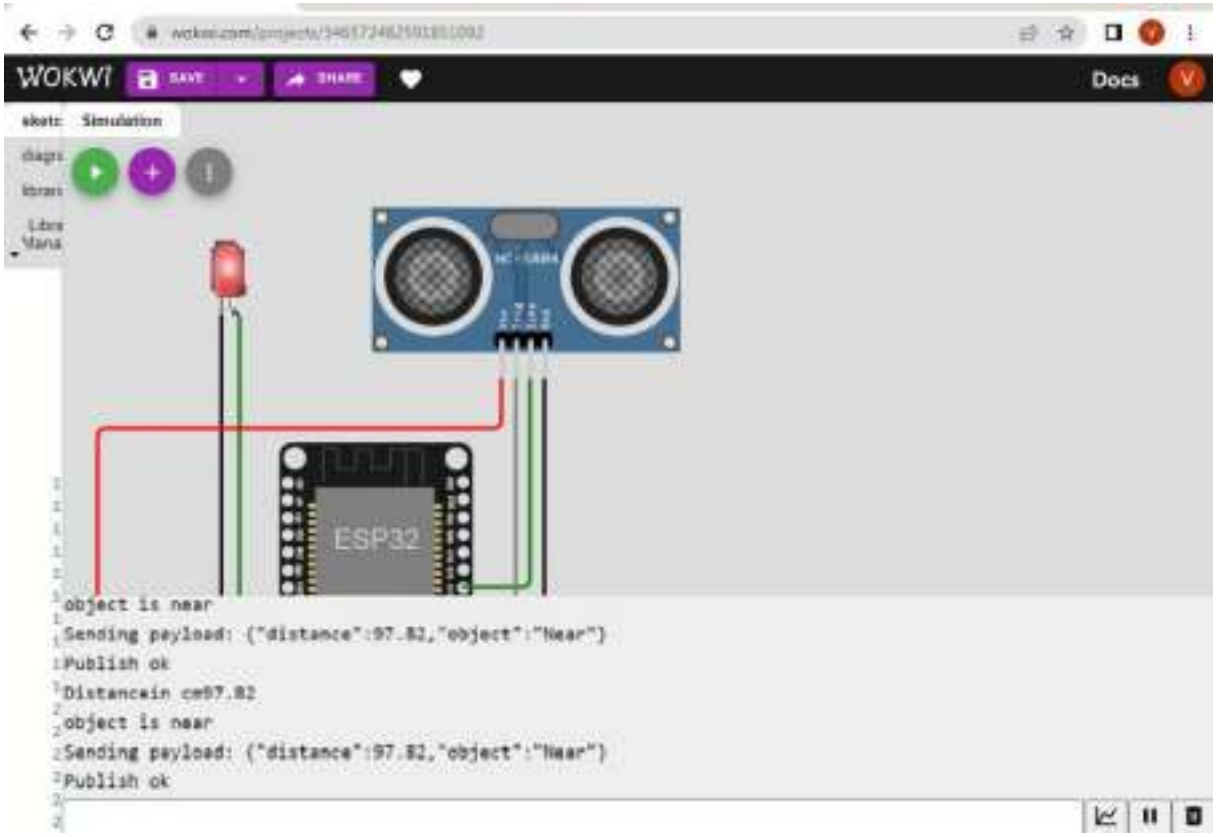


OUTPUT:

DATA IS SENT TO IBM CLOUD WHEN NO OBJECT IS DETECTED

When no object is detected



Data is sent to ibm cloud when object is detected

When object is detected in ultrasonic detector