Sprint-2

TEAM ID	**PNT2022TMID44577**
PROJECT NAME	**Project-IoT Based Smart Crop Protection System For Agriculture**
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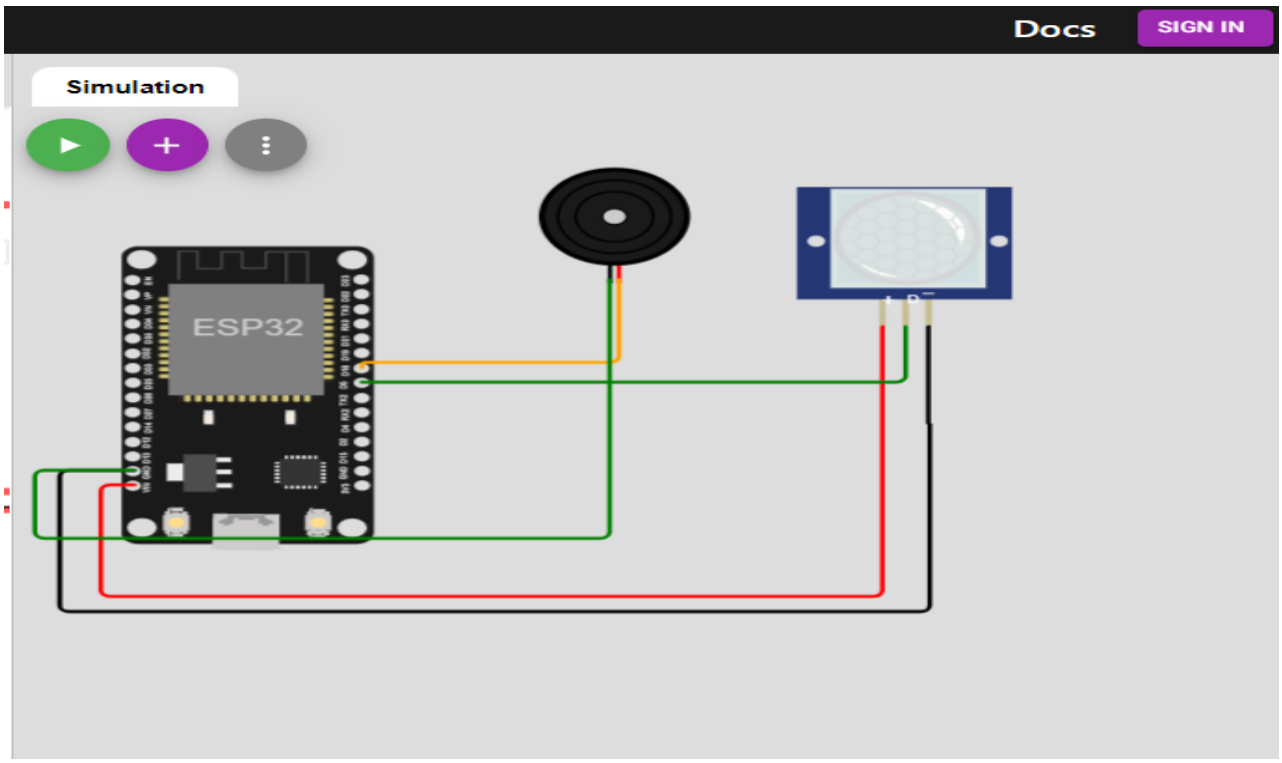
In this activity you are expected to develop & submit the developed code by testing it

CIRCUIT:



CODE:

```
#include <WiFi.h>

#include <PubSubClient.h>

WiFiClient wifiClient;

String data3;
```

```
#define ORG "c5ah4g"
#define DEVICE_TYPE "App-1"
#define DEVICE_ID "13"
#define TOKEN "12345678"
#define speed 0.034
#define led 14
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/shreedharen/fmt/json";
char topic[] = "iot-2/cmd/led/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient);



const int inputPin =5;
const int buzzerPin=18;
const pirState =LOW;
int val =0;

String command;
```

```
String data="";

long duration;
float dist;



void setup()
{
  Serial.begin(115200);
  pinMode(inputPin, INPUT);
  pinMode(buzzerPin, OUTPUT);

  wifiConnect();
  mqttConnect();
}

void loop() {
  bool isNearby = dist < 100;
  digitalWrite(buzzerPin, isNearby);

  publishData();
  delay(500);
```

```
  if (!client.loop()) {
    mqttConnect();
  }
}

void wifiConnect() {
  Serial.print("Connecting to "); Serial.print("Wifi");
  WiFi.begin("Wokwi-GUEST", "", 6);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.print("WiFi connected, IP address: ");
Serial.println(WiFi.localIP());
}

void mqttConnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting MQTT client to ");
Serial.println(server);
    while (!client.connect(clientId, authMethod, token))
{
      Serial.print(".");
      delay(500);
    }
```

```
    initManagedDevice();
    Serial.println();
  }
}

void initManagedDevice() {
  if (client.subscribe(topic)) {
    // Serial.println(client.subscribe(topic));
    Serial.println("IBM subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}
void publishData()
{
  digitalWrite(inputpin,LOW);
  digitalWrite(inputpin,HIGH);
  delayMicroseconds(10);
  digitalWrite(inputpin,LOW);
  duration=pulseIn(buzzerpin,HIGH);
  dist=duration*speed/2;
  if(dist<100){
    String payload = "{\"Alert Distance\":";
    payload += dist;
```

```
    payload += "}";


    Serial.print("\n");
    Serial.print("Sending payload: ");
    Serial.println(payload);
    if (client.publish(publishTopic, (char*)
payload.c_str())) {
      Serial.println("Publish OK");
    }


  }
    if(dist>100){
    String payload = "{\"Distance\":";
    payload += dist;
    payload += "}";


    Serial.print("\n");
    Serial.print("Sending payload: ");
    Serial.println(payload);
     if(client.publish(publishTopic, (char*)
payload.c_str())) {
      Serial.println("Publish OK");
    }else {
      Serial.println("Publish FAILED");
```

```
    }

}


}
```