

Industrial IoT and Industry 4.0

**SMOKE DETECTOR USING IOT**

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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

**BONAFIDE**

Certified that this project report titled , “SMOKE DETECTOR USING IOT”.

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Submitted for Naan Muthalvan Industrial IoT and Industry 4.0 .

**Internal Coordinator External Trainer**

# AIM:

The aim of project is could be to develop a system that utilizes the internet of things technology integrated with sensor to detect a smoke in indoor and environment of industry and thereby enhancing safety measures and providing early warnings in case of potential fire hazards.

# HARDWARE SPECIFICATIONS:

 NodeMCU

 MQ2 sensor

 Buzzer

 Bread Board

 Jumper Wires

# SOFTWARE SPECIFICATIONS:

 Arduino IDE

The Arduino IDE (Integrated Development Environment) is used to write the computer code and upload this code to the physical board.

# MQ2 SENSOR:

MQ2 gas sensor is an electronic sensor used for sensing the concentration of gases in the air such as LPG, propane, methane, hydrogen, alcohol, smoke and carbon monoxide.

MQ2 gas sensor is also known as chemiresistor. It contains a sensing material whose resistance changes when it comes in contact with the gas. This change in the value of resistance is used for the detection of gas.

# NODE MCU:

The ESP8266 WiFi Module is a self contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your WiFi network. The ESP8266 is capable of either hosting an application or offloading all WiFi networking functions from another application processor.

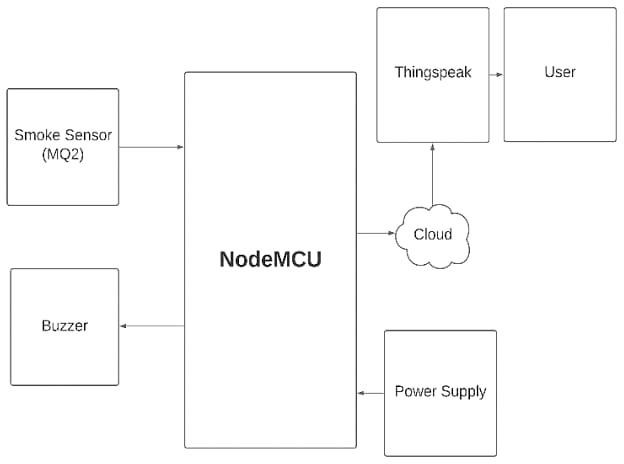
**BUZZER:**

The buzzer can be programmed to sound when the measured distance falls below or exceeds a certain threshold. This audible signal can alert users to specific conditions, such as objects being too close or too far away, without the need for constant visual monitoring of the IoT device. It enhances the user experience by providing realtime feedback in addition to any visual or digital notifications.

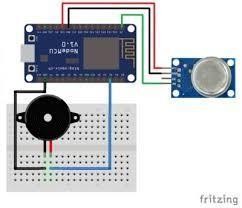
# BLYNK IoT:

Blynk platform powers manufacturers of smart home products, complex HVAC systems, agricultural equipment, and everyone in between. Blynk empowers users to connect their hardware to the cloud and create iOS, Android, and web applications, analyze real-time and historical data from devices, remotely control them from anywhere, receive important notifications and much more.

**BLOCK DIAGRAM:**



**CIRCUIT DIAGRAM:**



**CODE:**

////FOR GRANDEUR

//MQ-2 Smoke Detector #include <ESP8266WiFi.h> #include <SimpleTimer.h> #include <Grandeur.h> #include "recipes/WiFi.h"

// Grandeur credentials.

const char\* apiKey = "grandeurl7rt9rrt01hf0ljl71ed9aco"; const char\* deviceID = "devicel7rtbn5b01hi0ljl6nrk2kig";

const char\* token = "4e79b47b67adbd6fffa8c38b97ed90e64cad9d452f4b080b31586b1070feaa45";

Grandeur::Project project; Grandeur::Project::Device device;

int mq2 = A0; // smoke sensor is connected with the analog pin A0 int data = 0;

int buzzer = D1;

void getSMK (const char\* code,int smk)

{

Serial.print("SMOKE: "); Serial.println (smk);

}

void setup()

{

Serial.begin(9600);

connectWiFi("Ptcl Gpon Al quim", "pakistan123"); project = grandeur.init(apiKey, token);

device = project.device(deviceID); pinMode(buzzer, OUTPUT); pinMode(buzzer, OUTPUT);

}

void loop()

{

if (project.isConnected())

{

data = analogRead(mq2); device.data().set("smk",data,getSMK);

if (data > 400)

{

tone(buzzer, 6000, 500); delay(400);

}

if (data < 400)

{

digitalWrite(buzzer,LOW);

}

delay(1000);

}

project.loop()

**OUTPUT:**

