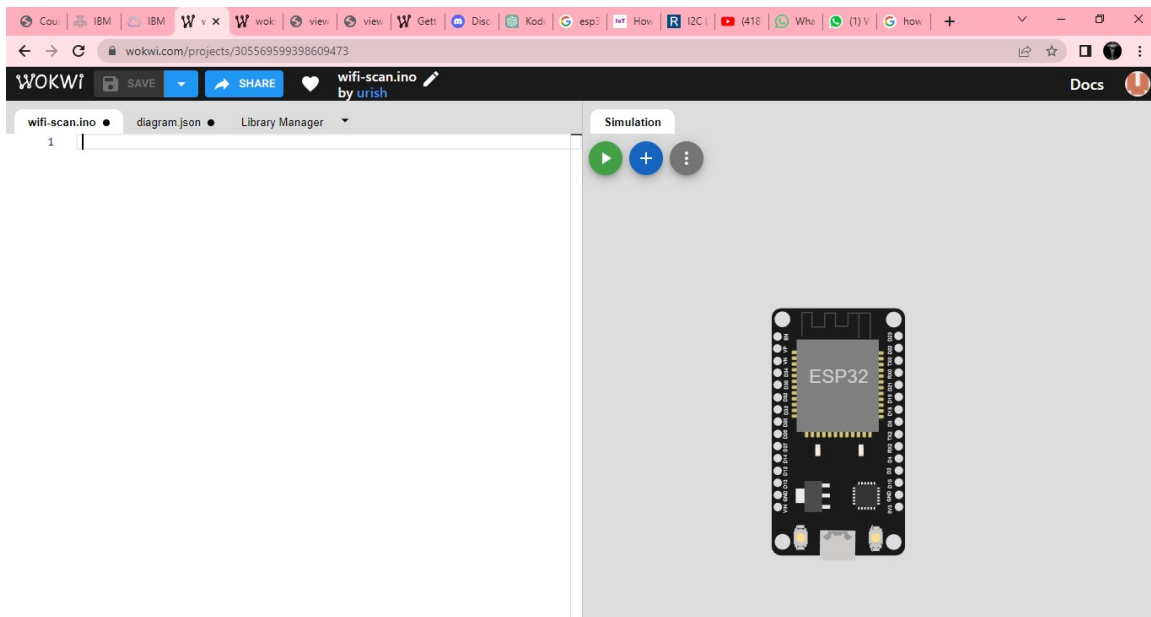


NOISE POLLUTION MONITORING

[DEVELOPMENT]

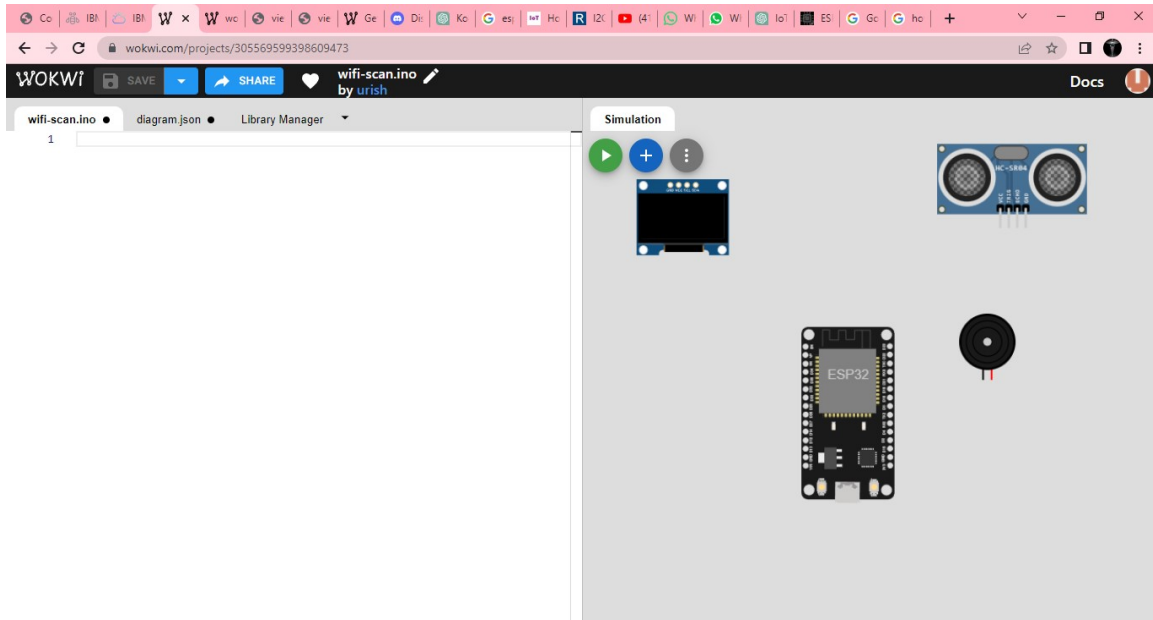
STEP 1:

This is an ESP32 NodeMCU-based Air Quality monitoring and noise monitoring system to check particulate matter (PM), humidity, temperature, altitude and pressure levels. Various environmental conditions of the place are tested and displayed on the TFT display as well as on ThingSpeak IoT (Internet of Things) platform.



Ultrasonic sensors are excited simultaneously in order to accelerate the repetition. We use stochastic coding of the transmitted signals and adaptive filtering of the received signal to avoid both, interference of the sensors in the array and interference with other ultrasonic sensor systems.

The piezo, also known as the buzzer, is a component that is used for generating sound. It is a digital component that can be connected to digital outputs, and emits a tone when the output is HIGH. Alternatively, it can be connected to an analog pulse-width modulation output to generate various tones and effects.



STEP2:

ESP32:

Connect the ESP32 to your computer for programming and power.

Ultrasonic Sensor (e.g., HC-SR04):

VCC to 5V (or 3.3V if your sensor supports it)

GND to GND on ESP32

TRIG to a GPIO pin on the ESP32 (e.g., GPIO4)

ECHO to a GPIO pin on the ESP32 (e.g., GPIO5)

Buzzer:

Connect one terminal of the buzzer to a GPIO pin on the ESP32 (e.g., GPIO12).

Connect the other terminal of the buzzer to GND on the ESP32.

Display (e.g., OLED):

Connect VCC and GND to the corresponding pins on the display.

Connect SDA to the ESP32's SDA pin (e.g., GPIO4).

Connect SCL to the ESP32's SCL pin (e.g., GPIO5).

