PHASE-2 INNOVATION

NOISE POLLUTION MONITORING SYSTEM

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INTRODUCTION:

The main objective of IOT based noise pollution monitoring system is to monitoring the noise pollution in the industrial in public areas where the user can access the data and monitor the noise pollution in that area. This parameter data can be access by the users through an app which we provide namely as "Blynk" which is user friendly and easy to use. This is made possible by the use of concept of IOT which refers to accessing the devices through internet. Also the Node MCU is used to make the model compact and easy to built with less complexity which is easy to handling this devices.

DESIGN PRINCIPLE

In our proposed model we are using sound sensor to interface it with Node MCU by using relay as it provides to read more than one analog value which overcome the limitation of Node MCU of having only one analog pin. Here the cloud internet global server is used where the information is sent to the cloud server and is accessible by any user around the world using the smart mobiles through an app that we introduced in our model that is **Blynk-10T for Android/105.** The Device has to only be installed in the areas whose pollution monitoring has to be done and the people or authorities of that area can access the data and info about the quantity in the apps through notification. And the threshold values when crossed the alert notification is send to the authority and then a corresponding action can be taken for that issue.

In this Model the sensor will sense the noise where the data is analyze by the sensors and is send to the Node MCU (ESP8266 Wi-Fi SoC) where an analog value for each sensor is generated with help of Relay, the value in db will be generated for noise The information is then send to the cloud memory where the data is stored which then be accessed by the users through the app which is installed in the respective smart phones or computers

Block Diagram:
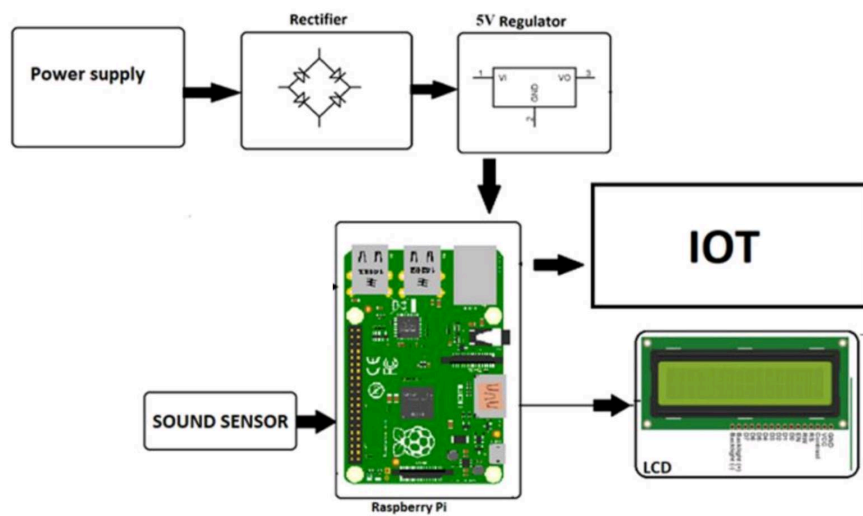
HARDWARE SPECIFICATIONS:

- Sound Sensors
- Node MCU (ESP8266 Wi-Fi SoC)
- Wi-Fi Modem
- LCD Display
- LED's
- Transformer
- Resistors
- Capacitors
- Diodes
- Relay

SOFTWARE SPECIFICATIONS:

- Arduino IDE
- MC Programming Language: C

WORKING PRINCIPLE:

The sound sensor senses the rate of noise as a analog value then its send the analog value through relay to the Node MCU where the Microcontroller reads the value and send it to the cloud server. The sound sensor works on the principle of the vibration of the diaphgram is converted by the sensor into an electrical signal that is sent to the LEGO brick, which knows that sound is

heard. The values are in analog which is made possible through use of Relay as Node MCU only posses one analog pin, the Relay provides 200ms delay which make the reading of 5 different analog reading possible through one analog pin of Node MCU The corresponding values are then send to Microcontroller where with the help of coding a threshold values are set which compares the data from the sensors to the set threshold values. Then these data are send to the server where the server app token is included in the coding done where the server cloud is defined. The app is customized in user friendly way where a gauge for sound sensor value is designed showing the level of noise in dB. Its done in such a way that user can easily understand the effect of the noise pollution in their or any other area.

SUMMARY:

AREA WITH NOISE POLLUTION

SOUND SENSOR

IOT MODULE

CLOUD SERVER
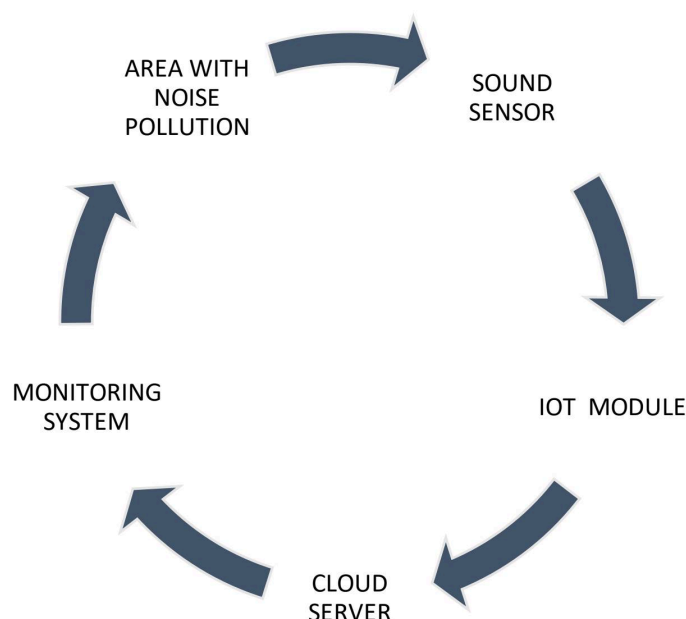
MONITORING SYSTEM

CONCLUSION:

This research proposed a noise pollution monitoring system that constantly keeps track of noise polluted in an area and displays the rate of noise polluted is measured on an application named Blynk Through IOT platform where a device connects with internet on real time slot. The system helps to create awareness of noise pollution in our dailylife. This monitoring device can deliver real-time measurements of noise in a user friendly way.