

Noise Pollution Monitoring

DEFINITION FOR NOISE POLLUTION:

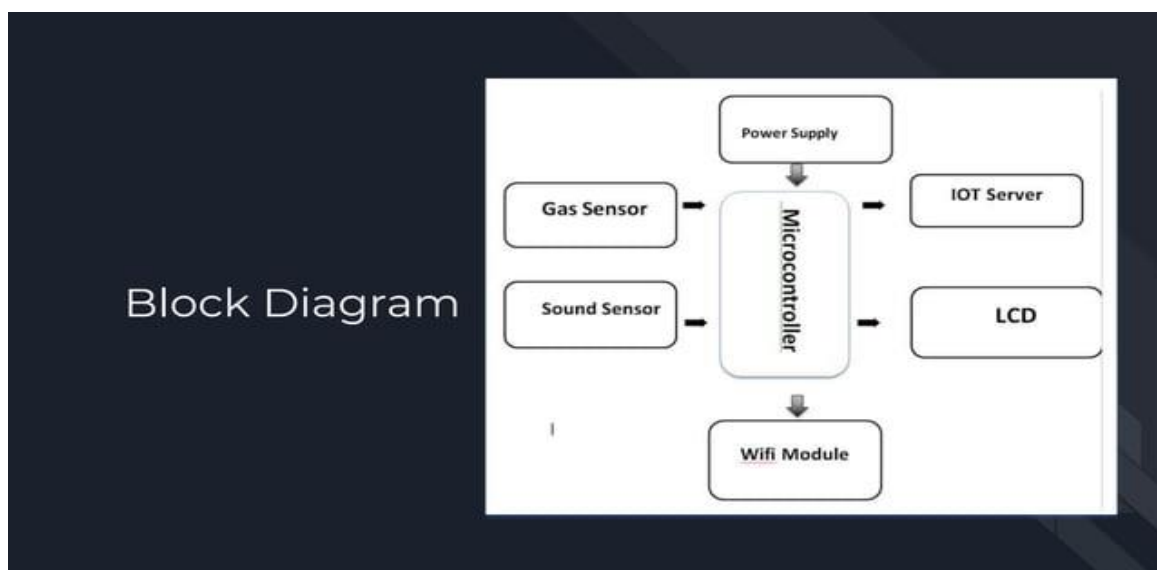
Noise or sound level monitoring or measurement is a process to measure the magnitude of Noise in industries and residential area. Data collected from Noise level monitoring & Testing helps us to understand trends and action can be taken to reduce noise pollution.

ABSTRACTS:

Noise pollution monitoring and environmental impacts on human health in Dehradun City of India are discussed. Major source of noise pollution includes transportation and frequent use of horn in vehicles. Dehradun is at a cross road and prominent national institutions like Survey of India, Oil and Natural Gas Corporation, Forest Research Institute, Indian Military Academy, Indian Institute of Remote Sensing, Wadia Institute of Himalayan Geology, Central and State Government offices are changing Dehradun into a busy, economically active vibrant city. Noise pollution levels (50.70 – 82.54 dB) more than recommended permissible limits (30 -75 dB) are observed in the Survey Chock, Prince Chock, Saharanpur Chock, Gandhi Park and Clock Tower. Exposure to high level of noise cause stress on human health such as auditory, nervous system, insomnia, hearing loss, reducing efficiency, sexual impotency, cardiovascular, respiratory, neurological damages and limiting the human life. The execution of an appropriate management strategy for limiting noise pollution on affected sites is recommended.

PROBLEM STATEMENT ON NOISE POLLUTION :

Noise pollution impacts millions of people on a daily basis. The most common health problem it causes is Noise Induced Hearing Loss (NIHL). Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress.



NOISE MEASUREMENT:

A) Industrial Noise Measurement:

Industrial Noise is the loud sound in industries. In general, it is produced, at every stage in the industry by various aspects like welding, hammering, drilling, blowing, running machinery, motors, sheet metal work, lathe machine work, operation of cranes, grinding, turning, fabricating, forging, compressing, breaking, moulding, steaming, boiling, cooling, heating, venting, painting, pumping, packing, transporting etc. It creates very serious of large-scale noise problems; significantly affect the working people as well as surrounding people.



B) Non-Industrial Noise Measurement:

i. Road Traffic Noise:

Road traffic is the most widespread source of the noise. It is directly proportional to the volume of vehicles. Increasing the population is increasing in vehicles and hence increasing of Noise pollution. The major sources of noise in automobiles are exhaust, intake, engine and fan, and tires at high-speed. Noise Level Monitor instrument (or with noise level data logger) measures the noise level.



ii. Residential noise:

In normal day –to – day activities, various home appliances in our residences produce noise. Some of the major sources are Exhaust Fans, lawn movers, grinders, Fan, Cooling & Heating System, T.V & Music System, motors used for pumping etc.

Noise pollution problems solving:

In this device circuit board is programmed to monitor the noise pollution, which is done using the sound sensor which can collect data of noise level and then data is stored locally in memory card attached in this device. Display can also be attached to device so that we can check data and analyze it.

For example: avoid very noisy leisure activities, opt for alternatives means of transport such as bicycles or electric vehicles over taking the car, do your housework at recommended times, insulate homes with noise-absorbing materials, etc.

Future Scope:

In future we modify the system to notify a user about the air quality and noise level it reaches beyond permissible level through sms or app. We can monitor air and sound pollution level at any place of the world.

Conclusion :

By using this project each and every variation we can analyze and inform nearby people in time. We can also analyze data from home using thingspeak. The most important factor of this system is that it is small, cost efficient and portable. Sensors are available easily anywhere. This system fully helpful to save the lives and overcome all the problem related to environment.