

SYNOPSIS

A SMART ENVIRONMENTAL MONITORING SYSTEM USING INTERNET OF THINGS

ABSTRACT:-

In recent decades, the science and engineering professions have been heavily influenced by their responsibilities to the society. This responsibility has been directed towards the protection of public health and welfare. In devising controls for emission of pollutants, scientists and engineers have developed strategies for monitoring the environmental pollution problems. Environmental monitoring IT describes the processes and activities that need to take place to monitor the quality of the environment. All monitoring strategies and techniques have reasons and justifications which are often designed to establish the current status of an environment or to establish trends in environmental parameters. In this paper, we have proposed an idea to monitor pollution using IOT Techniques. The extent to which the environment gets affected is noted and corresponding control and prevention practices are implemented. The Higher Officials in that area gets notified about the pollution range and the necessary steps are taken. By controlling the environmental pollution the cities are devoid of health issues.

INTRODUCTION:-

The IOT has a large role to play in future smart cities. The IOT can be used in practically all scenarios for public services by governments. Sensor-enabled devices can help monitor the environmental impact of cities, collect details about sewers, air quality, and garbage. Such devices can also help monitor woods, rivers, lakes, and oceans. Many environmental trends are so complex, that they are difficult to conceptualize. The Internet of Things (IOT) is a recent communication paradigm that envisions a near future, in which the objects of everyday life will be equipped with microcontrollers, transceivers for digital communication and suitable protocol stacks that will make them able to communicate with one another and with the users, becoming an integral part of the Internet. An urban IOT can provide means to monitor the quality of the air in crowded areas, parks, or fitness trails. The realization of such a service requires that air quality and pollution sensors be deployed across the city and that the sensor data be made publicly available to citizens.

Air quality eggs can be found across Western Europe, America. It also plays a major role in developing countries. This

is a community-led air quality sensing network that allows anyone to collect very high resolution readings of NO₂ and CO concentrations outside of their home. Sensor networks are also being deployed in tunnels to monitor air flow, visibility, and a range of gases (CO, CO₂, NO₂, O₂, SH₂ and PM-10). Other sensor networks measure temperature, humidity and similar parameters on highways to qualify them as 'smart roads'. Due to the vast technological developments in the field of wireless communication technology it has led to the emergence of many Pollution monitoring sensors and wireless networks for monitoring and reporting pollution.

Some of the pollution monitoring sensors is given as follows :-

Waspnote : Waspnote along with the gas sensors board allows monitoring the following parameters to determine the quality of air we breathe.

CitiSense : Researchers at the University of California, San Diego have developed a network of Smartphone-based air pollution monitors that allow individuals to track pollution levels in real time and feed a central database of air quality trends citywide throughout the day.

HARDWARE REQUIREMENTS:

TRANSMITTER:-

1. Controller
2. Power supply
3. LCD display
4. CO2 sensor
5. Temperature sensor
6. Humidity sensor
7. ADC
8. GPS

RECEIVER:-

1. PC

ADVANTAGES : -

1. Low cost and reliable.
2. Accurate and very fast.

APPLICATIONS :-

1. Coal mines.
2. Industrial.
3. House hold.

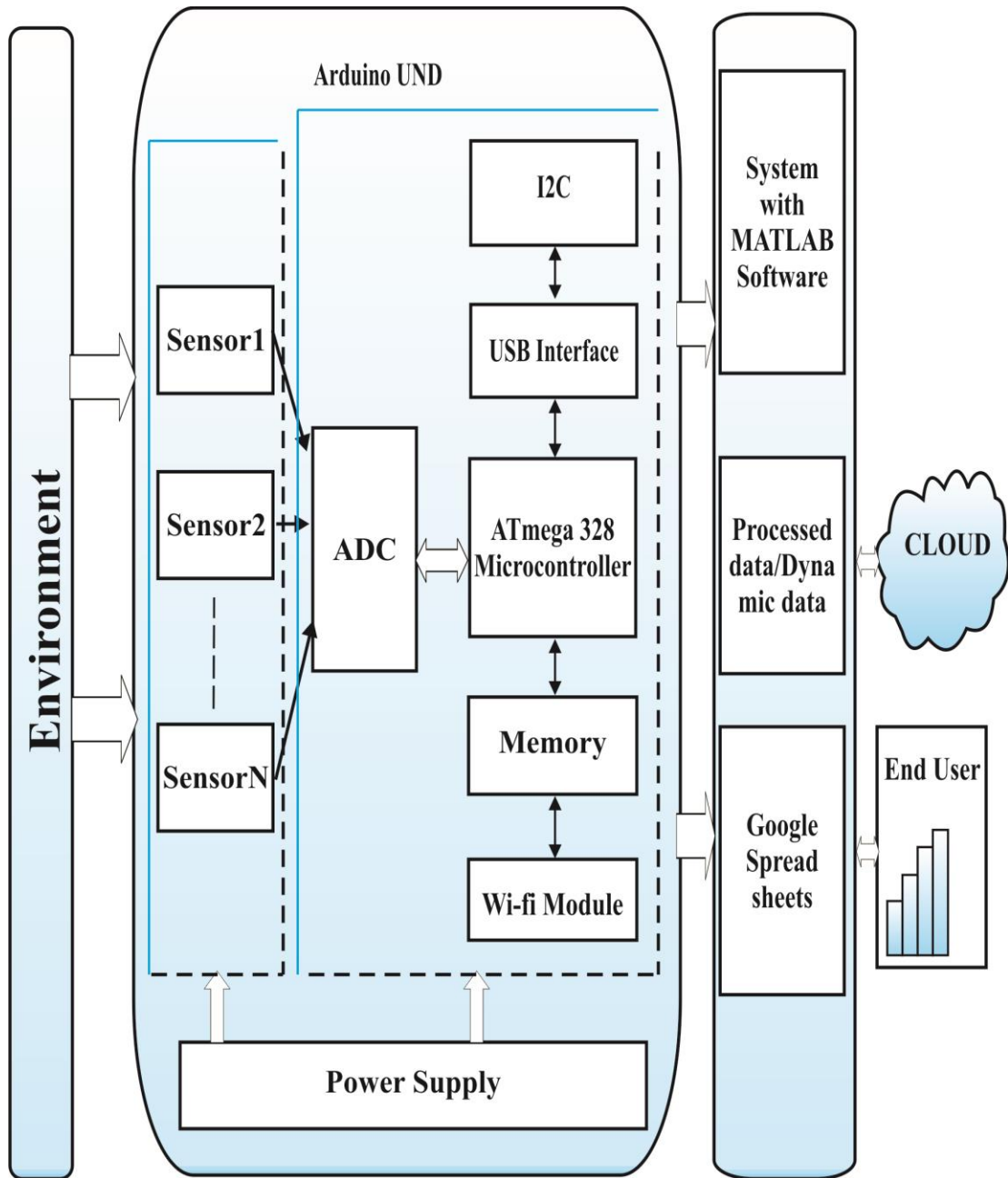


Figure:- Schematic diagram of implementation model

