**IBM NAAN MUDHALVAN**

**SKILL UP**

PROJECT TITLE: ENVIRONMENTAL MONITORING

COLLEGE: PERI INSTITUTE OF TECHNOLOGY

DEPT: ELECTRONICS AND COMMUNICATION ENGINEERING

DOMAIN: INTERNET OF THINGS (IOT)

Submitted By:

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**PHASE-1**

**1.1Abstract**:

The Internet of Things (IoT) is known to play a critical capacity in regular daily existence the entire way through inescapable sensor correspondence networks that epitomize our general climate. Such framework is gives the plan capacity to screen fundamental actual occasions produced information that can be moved and put away in the cloud from which it is feasible to share this data by means of utilization and choice is made to make a move for a happened occasion. Ecological Monitoring framework uses sensors for encompassing area moistness and temperature. The detected information will be sent to cloud space, and the cloud is gotten to by a Smartphone application and results are introduced to end clients. The review is done the sort sensors, microcontroller and its ability, investigation of various kind's economical organization arrangement for ceaseless information assembling and checking. Different instruments used to investigate the information put away on the cloud

**1.2 Introduction:**

IoT environmental monitoring is a process that uses Internet of Things (IoT) technology to collect data about the environment, such as air quality, temperature, and humidity levels. This data can then be analysed to better understand the indoor and outdoor environment and make informed decisions about how to reduce the impact of negative aspects of the local environment on the business. Alternatively, it can be used to change business activities to help protect the planet or the local community. These IoT-based systems can be used to detect issues in the environment that are largely invisible, normalised or taken for granted.

**1.3 Project Definition:**

environmental monitoring system definition and how IoT supports these processes. IoT-based environmental monitoring is the consistent collection of measurements and data from our physical environment, using sensors and connected devices. Sensors embedded in irrigation systems, pipelines, tanks, weather stations, oceanic applications, and industrial equipment can detect temperature, moisture, water levels, leaks, and other physical properties. Intelligent, connected devices with embedded communications modules can then process that information using edge computing technology, and rapidly send critical data to the cloud for further action or analysis.

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**1.4 Objective:**

The main objective of environmental monitoring is to manage and minimize the impact an organization's activities have on an environment, either to ensure compliance with laws and regulations or to mitigate risks of harmful effects on the natural environment and protect the health of human beings**.**

**1.5 IOT SENSOR DESIGN:**

In this project many components such as sensors, modules, power sources and so on are used

**SENSOR:**

* Soil sensor
* Temperature
* Humidity sensors
* Gas sensors
* Rain fall sensors
* Light sensor
* Wind speed and direction sensors and so on.

**IoT-Enabled Systems**:

IoT-enabled systems collect data from multiple sources and provide a comprehensive view of the environment. These systems are used to measure long-term trends, identify areas of concern, and monitor environmental changes over time.

**CONNECTIVITY:**

WIFI module

**POWER SOURCE:**

Battery/ Solar

**DATA PROCESSING:**

Data processing will send raw data to a central processing unit.

**1.6 INTEGRATION APPROACH:**

**FOR AIR POLLUTION**, IoT-powered environmental monitoring solutions, when installed for particular premises, can be used to identify the particulate matter in the air and capture the data through sensor devices. Organizations can transfer the data to a cloud platform for processing. Useful information is sent to the user's dashboard.

**Water quality monitoring**. Water is the most essential resource for survival. It requires constant quality monitoring and proper management techniques for effective conservation practices. IoT technology enables smart water meters, sensors and irrigation systems deployed in homes and smart buildings for real-time monitoring of the water consumption patterns. Also, advanced sensor devices are installed to measure the pH levels, oxygen levels and other components, such as contaminants that might be unsafe for drinking purposes. Detecting such parameters offers reliable use cases that are beneficial to promote better human health and contribute to enhanced living standard

**2.3 CONCLUSION:**

Rising environmental contamination is one of the time-consuming tasks because humans are to blame for this dangerous nature that threatens the entire planet. We are accountable for eradicating the pollution issues. Almost all emissions change from time to time. We tracked temperature, smoke and humidity every 50 seconds and used IOT to control the differences. It's a brilliant idea that will carry tracking to a whole new stage. The information gathered by the sensors could be used by officials to take effective action, such as sending out emergency warning notices and evacuating people to safe locations. Further, the introduction of pollution monitoring systems would assist in determining how bad air pollution is on a regular basis and protecting the world from more pollution.