

## Problem Statement:

In today's rapidly changing world, the health of our environment is under constant threat from pollution, climate change, and various human activities. Timely and accurate monitoring of environmental parameters is crucial for assessing the severity of these threats and implementing effective mitigation measures. Traditional environmental monitoring systems often suffer from limited coverage, high maintenance costs, and data lag. This project aims to address these challenges by leveraging IoT (Internet of Things) technology to create an efficient and real-time environmental monitoring system.

The specific problems to be addressed in this project include

**Limited Spatial Coverage:** Conventional monitoring systems are often restricted to a few fixed locations, limiting their ability to provide comprehensive data on environmental conditions across diverse geographical areas.

**High Operational Costs:** Maintaining and operating traditional monitoring equipment can be expensive, making it difficult to establish and sustain an extensive monitoring network.

**Data Latency:** Delayed data transmission and analysis can hinder the timely detection of environmental issues and hamper rapid response efforts.

**Data Integration:** Integration of data from multiple environmental sensors and sources can be complex and may not always be achieved effectively.

**Accessibility:** Existing data may not be easily accessible to the public or relevant authorities, limiting its usefulness for decision-making and public awareness.

This project aims to develop an IoT-based environmental monitoring system that overcomes these challenges, providing real-time, cost-effective, and widely accessible data on environmental parameters. Through the use of IoT technology, we seek to create a network of interconnected sensors capable of continuous data collection, transmission, and analysis, enabling informed decision-making and proactive environmental conservation efforts.