# Phase 1: Problem Definition and Design Thinking

The scope of this document is to identify the problem and find solution for Air Quality Monitoring for internet of things focused on developing for monitoring and managing air quality using IoT.

## Problem Definition:

It has been researched and found that there has been the following issues with Air Quality Monitoring The issues or problems are listed below:

* Widespread air pollution poses severe health and environmental risks.
* Existing systems are limited, costly, and lack coverage.
* Delays in reporting compromise timely responses to poor air quality.
* Data access is restricted, hindering public awareness.
* Traditional stations are expensive to deploy and maintain, limiting monitoring reach.

# Design Thinking:

Having understood the above problem. We would designing a solution which would be able to solve the same.

* Deploy cost-effective, real-time IoT sensors measuring PM2.5, PM10, NO2, SO2, CO, O3, and VOCs for comprehensive air quality monitoring.
* Use a secure, scalable cloud platform for efficient storage, retrieval, and backup of air quality data.
* Develop user-friendly apps with real-time visualization, historical trends, and alert mechanisms for authorities and the public.
* Apply analytics and machine learning for trend identification, enabling informed decisions on air quality.
* Consider environmental impact, regulatory compliance, and public engagement while continually improving the system's accuracy and usability