Phase 1 : Problem definition and design thinking

Problem definition:

Air pollution is one of environmental issues that cannot be ignored. Inhaling pollutants for a long time causes damages in human health. Traditional air quality monitoring methods, such as building air quality monitoring stations, are typically expensive. This project is suitable for air quality monitoring in real time.Design a tool which will sense quality of air and display it in the form of percentage,Sense how much carbon mono-oxide(CO) is present in air and display in the form of percentage,Sense the temperature and display it in degree celcius.

Objective :

To measure and display temperature and humidity level of the environment. To combine advanced detection technologies to produce an air quality sensing system with advanced capabilities to provide low cost comprehensive monitoring. To display the sensed data in user friendly format in LCD display panel.

Design Thinking:

1.Implemented using a network of sensors:

IoT Based Air Pollution Monitoring System Using NodeMCU, an open-source development board, can be integrated with air quality sensors to collect pollutant data. This data can then be transmitted to a cloud-based platform for real-time monitoring and analysis, enabling proactive pollution control measures.

2.Connectivity technologies:

AIRcel URBAN is part of a system that includes a network of outdoor air quality sensors connected to the cloud, releasing real-time data both inside and outside of the unit's sphere of influence. The entire system is plug and play - no structural work necessary.

3.Data analytics platforms.

The data collected cannot be consulted in real-time to be consulted by the authorities to support decision making on possible interventions for enhanced public health. These solutions present accurate relative readings and efficient sensor range and resolution. The maximum sensor error value depends on the sensor measurement range since the accuracy of the sensor is directly influenced by the sensor reading value.