Project :Air Quality monitoring.

Phase1:problem definition and design thinking.

Problem Definition :

air monitoring is the systematic, long-term assessment of pollutant levels by measuring the quantity and types of certain pollutants in the surrounding, outdoor air.

Design thinking :

Designing an air quality monitor involves several key considerations:

1. Purpose: Define the specific goals of your monitor. Is it for personal use, industrial applications, or environmental monitoring?

2. Sensor Selection: Choose appropriate sensors for measuring pollutants like particulate matter (PM2.5, PM10), volatile organic compounds (VOCs), carbon dioxide (CO2), and others.

3. Data Accuracy: Ensure sensor accuracy and calibration for reliable data. Consider sensor drift and maintenance.

4. Connectivity: Decide whether it will be a standalone device or connect to a smartphone or a central system for data analysis and reporting.

5. Power Source: Determine the power requirements, whether it will be battery-operated or plug into an outlet.

6. User Interface: Create an intuitive interface for users to access real-time data and historical records.

7. Alerts: Implement alerts for when air quality reaches unsafe levels, which could be visual or auditory.

8. Data Storage: Plan for data storage and consider cloud integration for remote access.

9. Portability: Decide on the size and form factor of the device for its intended use.

10. Regulatory Compliance: Ensure the monitor complies with relevant air quality standards and regulations.

11. Cost: Balance the features and quality with affordability for the target audience.

12. Aesthetics: Consider the design's aesthetics to make it appealing to users.

13. User Testing: Conduct user testing to gather feedback and make improvements.

14. Sustainability: Think about the environmental impact and end-of-life disposal of the device.

Iterative design thinking, involving user feedback and continuous improvement, is crucial in developing an effective air quality monitor.