IOT PROJECT – PHASE 1.

- PROJECT NAME : AIR QUALITY MONITORING

Problem Definition:

The problem is to create an effective IoT (Internet of Things) air quality monitoring system that accurately measures and reports air quality data in real-time. This system should address the growing concerns about air pollution and its impact on public health and the environment.

Design Thinking Approach:

1. Empathize:

  - Understand the needs of potential users, such as individuals, communities, and environmental agencies, who require air quality data.

  - Conduct surveys, interviews, and observations to gather insights into their preferences and pain points regarding air quality monitoring.

2. Define:

  - Clearly define the problem statement, considering the user needs and environmental goals.

  - Identify key metrics for air quality, such as PM2.5, PM10, CO_2, NO_2, and O_3 levels, that need to be monitored.

3. Ideate:

  - Brainstorm innovative solutions for monitoring air quality using IoT technology.

  - Consider various sensor types, data transmission methods, and data visualization techniques.

  - Explore potential partnerships with environmental organizations or government agencies for data sharing and collaboration.

4. Prototype:

  - Develop a prototype IoT device that can measure air quality using selected sensors.

  - Create a user-friendly interface, such as a mobile app or web dashboard, for users to access real-time air quality data.

  - Ensure the device is energy-efficient and can operate in various environmental conditions.

5. Test:

   - Pilot the IoT air quality monitoring system in a real-world environment to collect data and assess its functionality.

   - Gather user feedback and make necessary improvements to the system's hardware and software based on user input.

6. Implement:

   - Deploy the IoT air quality monitoring system in target locations, such as urban areas, industrial zones, and sensitive ecological regions.

   - Collaborate with local authorities and environmental agencies to integrate the system into their pollution control efforts.

7. Evaluate:

   - Continuously monitor and evaluate the system's performance, data accuracy, and user satisfaction.

   - Implement updates and enhancements based on ongoing feedback and emerging technology trends.

8. Iterate:

   - Use a feedback loop to iterate on the design and functionality of the IoT air quality monitoring system.

   - Stay informed about advancements in sensor technology and data analytics to improve the system over time.

By following this design thinking approach, you can create an IoT air quality monitoring system that addresses the problem effectively and meets the needs of both individuals and environmental stakeholders.

PROJECT BY

R.SWETHA

21EC144

ECE 3RD YEAR