Indoor air quality monitoring system

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SUMMARY of project key points

- **Multiple IoT sensors** to monitor indoor air quality

- **Cloud-based server** for processing and analysis
  data collected by sensors

- Providing **real-time updates** to users

BACKGROUND of problem

Indoor air quality is a significant health concern, **as most students spend a lot of time indoors**. Pollutants can be caused by various sources and can be more concentrated indoors than outdoors. Poor air quality can lead to **health issues ranging from minor irritations to serious diseases**. Hence, monitoring indoor air quality is crucial for health.

CURRENT STATUS

- Created **draft plan** and **set hypothesis**
- **Validated solution** for the hypothesis

THINGS to investigate

1. **The selection of appropriate sensors** for different pollutants and **integration into the IoT network**

2. Examine **how indoor activities** like smoking, cleaning **influence sensor readings**

2.1. Distinguish **between short-term fluctuations and ongoing** air quality problems

3. Developing **logics for data analysis** and interpretation to provide actionable insights

4. Connecting Arduino to the **internet through Wi-Fi**

5. How to manage **power supply** in this system

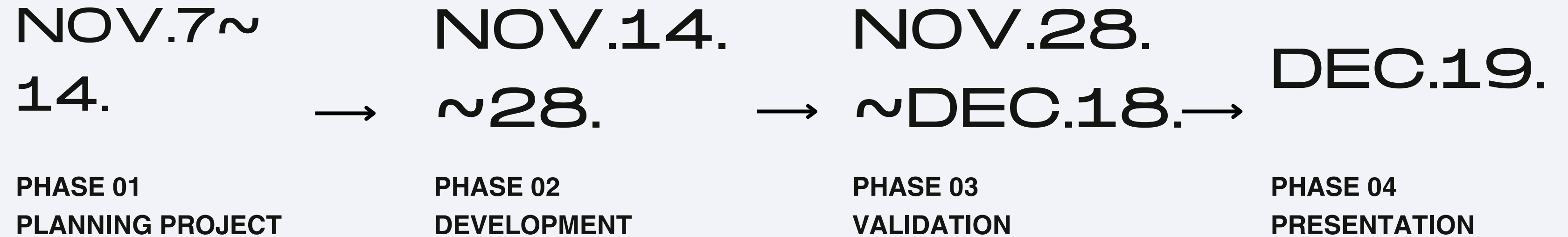6. **Storing the data on cloud** on the internet through wi-fi

⚠ CONSTRAINTS

- Battery and Power supply
- Secure and powerful Wi-Fi connection
- Be cost-effective
- Have a user-friendly interface to understand easily by non-technical users

◎ GOAL

1. To develop **a real-time air quality monitoring system** that can detect various pollutants
2. To integrate IoT sensors with **a centralized data platform** that allows for continuous data collection and analysis
3. To enable **alerts when air quality falls** below certain thresholds

SCHEDULE

NOV.7~14. → **NOV.14.~28.** → **NOV.28.~DEC.18.** → **DEC.19.**

PHASE 01
PLANNING PROJECT

PHASE 02
DEVELOPMENT

PHASE 03
VALIDATION

PHASE 04
PRESENTATION

REFFERENCES

https://github.com/esp8266/Arduino.git
https://www.udemy.com/course/connect-esp8266-wifi-module-to-cloud-with-arduino-end-to-end-g/
https://www.electromaker.io/blog/article/air-quality-sensors-buying-guide-2022