Sri Venkateswara College of Engineering

IOT Based Air Pollution Monitoring System

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Idea Introduction

IDEA TITLE- IOT Based Air pollution monitoring system

Tech Stack
1. Arduino

Resources Needed:
1.Arduino Uno
2.Breadboard
3.Esp8266
4.Esp8266 adaptor
5.Mq135 sensor

Any Third Party Services needed:
1.ThingSpeak

IDEA-OUTCOME – HEADLINE-

Air pollution is the contamination of air due to the presence of substances in the atmosphere that are harmful to the health of humans and other living beings, or cause damage to the climate, animals or to materials. There are many different types of air pollutants, such as gases (including ammonia, carbon monoxide, sulphur dioxide, nitrous oxides, methane, carbon dioxide and chlorofluorocarbons), particulates (both PM10 and PM2.5), and biological molecules. Various pollution control technologies and strategies are available to reduce air pollution. Aim of this project is to identify, monitor and detect major air pollutants released from many major industries like Thermal Power Plants, Nuclear power plants ,and sugar factories using AAQMS(Ambient Air Quality Monitoring System) and CEMS(Continuous Emission Monitoring System)

What is AAQMS & CEMS ?

AAQMS

- Ambient Air Quality Monitoring Systems or AAQMS collects sample of the air and analyze the pollution manually
- Huge volume of sample of air is collected and tested
- Ambient Air Quality Monitoring System is time consuming as it takes 2 to 7 days to give the result of the air sample taken

CEMS

- Continuous Emission Monitoring System gives the real-time reading of the air sample
- Components of CEMS help in sampling , conditioning and sending real-time continuous measurement of the pollution
- It is uses modern technology like IOT (Internet Of Things) for automated data collection and give the result of the air sample within 30 minutes

Our Approach

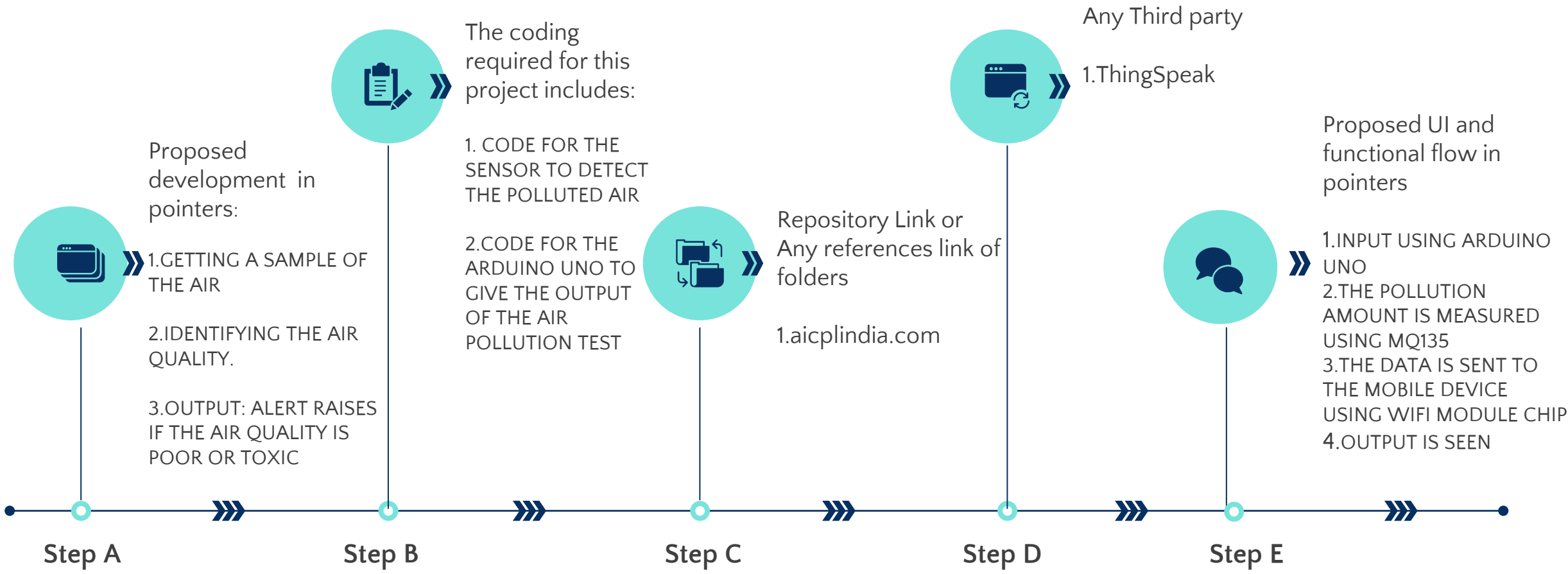
OUR APPROACH ON THIS PROJECT

Encountering the common problem faced in the real world , which is air pollution

We used the idea of AAQMS & CEMS to Identify the pollution level

After identifying the pollution level of the air , the data is sent to the government to take further actions

Development Pipeline



Vision of our Innovation

How we developed Idea:

We've acknowledged a major issue in the real world that would help us improve the quality of life.

This is how our idea can be developed in the upcoming future:

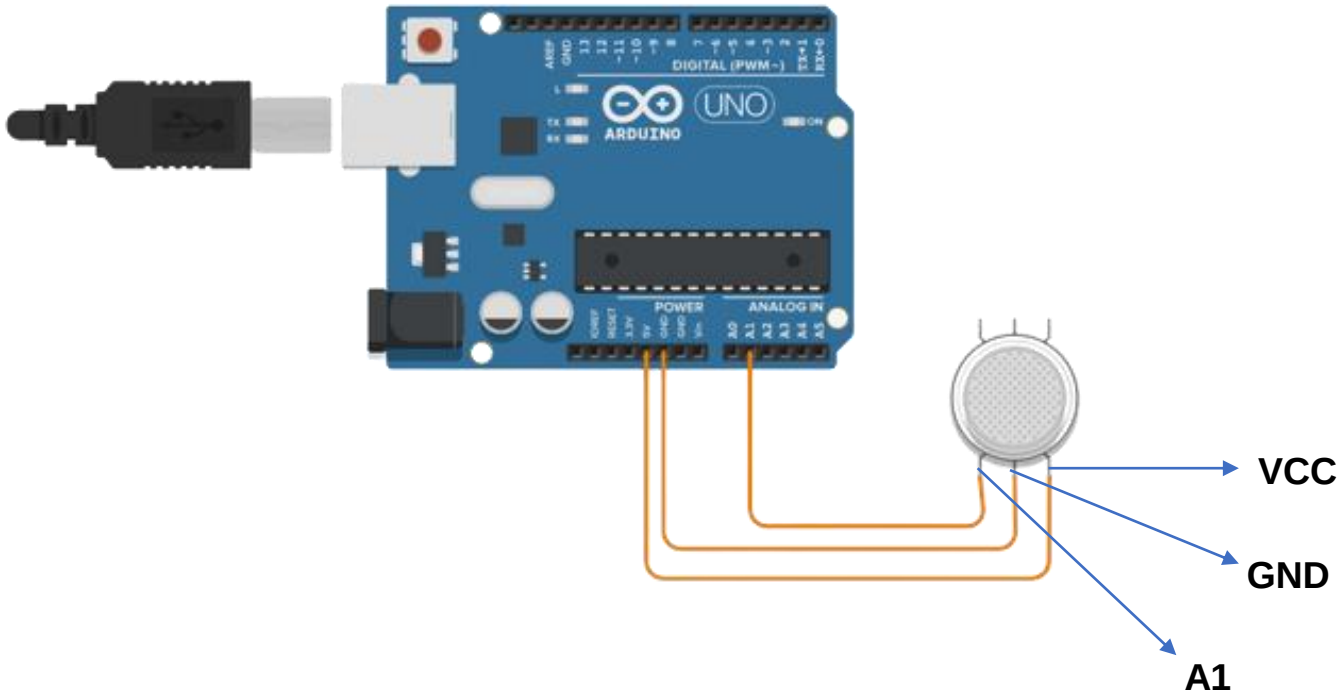
IOT based Air Quality Monitoring System can be made into a miniature , feasible product , for example it can be built inside a smartwatch or a smartphone

It will take 1 month to convert it as a final product

Any early stage innovation:

We decided to treat air pollution as an important issue to address, we can use the idea of this project to identify the toxicity/pollution of air and leakage of gases at school , colleges , factories and home and let the government authority know about it to take further steps .

Prototype Model



Components Used in the Prototype:

- Arduino Uno R3
- Mq135 Gas Sensor
- Male to Male Connector Jumper Cables
- Upload Cable for the Arduino

Abbreviations :

- **VCC** - Voltage Common Collector
- **GND -** Ground
- **A1 –** Analog 1 Port

THANK YOU