Problem
Our core cities in India specifically, but also all around the world are getting very polluted, and people need to know when they need to wear masks. Additionally, we want to spread awareness about the issue of pollution and the vitality of wearing masks.

Idea:
Create a mask that reacts to the pollution in the air, and lights up different colours (Green if normal, Orange/yellow, Red if extremely polluted)

Our Aim:
Create a mask with leds, and a main hub which can be clipped to a bag. This hub should have sensors to measure air quality, a screen to display this, and should be able to wirelessly transmit this exact data up to the mask.
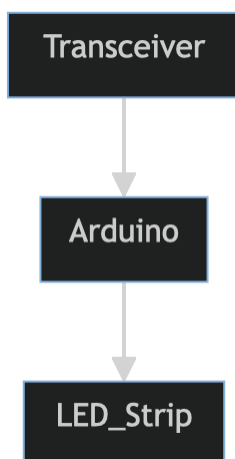
Block diagram based on objectives
Create a block diagram based on the objectives

HUB:
Should be as small as possible

Power	→	Esp8266Wifi	→	GPS_Sensor	→	AQI_API	→	PM2.5SENSOR	→	LCD_DISPLAY	→	Transceiver

The mask:

Code Objective:

HUB
Take input from from the GPS sensor
Input in API
Get AQI Values
Get AQI Values from sensor
Display on LCD screen
Decide which colour to display, based on range
Send value to the mask via transceiver

Mask:
Get values from transceiver
Control LEDs on mask to display colours

Parts (General)

Transceivers:
REES52 NRF2 nRF24L01 2.4GHz Wireless Transceiver x2
For transmission between phone and clip:
HC-05 Bluetooth receiver

For AQI
Adafruit SGP40 Air Quality Sensor/SeedStudio Grove Air quality sensor v1.3

Arduino Nano (For the main receiver)
ESP8266

GPS sensor

LCD display (Silicon TechnoLabs LCD 16x2 Alphanumeric Display BJHD162A)

LED strip

Switches (on/off) (1 switch for the main hub, one button for the mask)

Battery 9V

buzzer(5V Active Electromagnetic Buzzer)

clip(NSSP 41 mm Black Large Paper Clips)