

PNUAIRNOW:

AIR QUALITY DASHBOARD

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Font Awesome



Papa Parse 5



About the project...

- Using HTML, CSS and JS
- Create a responsive web application to monitor and display real-time air quality data
- Including temperature, feelslike temperature, humidity, wind
- PM2.5, PM10, CO, O3, NO2, SO2
- Visualize trends for temperature and humidity over time
- Represent the distribution of various pollutants using Bar charts and Doughnut chart
- Implement color coding to indicate air quality levels

Air quality web page link

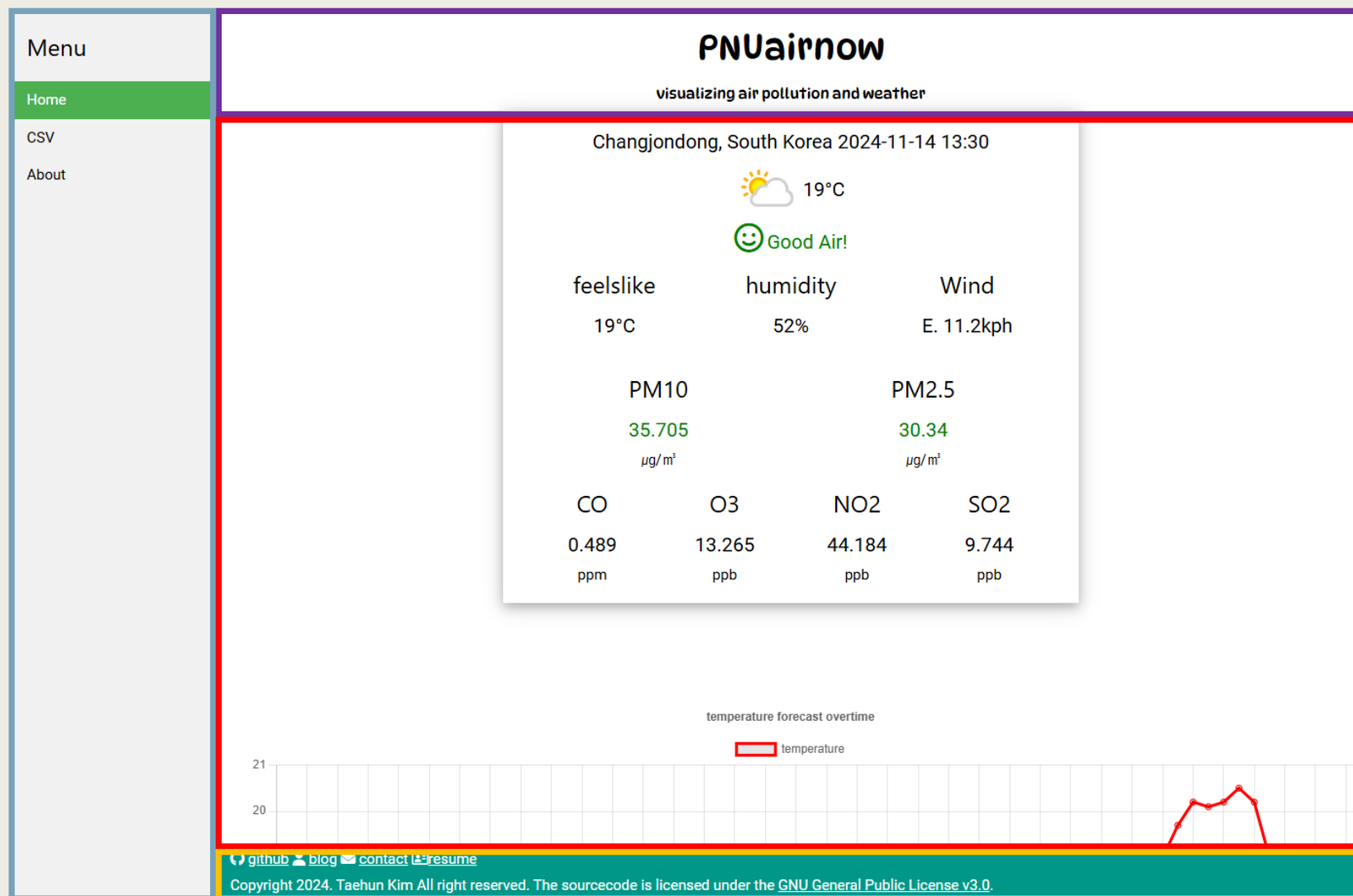
- <https://minchocoin.github.io/air-quality-dashboard/>
- You can download source code on
- <https://github.com/minchoCoin/air-quality-dashboard>



layout

Header

Navigation Bar



Main Dashboard

Footer

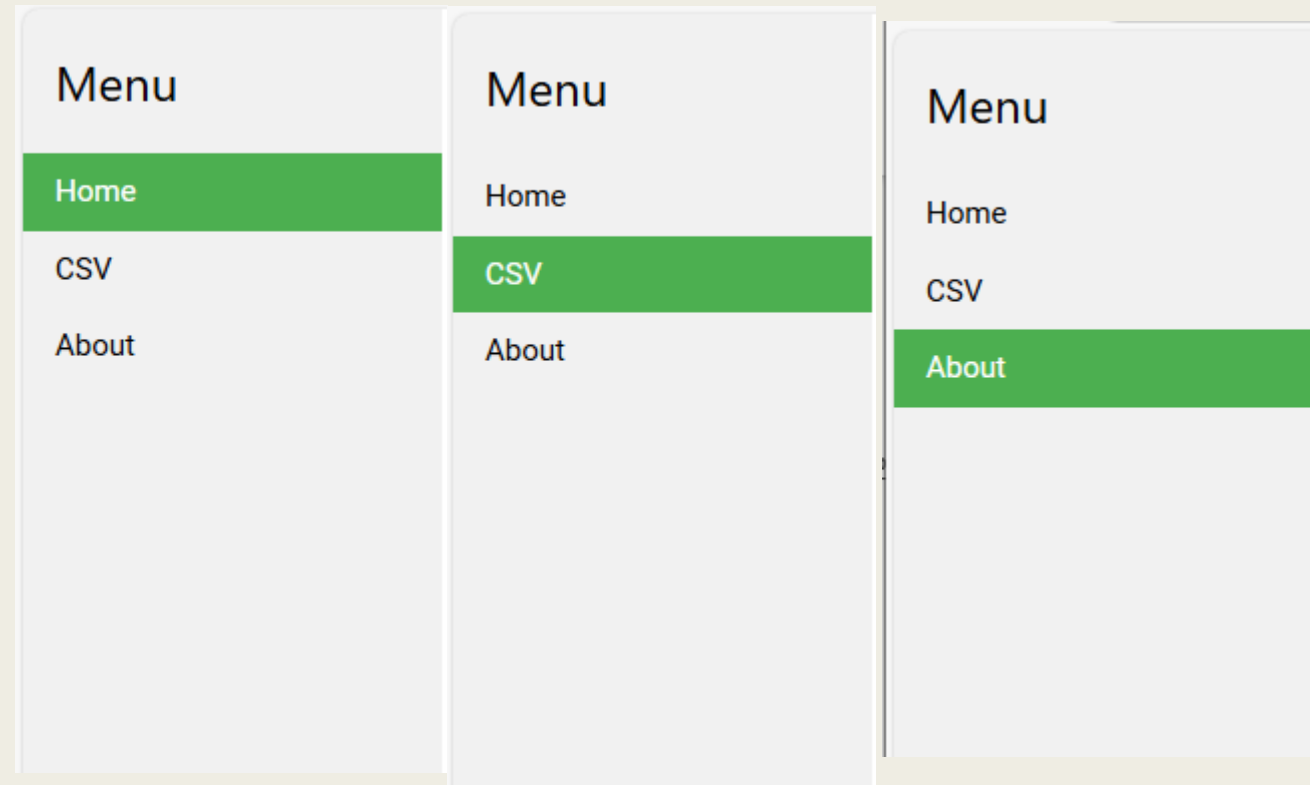
layout-header



- Title of the application and a brief description.

Layout-navigation bar

- You can switch the page
- through this navigation bar.



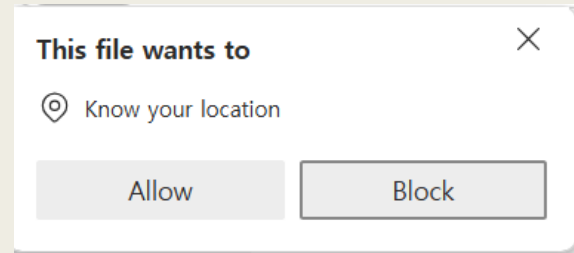
Layout- footer

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- You can view my github, blog, contact, resume link
- License link(GNU General Public License v3.0)

Feature1. real-time dashboard



Changjondong, South Korea 2024-11-14 14:00



19.3°C



Good Air!

feelslike

19.3°C

humidity

52%

Wind

E. 9.4kph

PM10

34.595

µg/m³

PM2.5

29.045

µg/m³

CO

0.508

ppm

O3

12.755

ppb

NO2

43.396

ppb

SO2

9.532

ppb

Using Free Weather API, jquery and AJAX

Real-time

- City
- Country
- Last updated
- Weather image
- Air quality
- Temperature
- Feelslike temperature
- Humidity
- Wind
- Pm10
- Pm2.5
- CO
- O3
- NO2
- SO2

Featur1-1. color of PM10 and PM2.5

- PM10 and PM2.5
 - Good: blue
 - Moderate: green
 - Bad: orange
 - Very bad: red

	good	moderate	bad	very bad
pm10	0-30	31-80	81-150	151-
pm2.5	0-15	16-50	51-100	101-

PM10

5.23

$\mu\text{g}/\text{m}^3$

PM2.5

5.34

$\mu\text{g}/\text{m}^3$

PM10

30.23

$\mu\text{g}/\text{m}^3$

PM2.5

30.34

$\mu\text{g}/\text{m}^3$

PM10

90.23

$\mu\text{g}/\text{m}^3$

PM2.5

90.34

$\mu\text{g}/\text{m}^3$

PM10

152.23

$\mu\text{g}/\text{m}^3$

PM2.5

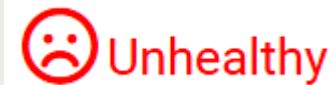
101.34

$\mu\text{g}/\text{m}^3$

Feature 1-2. color of air quality

■ UK DEFRA INDEX

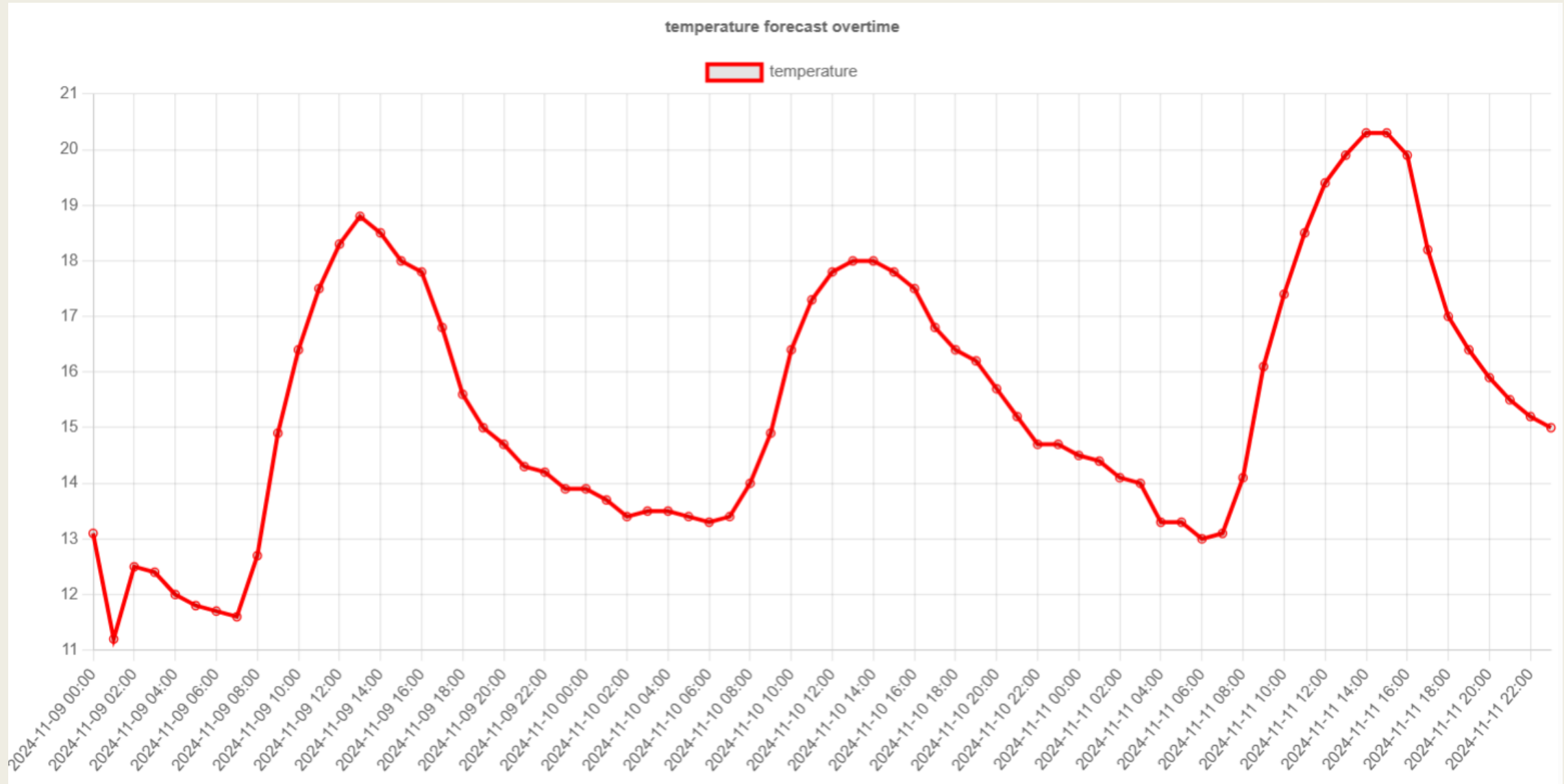
- *Good: blue*
- *Moderate: green*
- *Bad: orange*
- *Very bad: red*



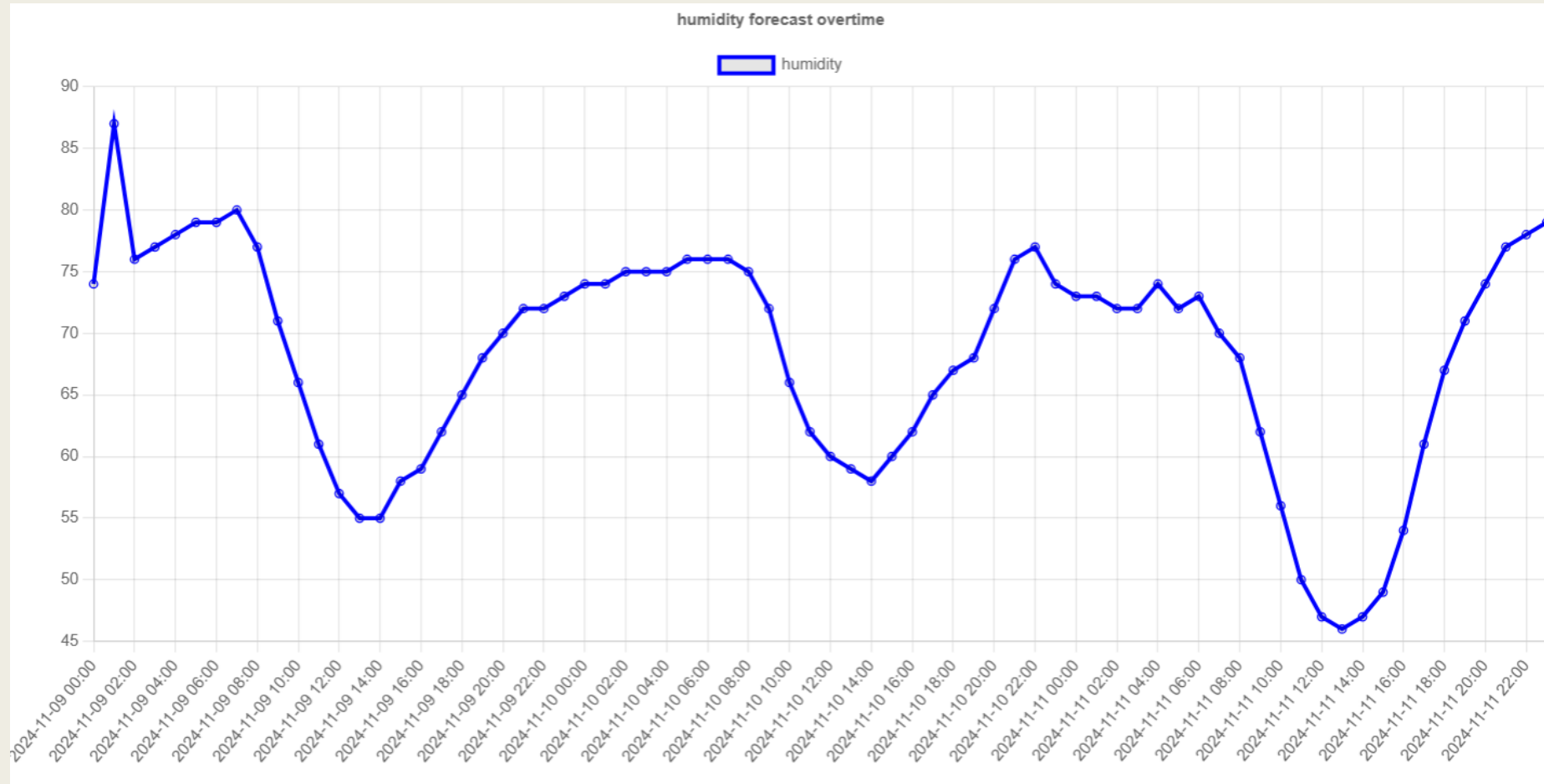
UK DEFRA INDEX Table

Index	1	2	3	4	5	6	7	8	9	10
Band	Low	Low	Low	Moderate	Moderate	Moderate	High	High	High	Very High
μgm^{-3}	0-11	12-23	24-35	36-41	42-47	48-53	54-58	59-64	65-70	71 or more

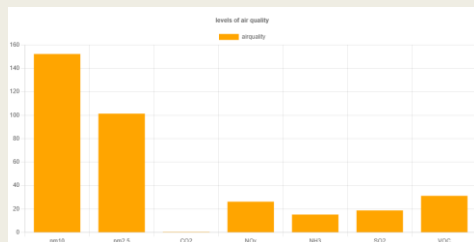
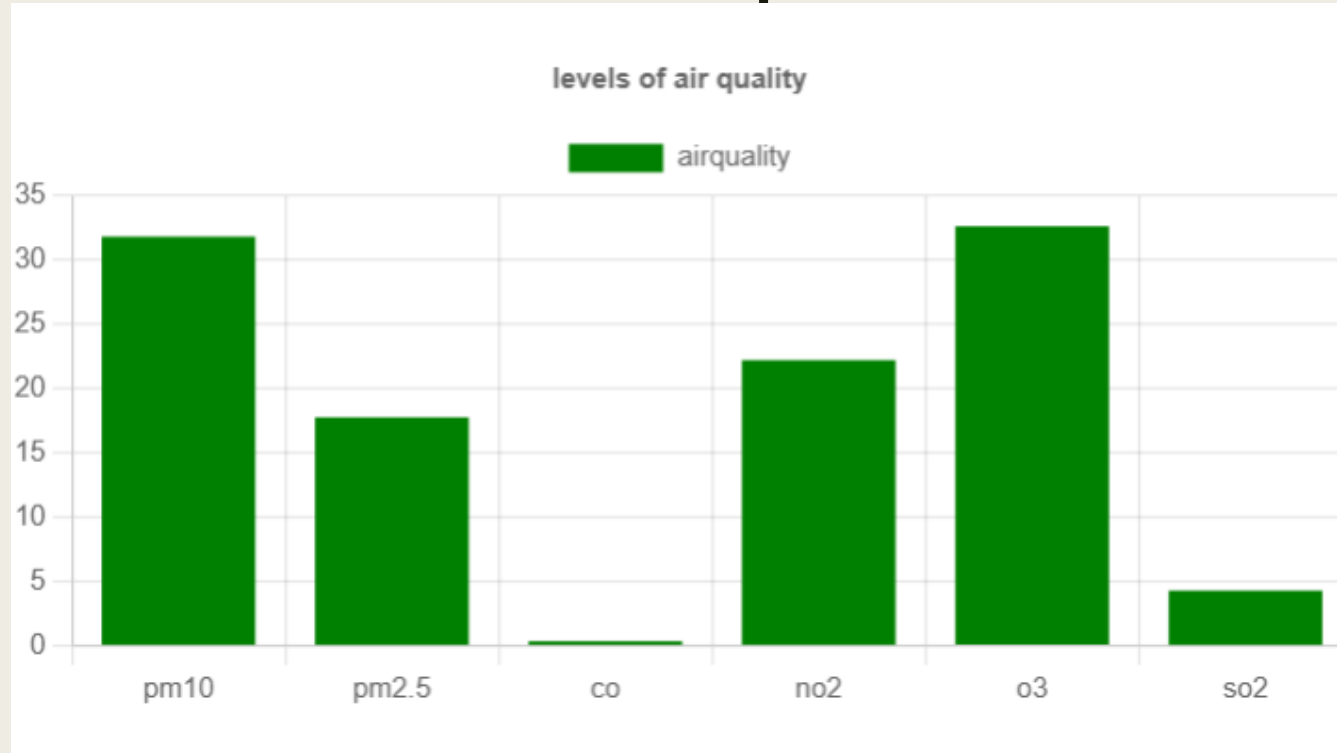
Feature2. temperature & humidity chart



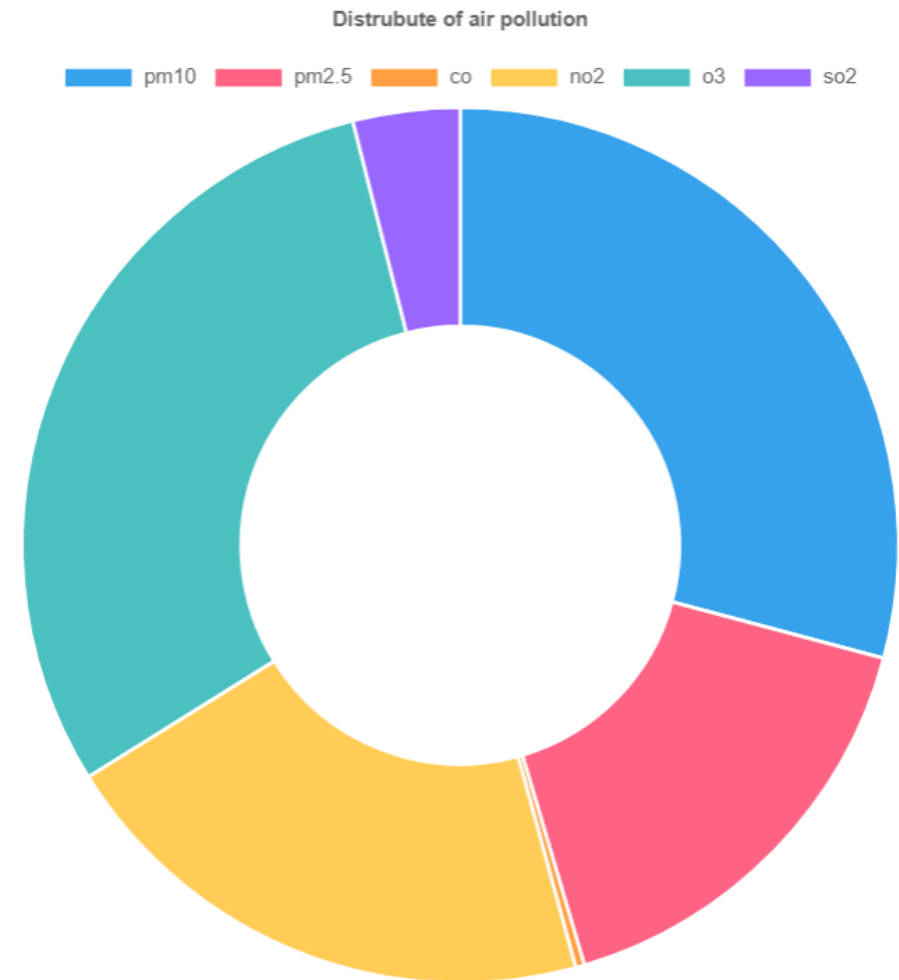
Feature2. temperature & humidity chart



Feature3. Air pollutants chart



The color of air quality bar chart is the color of air quality



Feature4. CSV file dashboard

```
time,cityname,country,current,temperature,humidity,feelslike,wind_dir,wind_kph,pm10,pm2_5,co2,Nox,NH3,S02,VOC,gb_defra_index
2024-11-06 0:00,Pusan, South Korea,,9.8,62,,,,,,
2024-11-06 1:00,,,9.2,62,,,,,,
2024-11-06 2:00,,,8.7,55,,,,,,
2024-11-06 3:00,,,8,48,,,,,,
2024-11-06 4:00,,,7.7,46,,,,,,
2024-11-06 5:00,,,7.4,48,,,,,,
2024-11-06 6:00,,,7.4,50,,,,,,
2024-11-06 7:00,,,7,52,,,,,,
2024-11-06 8:00,,,8.3,34,,,,,,
2024-11-06 9:00,,,10.1,47,,,,,,
2024-11-06 10:00,,,0,11.5,43,8.3,W,2.3,152.23,101.34,0.458,26.231,15.241,18.756,31.215,5
2024-11-06 11:00,,,12.5,40,,,,,,
2024-11-06 12:00,,,13.1,37,,,,,,
2024-11-06 13:00,,,13.5,37,,,,,,
2024-11-06 14:00,,,13.7,37,,,,,,
2024-11-06 15:00,,,13.5,37,,,,,,
2024-11-06 16:00,,,12.9,39,,,,,,
2024-11-06 17:00,,,11.8,42,,,,,,
2024-11-06 18:00,,,10.6,45,,,,,,
2024-11-06 19:00,,,9.9,48,,,,,,
2024-11-06 20:00,,,9.3,52,,,,,,
2024-11-06 21:00,,,8.8,55,,,,,,
2024-11-06 22:00,,,8.4,58,,,,,,
2024-11-06 23:00,,,8.1,61,,,,,,
```

Time, cityname, country, temperature, humidity ,feelslike,
wind,
pm10,pm2.5, co2, Nox, NH3, S02,VOC,defra_index

Pusan, South Korea 2024-11-06 10:00



☹ Moderate

feelslike

8.3°C

humidity

43%

Wind

W. 2.3kph

PM10

152.23

μg/ m³

PM2.5

101.34

μg/ m³

CO2

0.458

ppm

NH3

15.241

ppb

NOx

26.231

ppb

SO2

18.756

ppb

VOC


31.215

ppb

Feature5. about

PNUairnow

visualizing air pollution and weather



you can download source code of this webpage on this [link](#)
Real time weather and air pollution data is received from [Free Weather API](#)

Air Quality

Particulate Matter(PM₁₀,PM_{2.5})

Particulate Matter is classified into PM10 and PM2.5 depending on their diameters, PM10 is a dust less then 10/1000mm and PM2.5 is a dust less than 2.5/1000mm which are smaller then 1/20~1/30 of the hair diameter(about 60μm). Particulate Matter is a mixture of airborne solid particles and liquid droplets. These particles take various shapes and sizes as they are emitted not only from natural sources, but also from various fixed or mobile sources. PM2.5 is either directly emitted from such sources or indirectly generated from gases such as SOx and NOx. They aggravate respiratory diseases like asthma and weaken the functions of the lungs. Furthermore, they reduce visibility, disturb the metabolism of plants after remaining on the leaf, and particularly cause the corrosion of historic relics or statues.

	good	moderate	bad	very bad
pm10	0-30	31-80	81-150	151-
pm2.5	0-15	16-50	51-100	101-

O₃

Ozone(O₃) is a photochemical oxidant such as PANs, aldehyde, and acrolein which are formed during the photochemical reaction of NOx and VOCs in the presence of sunlight, and is classified as a secondary pollutant. VOCs, a precursor, are emitted from various sources such as motor vehicles and industrial facilities including chemical plants and refineries. They are

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