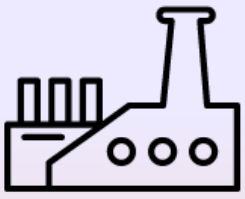
U.S. Pollution 2000-2023



User input:
Pollutant: CO
AQI: Highest

The output given shows the dataset's recorded date and location of the highest AQI value of carbon monoxide in the United States from 2000 to 2023. My program gives the percentage increase or decrease of the pollutant over the 23-year time span, which in this case is a 64.12% decrease. It also shows that the highest recorded value for carbon monoxide was 201, very unhealthy on the AQI scale. The program also prints other yearly air quality index trends for carbon monoxide

This is important because it is crucial to monitor the amount of pollution in the atmosphere so that we can better understand the severity of inefficient energy usage, global warming, and other factors that contribute to pollution in not only our country but the entire world. And from that, we can properly warn people and try to inspire change by upgrading to more efficient energy sources and getting rid of processes that add more waste to the planet.

Terminal Output:

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Enter a pollutant (O3, CO, SO2, NO2) or type EXIT to quit:CO
Highest or Lowest AQI? Highest
--------------------------------------------------------------------------------
Highest Recorded AQI for CO

Date: 2000-12-20 00:00:00
State: California
County: Imperial
City: Calexico
CO AQI: 201.0
CO AQI Category: Very Unhealthy
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Yearly AQI Trend for CO
--------------------------------------------------------
Average AQI in 2000: 9.85
Average AQI in 2023: 3.53
CO AQI has decreased by 64.12% from 2000 to 2023
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First Recorded CO AQI: 25.0
Last Recorded CO AQI: 2.0
--------------------------------------------------------------------------------
First Recorded CO Date: 2000-01-01
Last Recorded CO Date: 2023-09-30
--------------------------------------------------------------------------------
Mean difference for CO is: 7.95
Ratio of last AQI and first AQI for CO is: 0.08
Days between first and last recorded AQI for CO is: 8673
Years between first and last recorded AQI for CO is: 23
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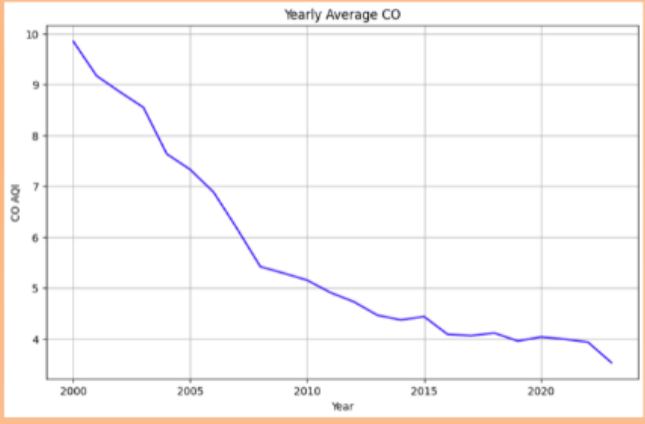
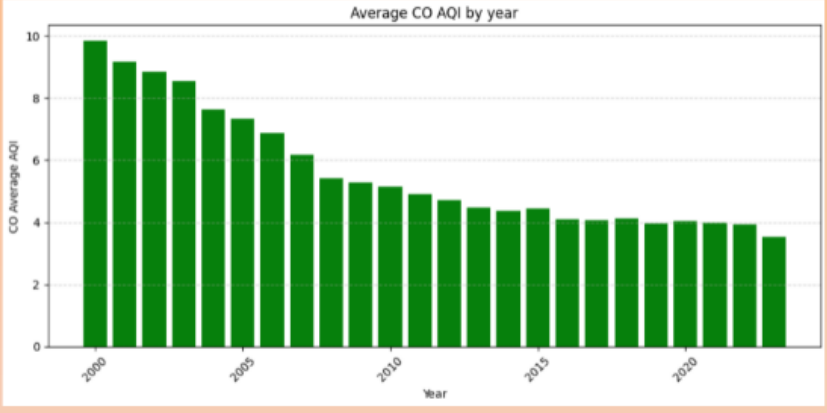
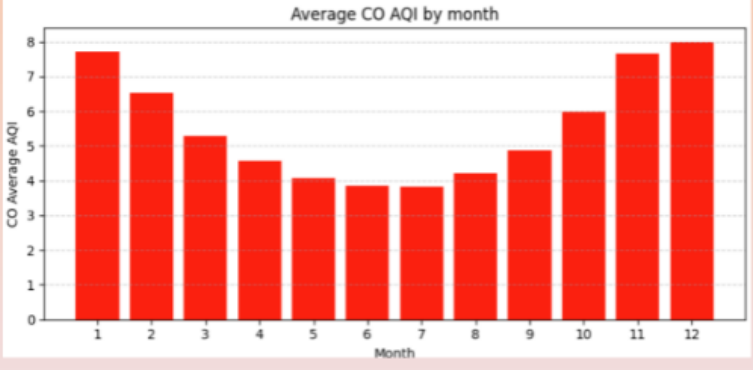


Here in this graph, this shows the downward trend of carbon monoxide in the dataset. The Y axis being carbon monoxide's AQI values, and the X axis being the years

Here is the average carbon monoxide AQI by year. The figure is less drastic than the first one, as this is the average of the AQI values in the recorded year for carbon monoxide





And finally, we have the average carbon monoxide air quality index by month. There is a divot in this figure, with the highest averages of AQI being recorded at the end of the year and start of the year. This could indicate, that possibly because of the holidays in these months, that there is an increase because of this.