

First I created a copy of the provided CSV files opened them as an Excel file and deleted the first 3 rows and the empty row that didn't contain any relevant information, formatted the time column to be the same for every row as hh:mm:ss and then downloaded as a CSV file. Save them in the folder Date.

First start with data manipulation, as I extract the df for every year, and choose the pollutants that I need to plot later, date and time . as I keep date and time separate.

Then use rename() to change the name of the pollutants to make them easily readable.

Then modify the data frame and select only particular data with select() that I need to work with - date, time PM10, NO, NO2.

Then create the data frame named under the required date with filter()

I checked every data frame for missing data filled the gaps where possible, and kept the gaps where there were too many.

I chose not to fill in all of the missing data, but to visualize with them, because the missing information is at the beginning of the day and is 12 rows, which would give irrelevant information, I chose to fill in a single missing data with approx.

Convert time from chr to hh:mm:ss and date from chr to Date type.

Then start to plot the data to see if everything goes through.

I choose to plot the data with lines and in some plots with points because is a better view of timeline data, and clearly can see the spikes if there are any.

In r script extract_data I load all libraries that will need to work out my extraction, and average the months for 2020 to produce plots.

I use R markdown to create an HTML to show my visualisation and write my observations for the final plots as a final report.

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