

Time series analysis (2021)
Station - Jagiellońska
Pollutant - PM10

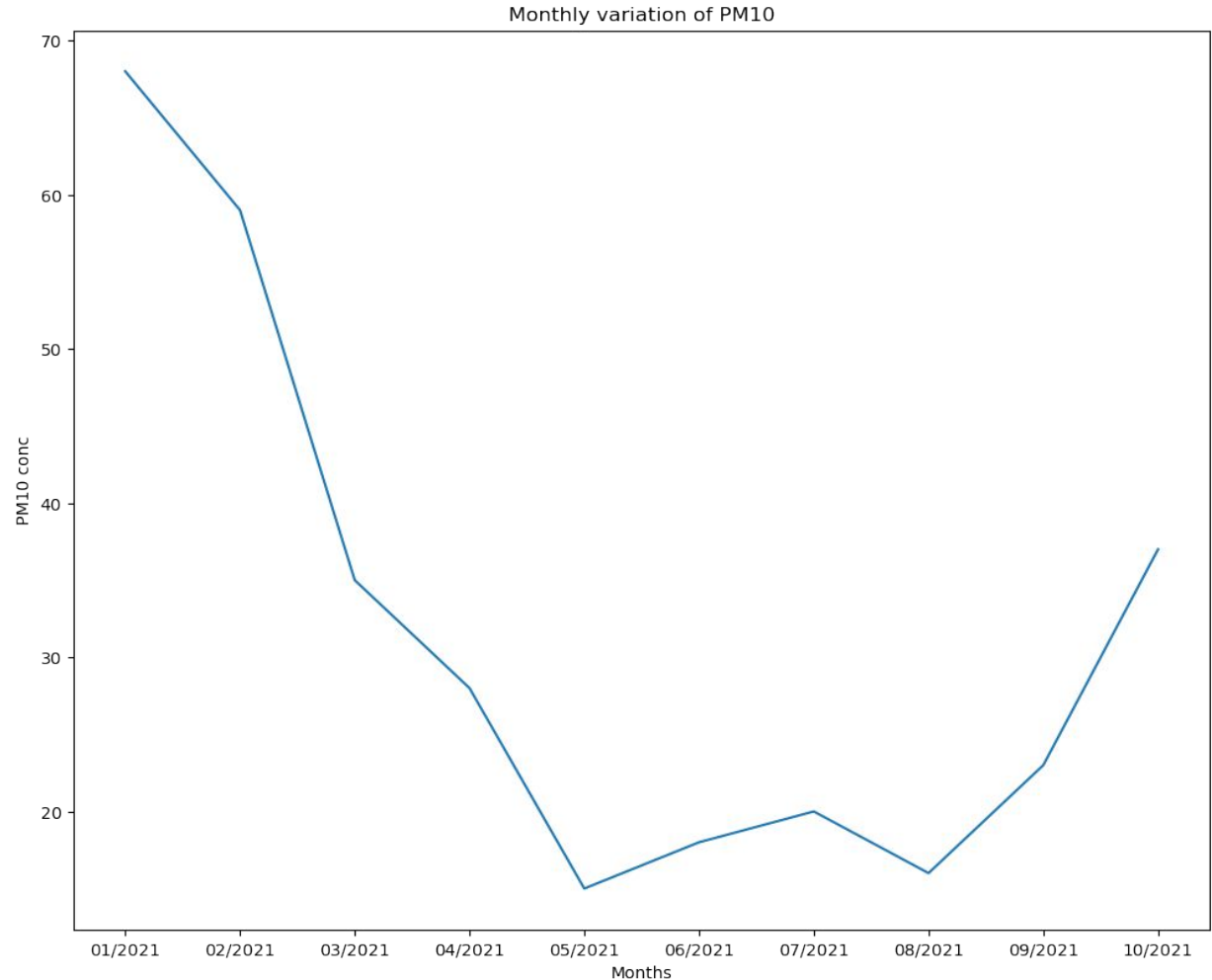
Monthly data variation

I have downloaded the monthly data for each of the months from January - October.

I plotted the same to study which month showed the highest concentration of PM10.

Observation:

The highest pollution levels can be seen in the month of January which then gradually starts decreasing with the least value in the month of May.



Daily variation: Jan 2021

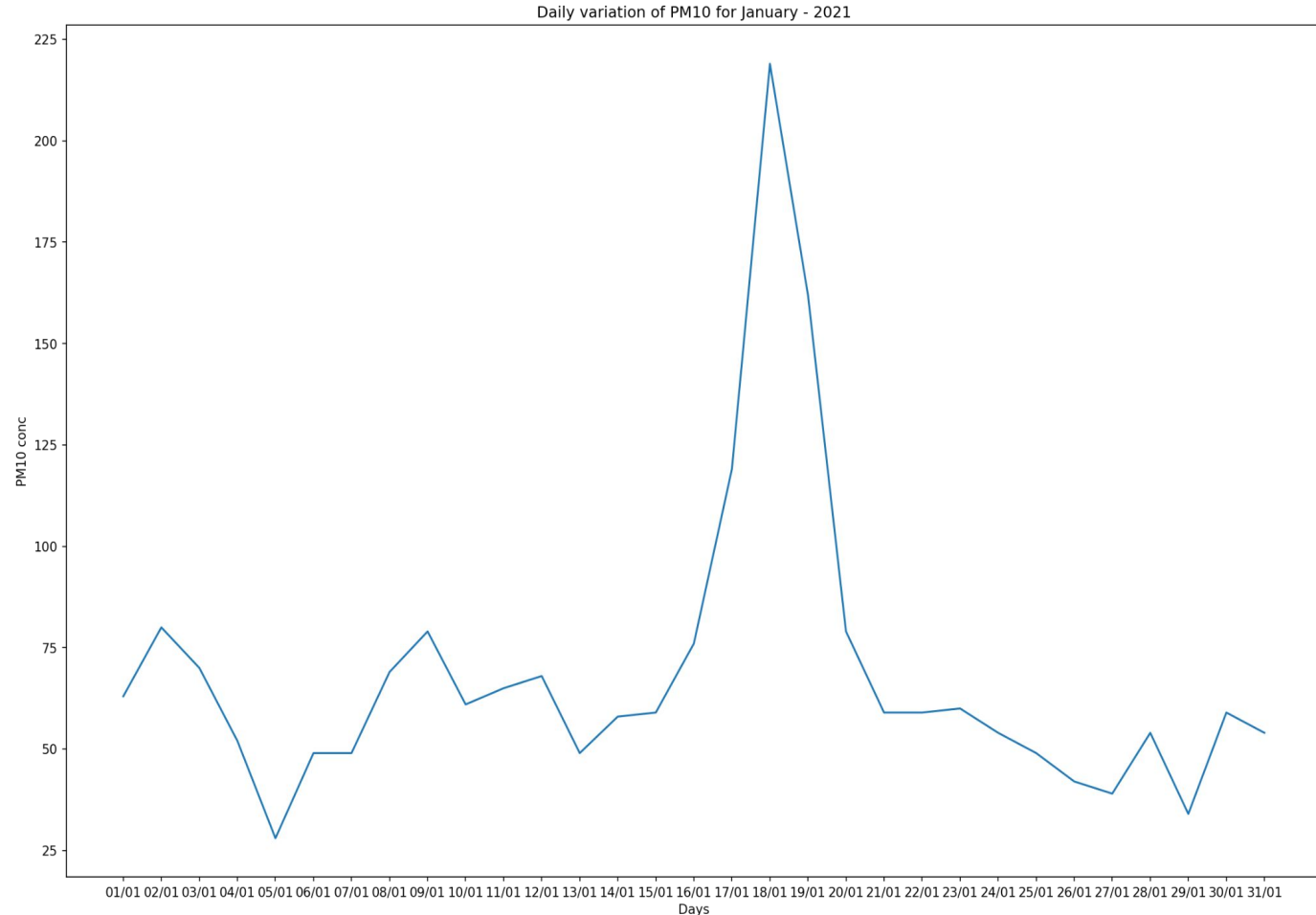
The daily data was downloaded from the Airly website.

The plot was prepared for the same.

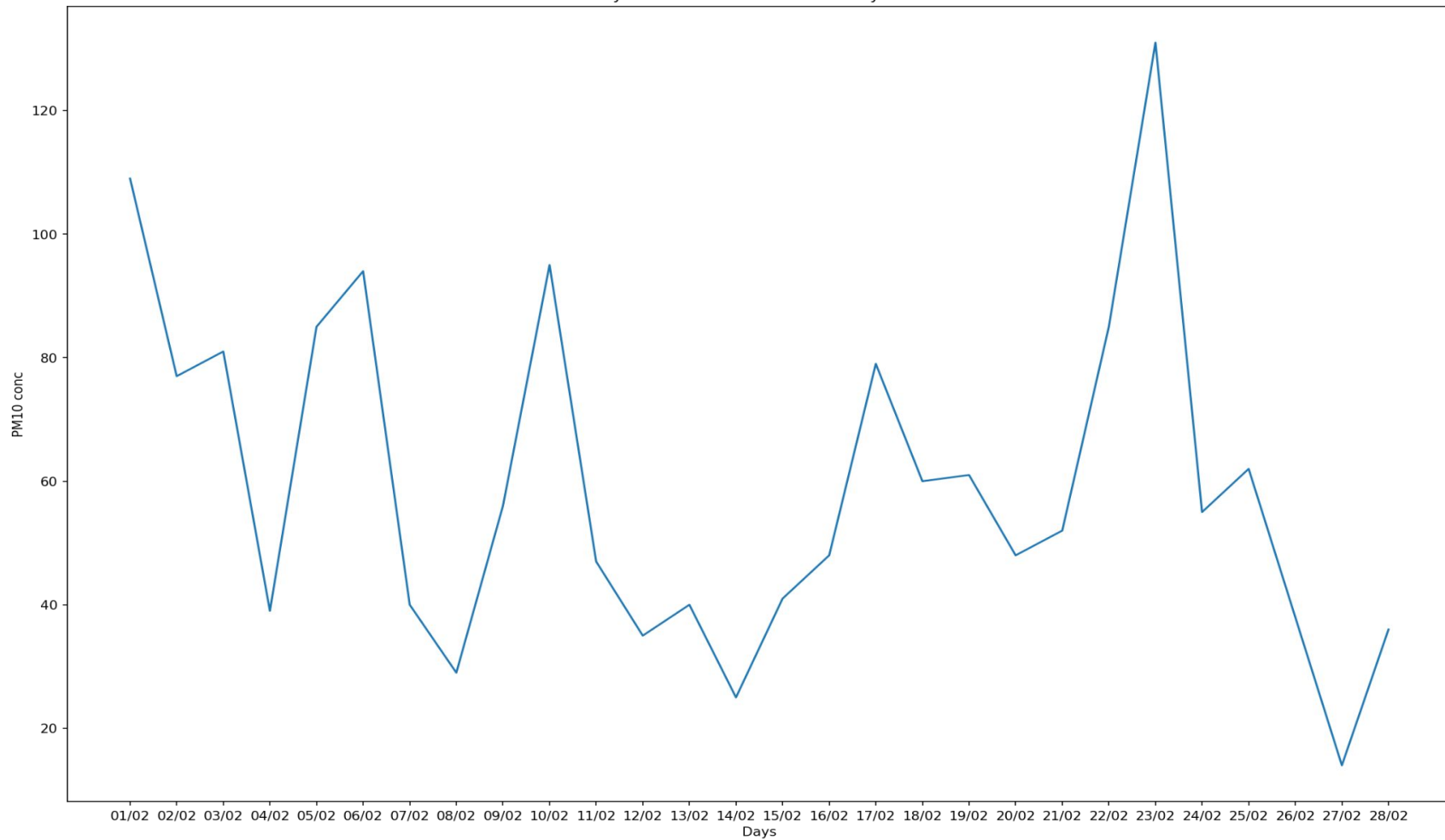
Observation:

In this month the peak was basically seen from 17 to 19.

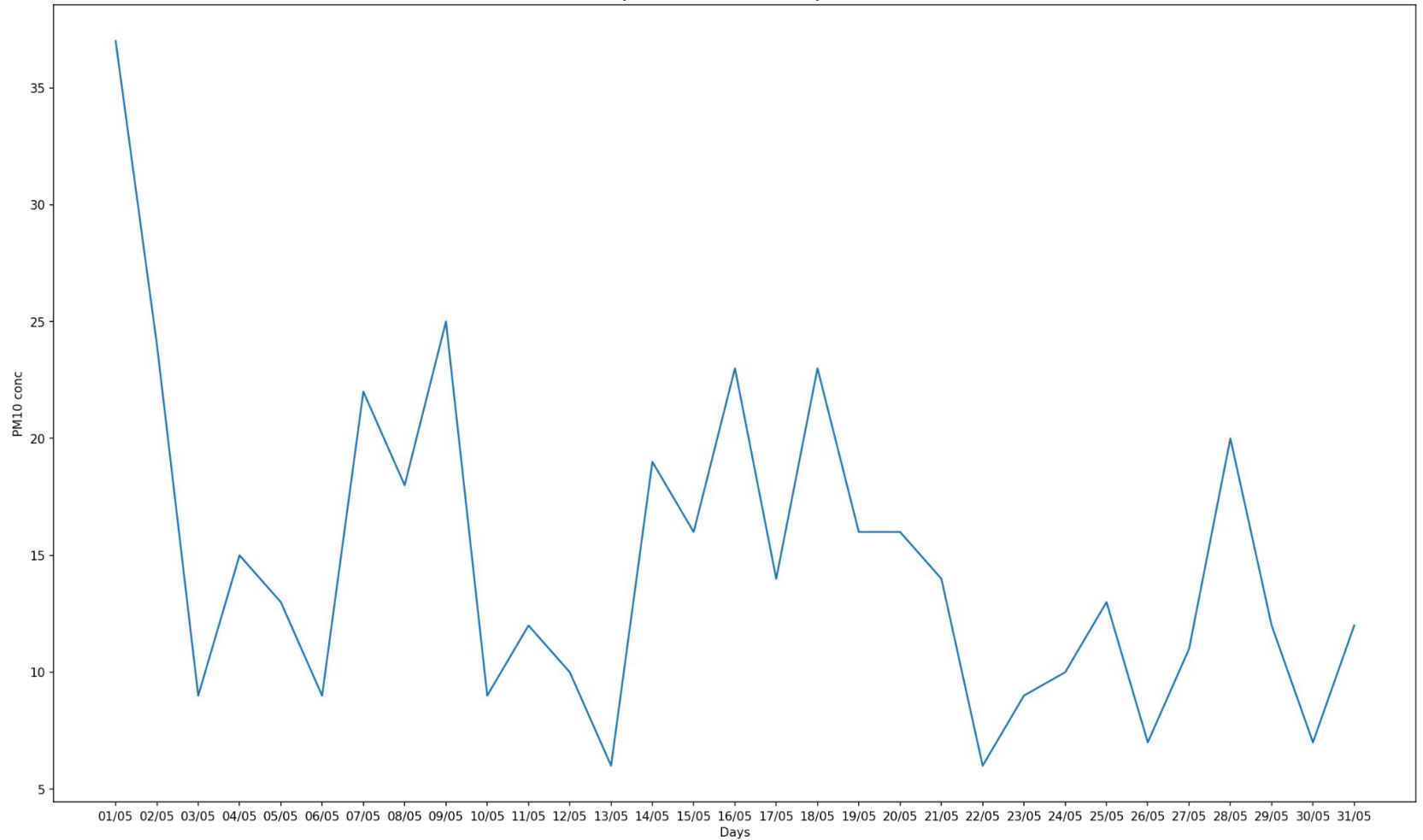
The following slides contains the plot for each month.



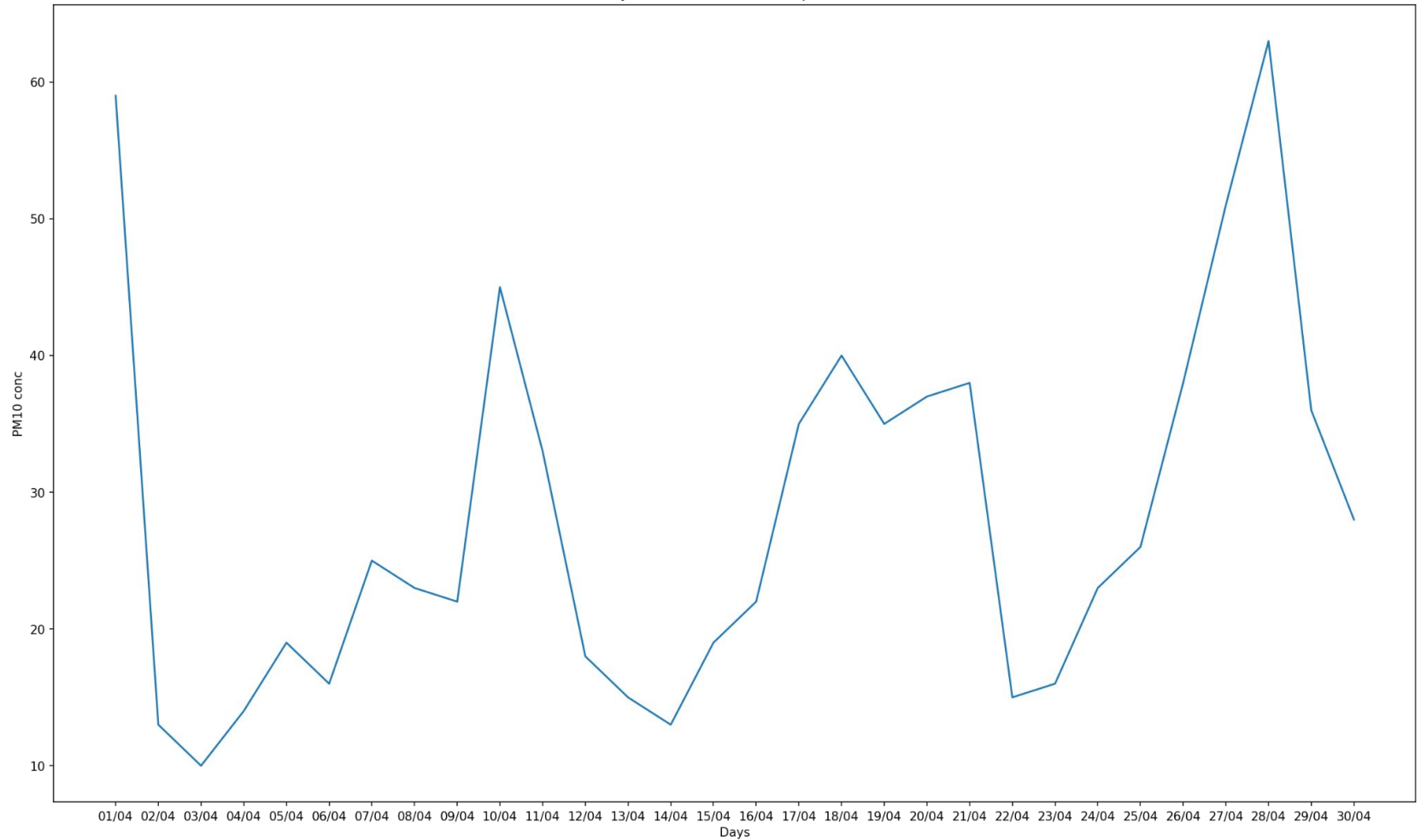
Daily variation of PM10 for February - 2021



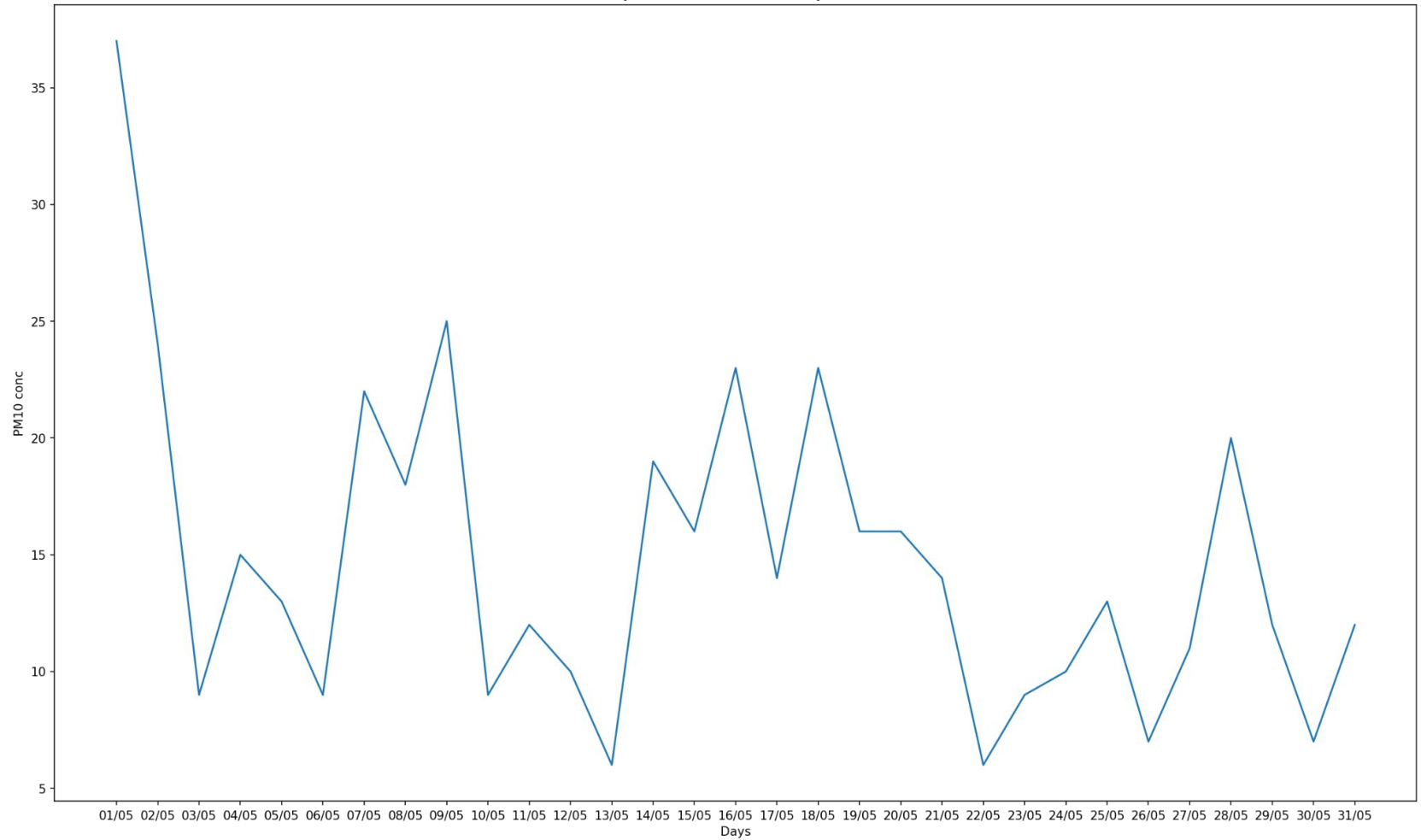
Daily variation of PM10 for May - 2021



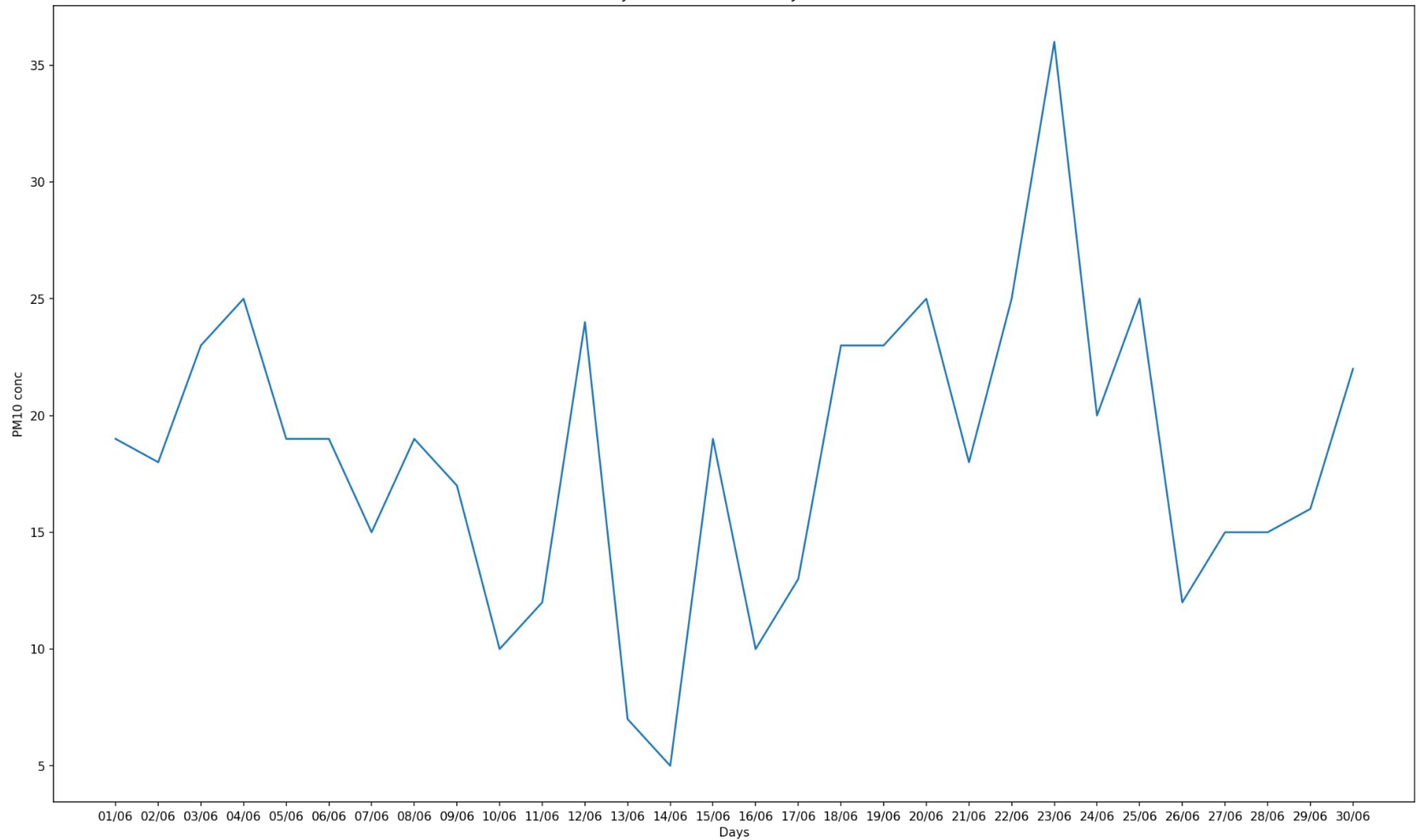
Daily variation of PM10 for April - 2021



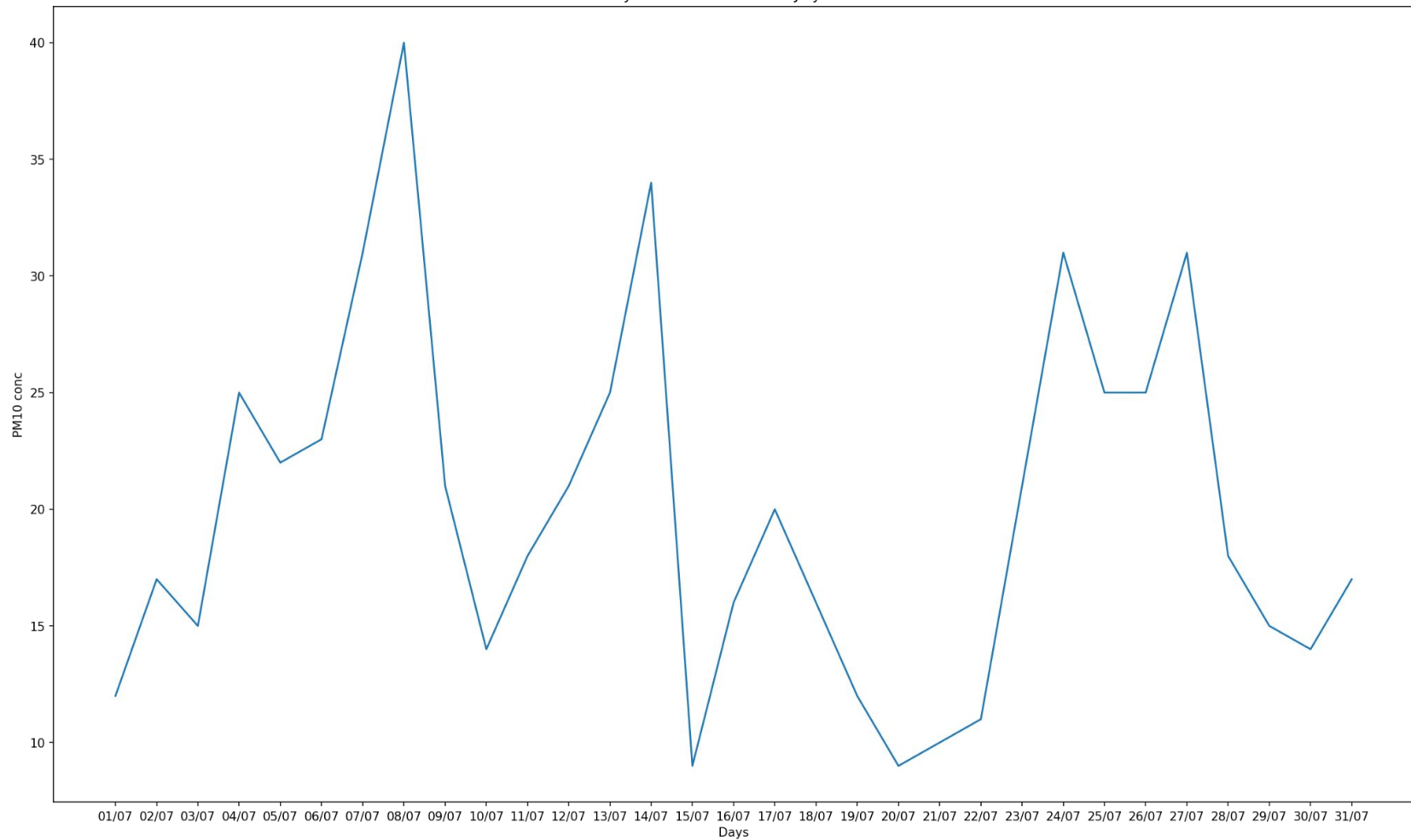
Daily variation of PM10 for May - 2021



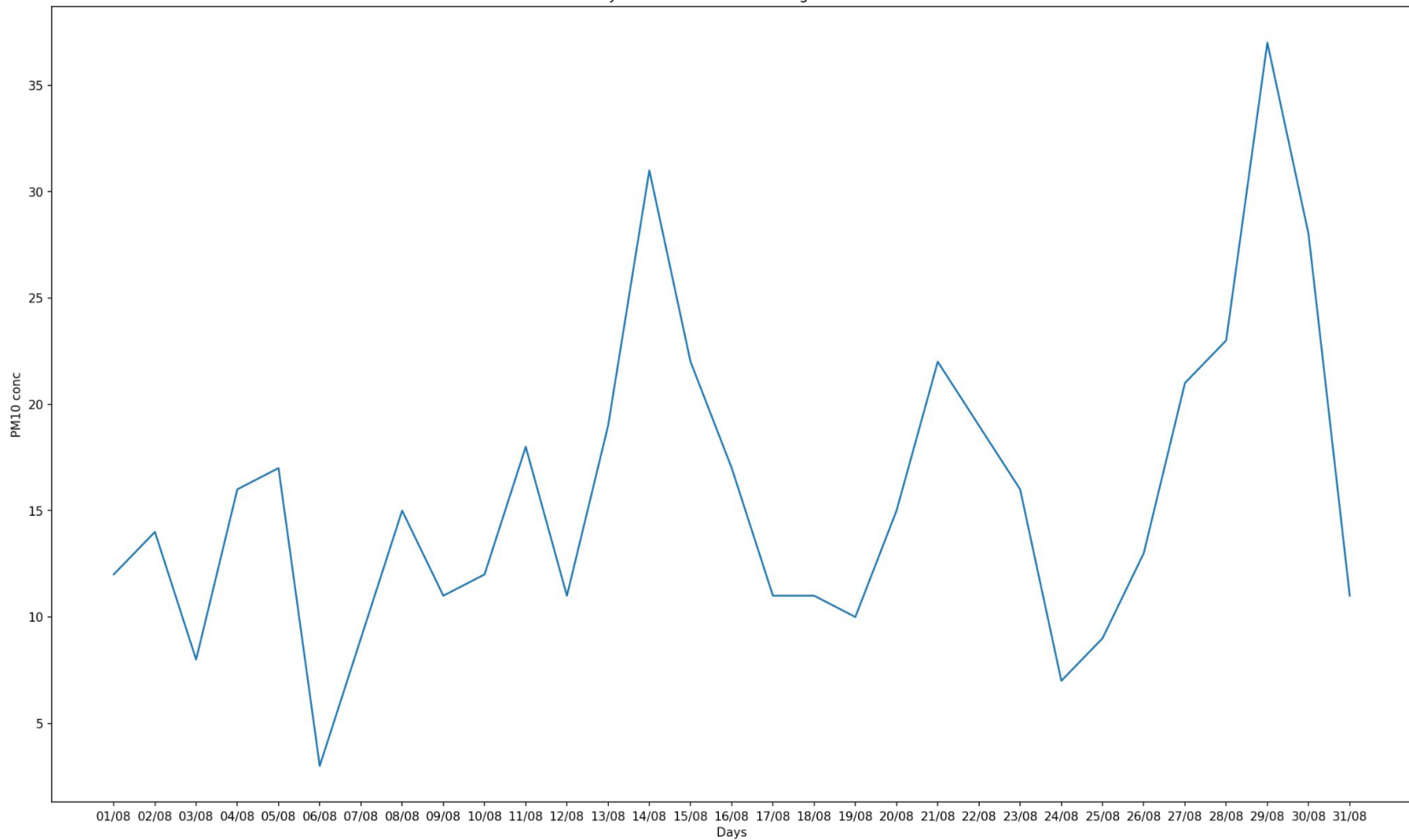
Daily variation of PM10 for June - 2021



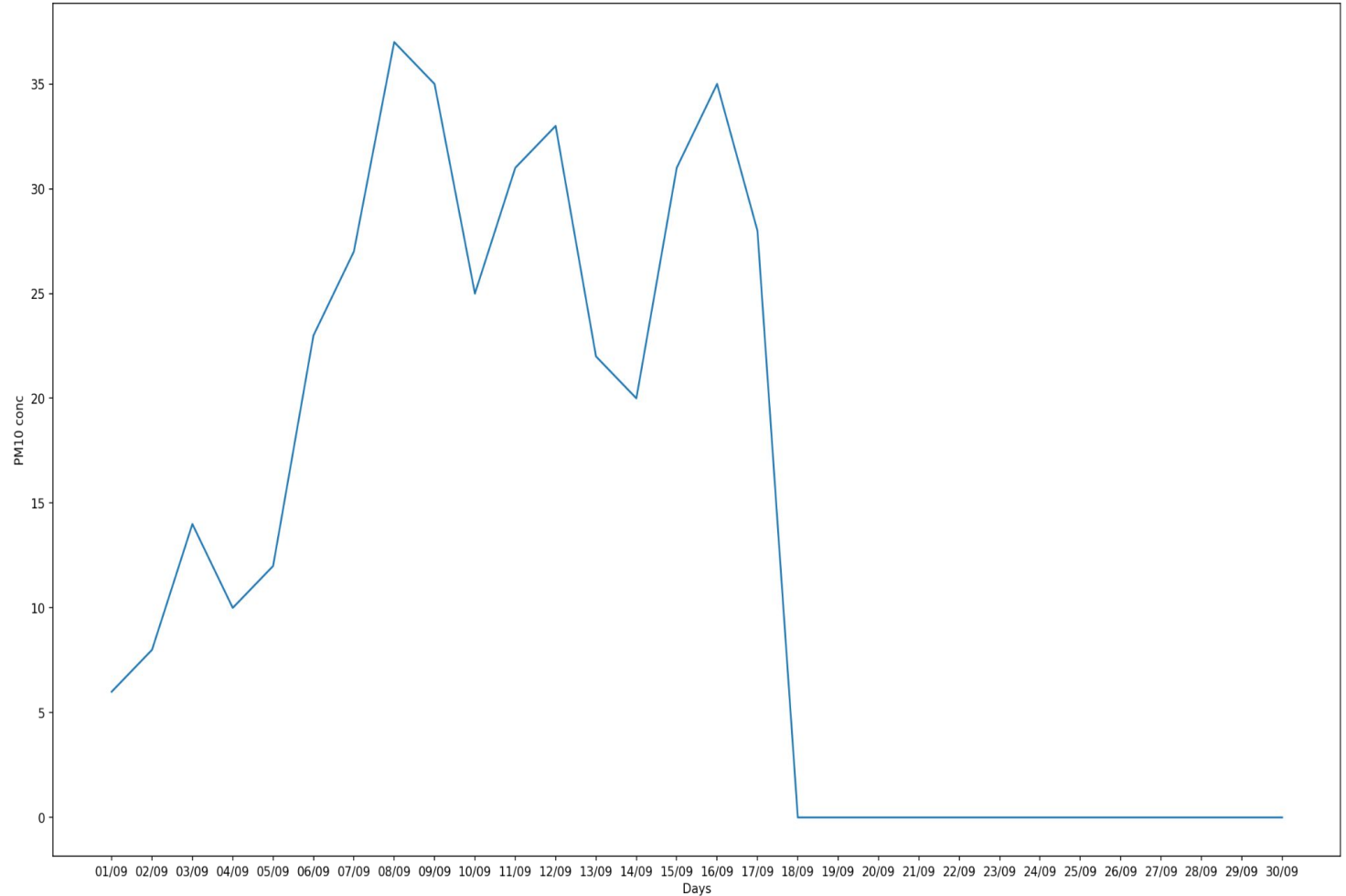
Daily variation of PM10 for July - 2021



Daily variation of PM10 for August - 2021

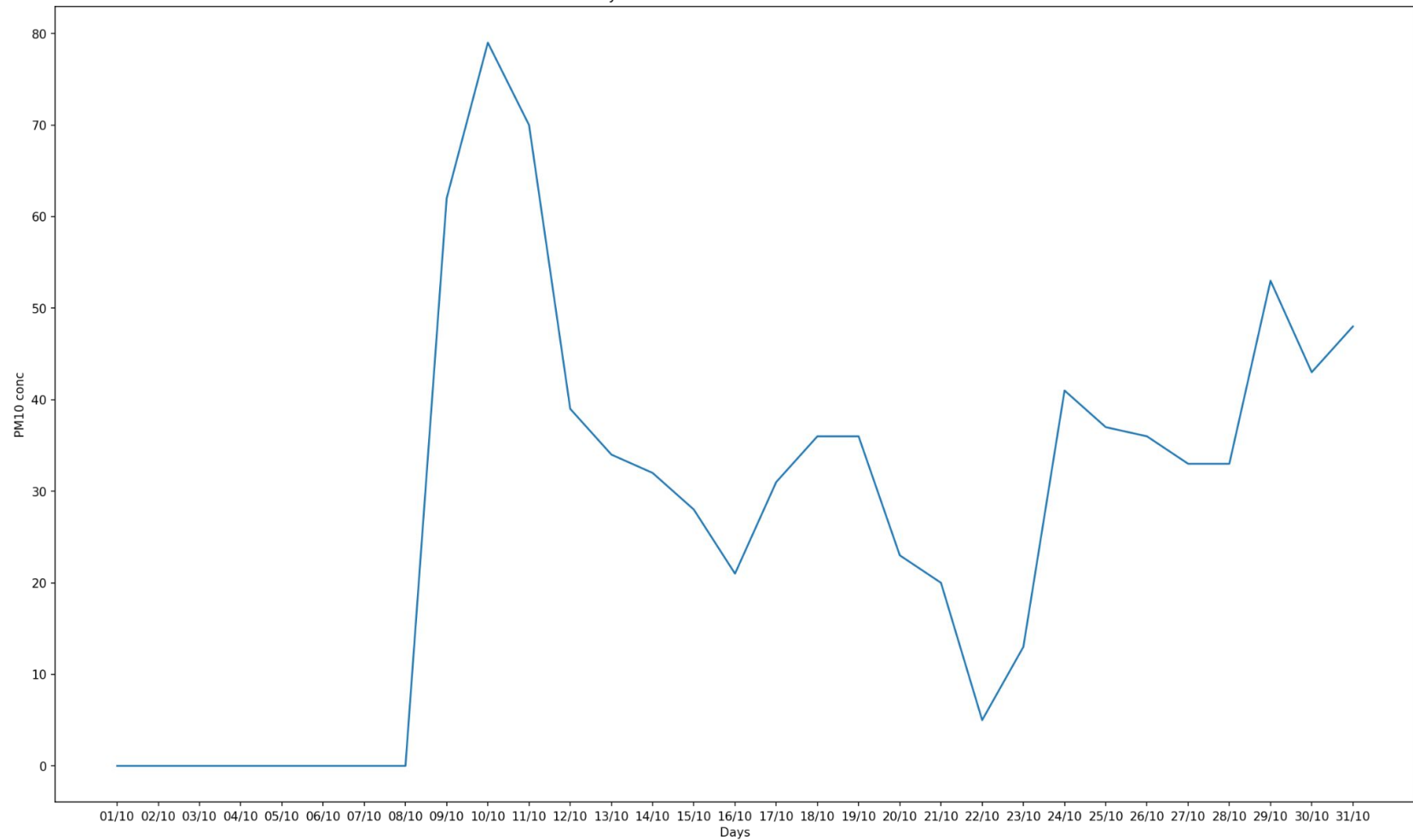


Daily variation of PM10 for September - 2021



The flat trend seen in the graph are actually the dates on which data was not recorded. So I have replaced it with 0.

Daily variation of PM10 for October - 2021

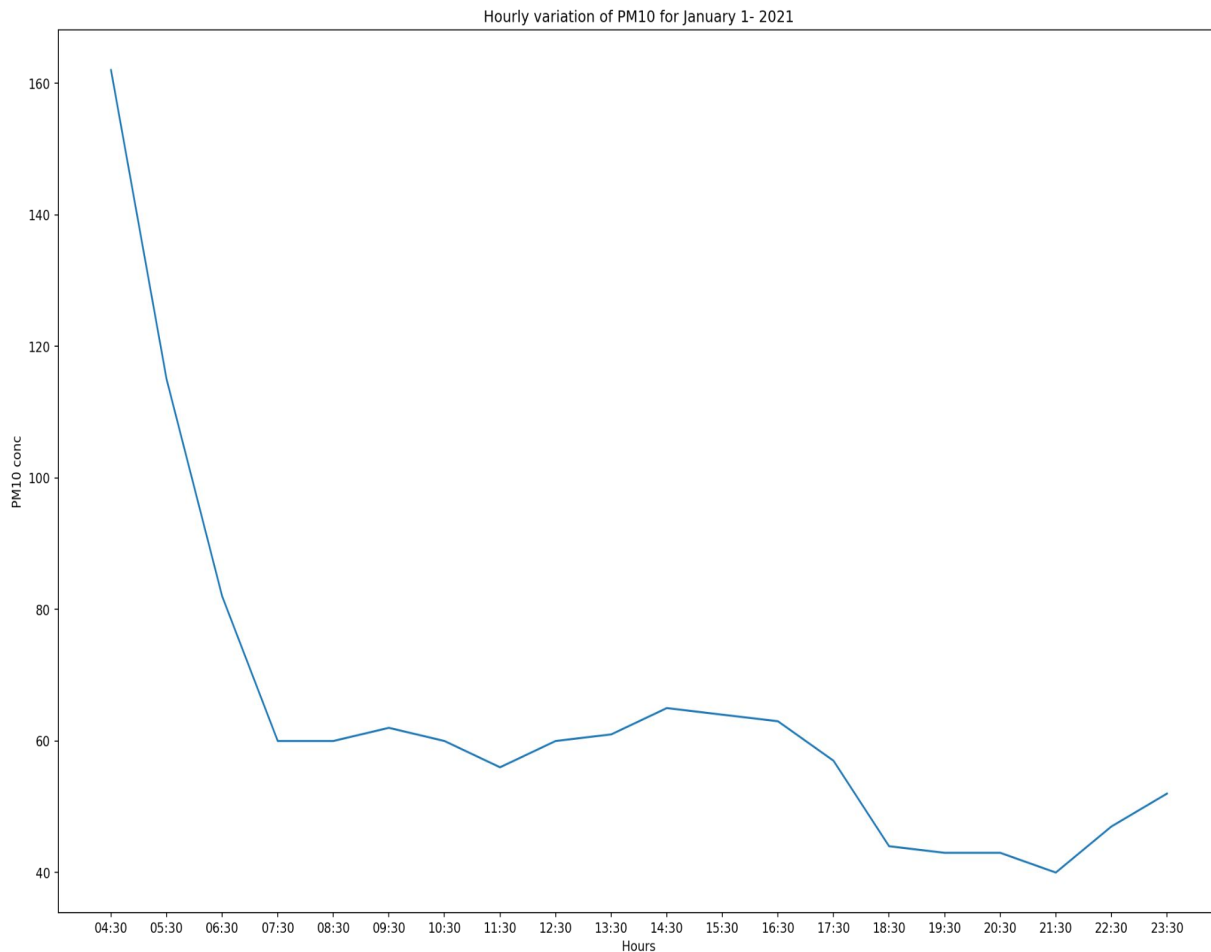


Hourly time series variation

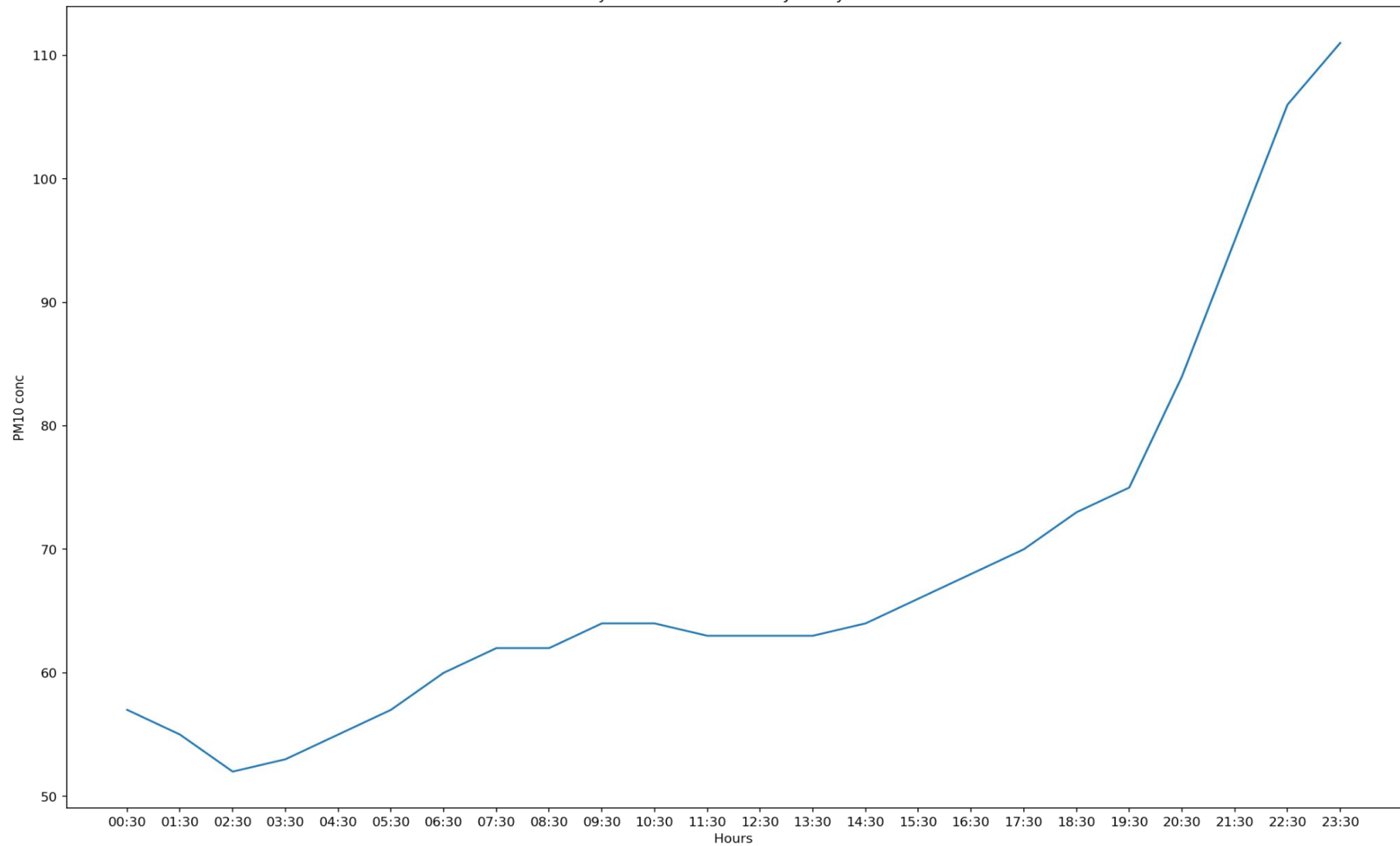
The hourly data for the month of January was downloaded from the website.

A simple line graph was plotted for a single day to see which hours had the highest concentration of PM10.

*The data for 1 january didn't include the PM10 levels from 00:30 - 03:30. So the graph shows the value from 04:30.



Hourly variation of PM10 for January 2- 2021



Heatmap for the month of January

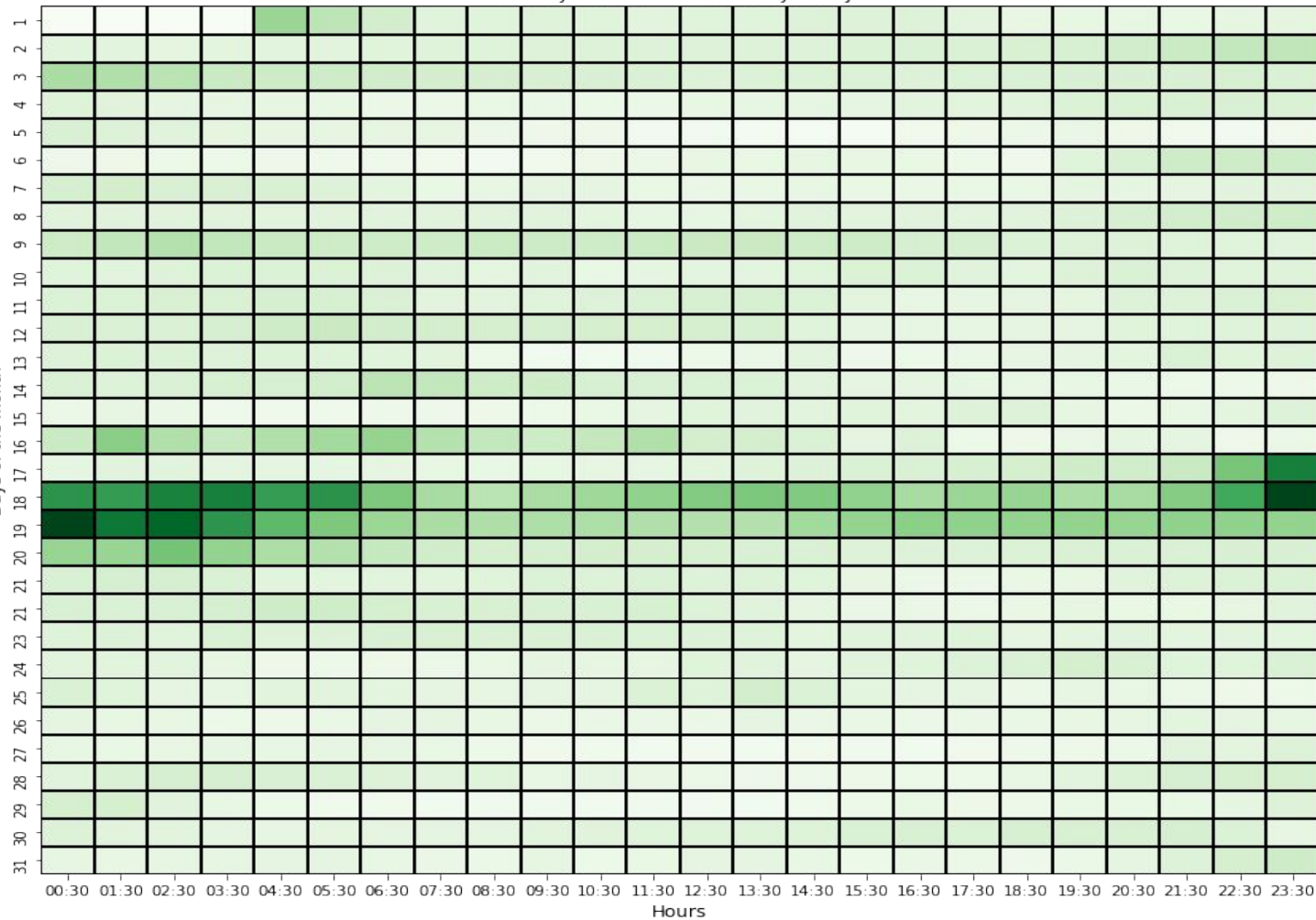
From all the hourly values in the month of January a heatmap was prepared for the total month for comparing the data.

Observation:

As seen from the scale the highest concentration was observed from 17 -19(also seen in the daily plots). The peak for PM10 was seen during the night hours from 23:30 to 03:30.

Hourly variation of PM10 for January

Days of the month



Thank You