3. Air pollution

The National Air Quality Measuring Network performs continuous air quality measurements with automatic measuring stations in the area of the whole country. File `buzater.txt` contains the measurements of the measuring station at Búza tér, Miskolc in January 2009 broken down into daily figures (it is a UTF-8 encoded text file tagged by tabs).

During the solution take the followings into consideration.

- *Whenever possible, use a formula, function or reference in the solution.*
- *There are parts in the exercise that use the results from a previous question. If you could not solve an exercise part completely, use its solution as it is, or instead of a formula resulting in a number enter an arbitrary integral number and work on with that. This way you can receive marks for that exercise part as well.*

1. Open file `buzater.txt` using a spreadsheet processor so that the first read data gets into cell *A1*. Save the table in the default format of the spreadsheet processor as `airpollution`. The unit of data given is μg/m^3.
2. Insert a blank row under the first row and type in the sanitary limits according to the example.
3. In range *B34:F34* calculate the average amount of the individual air pollutants using a function.
4. In range *B3:F34* the numbers should appear with an accuracy of two decimal figures.
5. In cells *B35:F35* give the maximum air pollution values.
6. In *B36:F36* determine the day of the maximum air pollution of the given column using a function that can be copied flawlessly.
7. Copy the heading with the names of the pollutants (range *B1:F1*) to the range starting with cell *H1*. Under it, into the position given in the example, that is, merged cells *H2:L2* type in the text "As percentage of the sanitary limit".
8. Using a formula that can be copied flawlessly within the whole range determine in the cells of columns *H:L* what percent of the health limit are the daily measured values for the individual pollutants. The results should be displayed in percent format with one decimal figure.
9. Show the amount of sulphur dioxide, nitrogen oxides, ozone and particulate matter on a line chart as the function of date. The properties of the chart are:
    a. It should not contain redundant data (not even carbon monoxide values).
    b. The chart should be displayed on another sheet.
    c. The chart title is "Pollution".
    d. The label of the vertical axis is μg/m^3.
    e. The legend should be centered at the bottom.

10. Set a thin border for the cells containing data and a thick border for the cells of the first two rows, but the other cells should be displayed without borders in the print preview.
11. Change the column widths and the wrapping of the texts according to the example so that the table becomes clearly readable. The contents of the cells should be aligned centered both horizontally and vertically.
12. Set the print properties so that the sheet that contains the table has landscape orientation and fits on one page.

30 marks

Example:

date	sulphur dioxide	nitrogen oxides	carbon monoxide	ozone	particulate matter		sulphur dioxide	nitrogen oxides	carbon monoxid
Sanitary limit	125	150	5000	120	50		As percentage of the sanitary		
2009.01.01	5,67	29,01	495,26	24,76	40,34		4,5%	19,3%	9,9%
2009.01.02	9,43	69,13	947,70	11,17	54,69		7,5%	46,1%	19,0%
2009.01.03	13,19	87,05	1115,10	12,36	69,40		10,6%	58,0%	22,3%
2009.01.04	6,43	63,18	863,89	10,57	66,45		5,1%	42,1%	17,3%
2009.01.05	6,70	69,79	808,76	14,72	60,52		5,4%	46,5%	16,2%
2009.01.06	31,								
2009.01.07	21,								
2009.01.08	25,								
2009.01.09	23,								
2009.01.10	56,								
2009.01.11	28,								
2009.01.12	20,								
2009.01.13	42,								
2009.01.14	34,								
2009.01.15	22,								
2009.01.16	16,								
2009.01.17	10,								
2009.01.18	5,1								
2009.01.19	15,								
2009.01.20	8,8								
2009.01.21	10,								
2009.01.22	8,3								
2009.01.23	12,								
2009.01.24	8,7								
2009.01.25	24,								
2009.01.26	22,								
2009.01.27	22,								
2009.01.28	10,								
2009.01.29	5,7								
2009.01.30	3,8								
2009.01.31	11,								
Average	17,								
Maximum	56,								
Which day	2009.