Toronto_60435_2019_Day188to194.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day188to194.csv dataset used in CHM 135 Experiment 1.

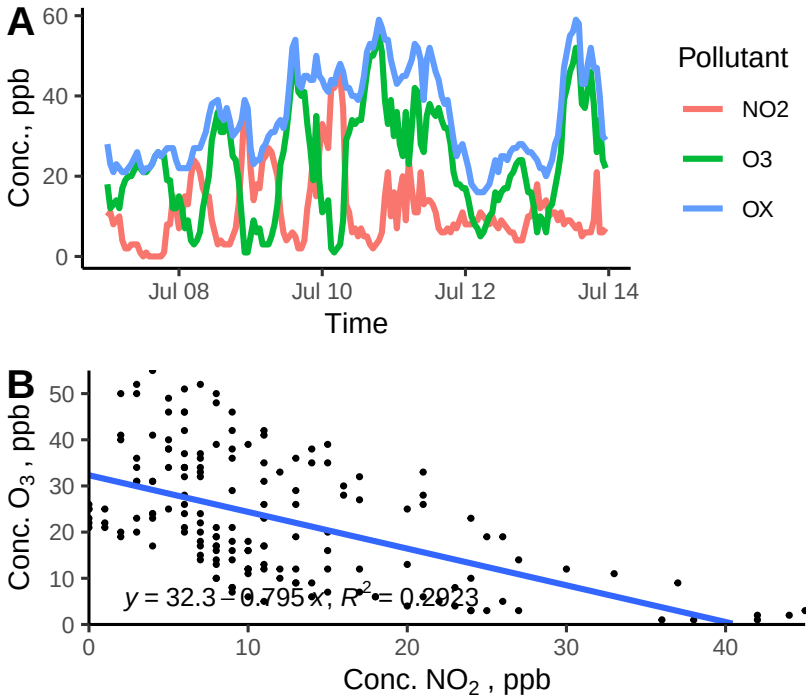

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.6	9.2	9	0	45
O3	23.1	13.5	22	1	55
OX	34.7	11.5	32	16	59
NO2_8hr	11.7	7.6	9	0	38
O3_8hr	23.2	12.0	21	5	49
OX_8hr	34.9	10.8	33	17	55

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day189to195.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day189to195.csv dataset used in CHM 135 Experiment 1.

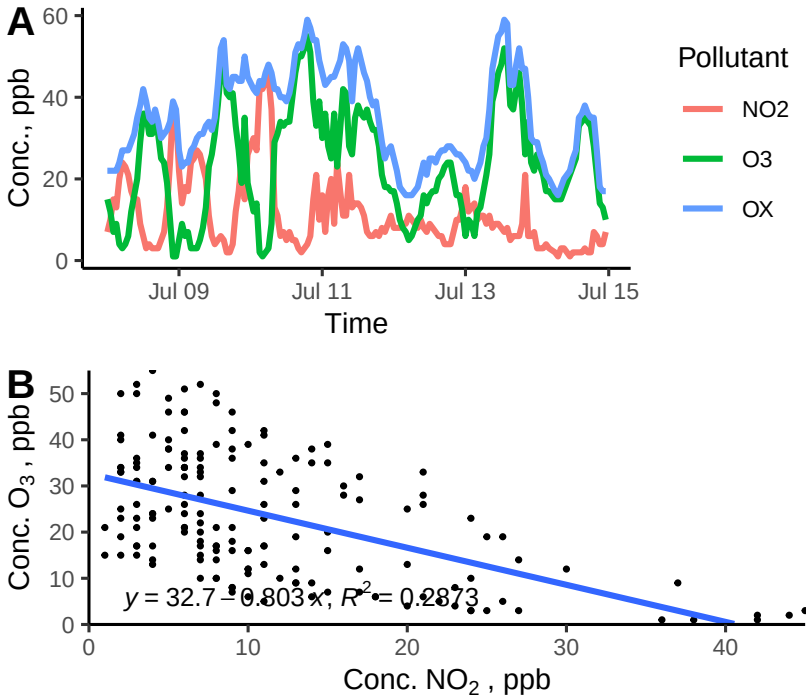

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.2	9.1	8	1	45
O3	23.7	13.6	23	1	55
OX	34.9	11.6	34	16	59
NO2_8hr	11.3	7.5	9	2	38
O3_8hr	24.1	11.9	24	5	49
OX_8hr	35.4	10.5	34	17	55

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day190to196.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day190to196.csv dataset used in CHM 135 Experiment 1.

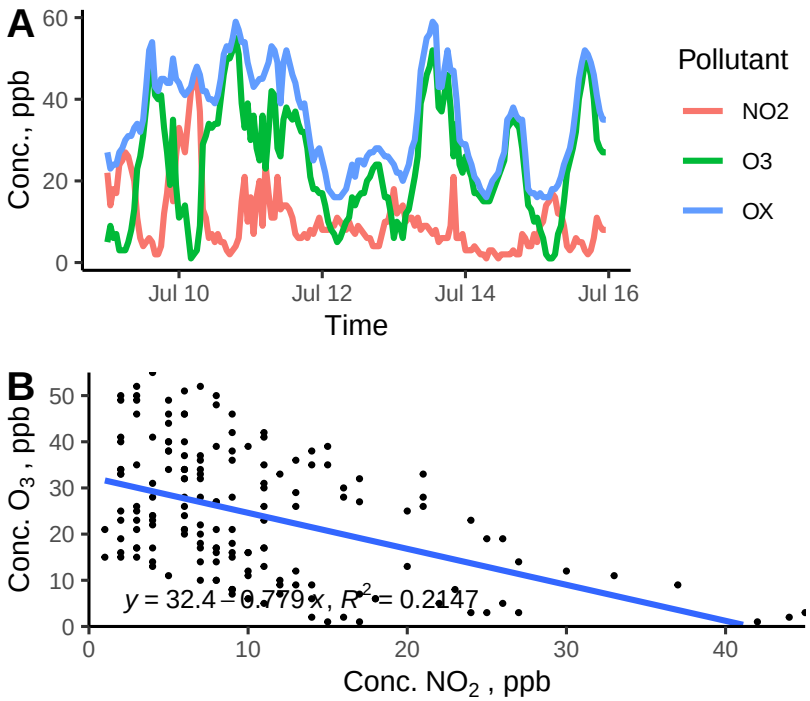

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Pollutant	mean	sd	median	min	max
NO2	10.3	8.2	8	1	45
O3	24.4	13.8	24	1	55
OX	34.7	12.4	35	16	59
NO2_8hr	10.2	6.9	9	2	37
O3_8hr	24.6	12.1	24	4	49
OX_8hr	34.8	11.6	34	16	55

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day191to197.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day191to197.csv dataset used in CHM 135 Experiment 1.

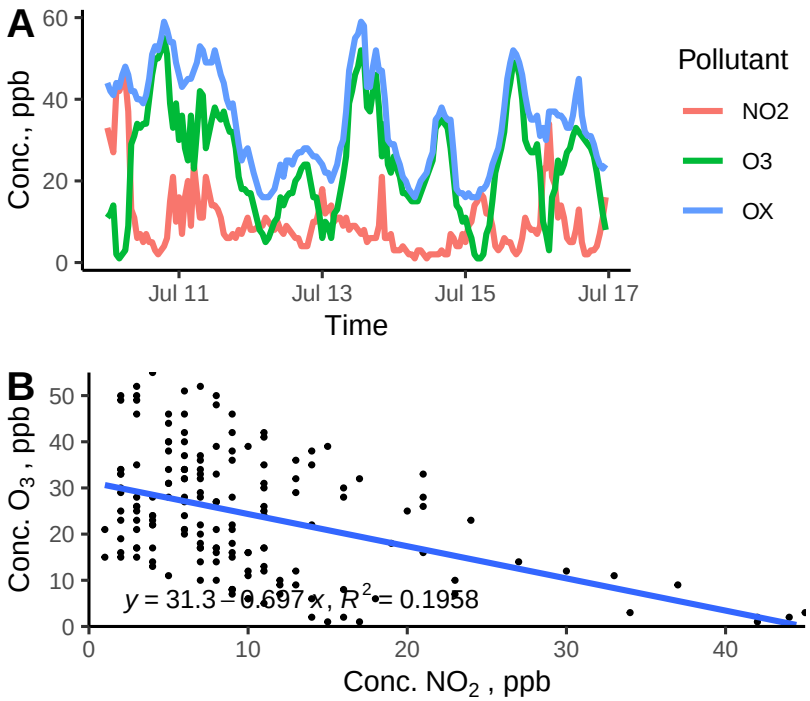

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	9.9	8.3	8	1	45
O3	24.4	13.1	24	1	55
OX	34.3	12.0	35	16	59
NO2_8hr	9.4	6.3	8	2	38
O3_8hr	24.9	11.4	24	4	49
OX_8hr	34.3	11.2	34	16	55

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day192to198.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day192to198.csv dataset used in CHM 135 Experiment 1.

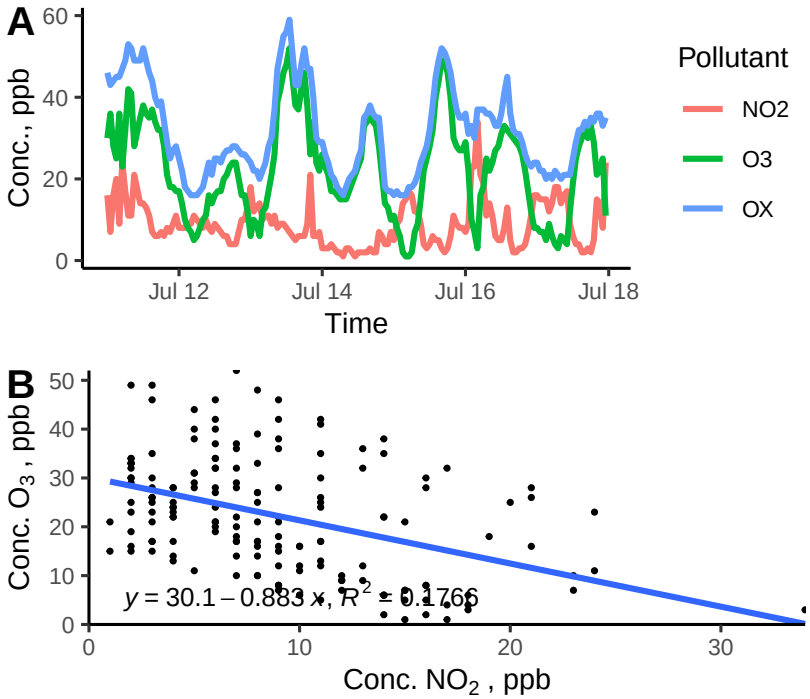

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.9	5.7	8	1	34
O3	22.2	11.9	22	1	52
OX	31.2	10.8	29	16	59
NO2_8hr	8.8	4.3	8	2	21
O3_8hr	22.1	10.5	21	4	44
OX_8hr	30.9	9.9	29	16	51

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day193to199.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day193to199.csv dataset used in CHM 135 Experiment 1.

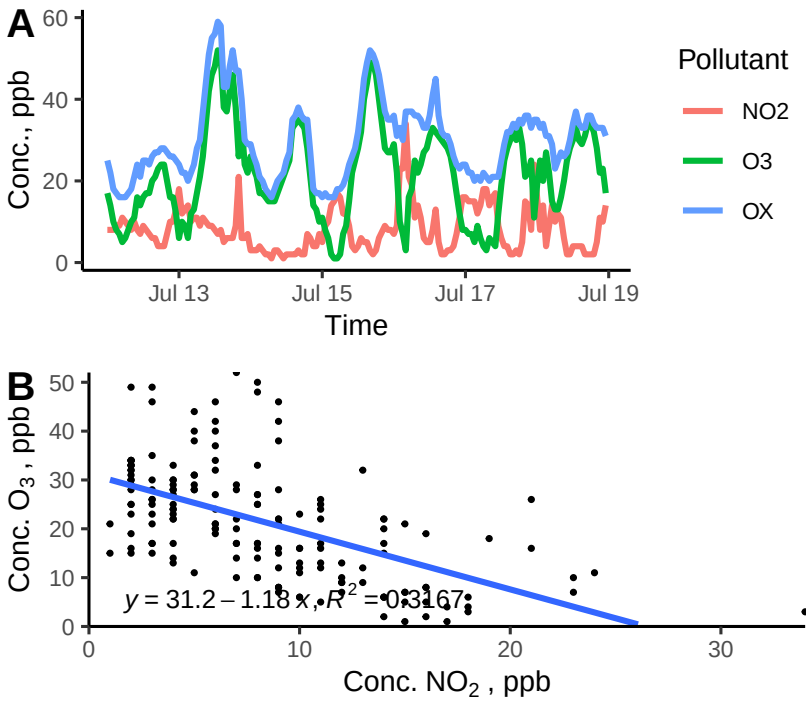

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.3	5.5	8	1	34
O3	21.4	11.6	21	1	52
OX	29.7	9.6	29	16	59
NO2_8hr	8.3	4.2	8	2	21
O3_8hr	21.6	10.1	21	4	45
OX_8hr	29.8	8.6	29	16	52

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day194to200.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day194to200.csv dataset used in CHM 135 Experiment 1.

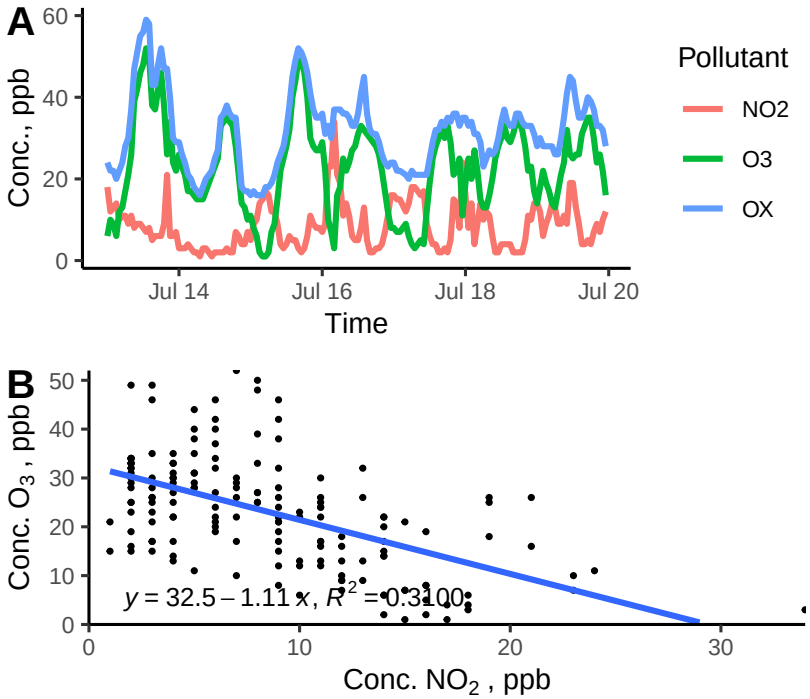

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.5	5.7	8	1	34
O3	23.1	11.3	24	1	52
OX	31.6	9.4	32	16	59
NO2_8hr	8.4	4.2	8	2	21
O3_8hr	23.4	9.6	23	4	45
OX_8hr	31.7	8.3	33	16	53

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day195to201.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day195to201.csv dataset used in CHM 135 Experiment 1.

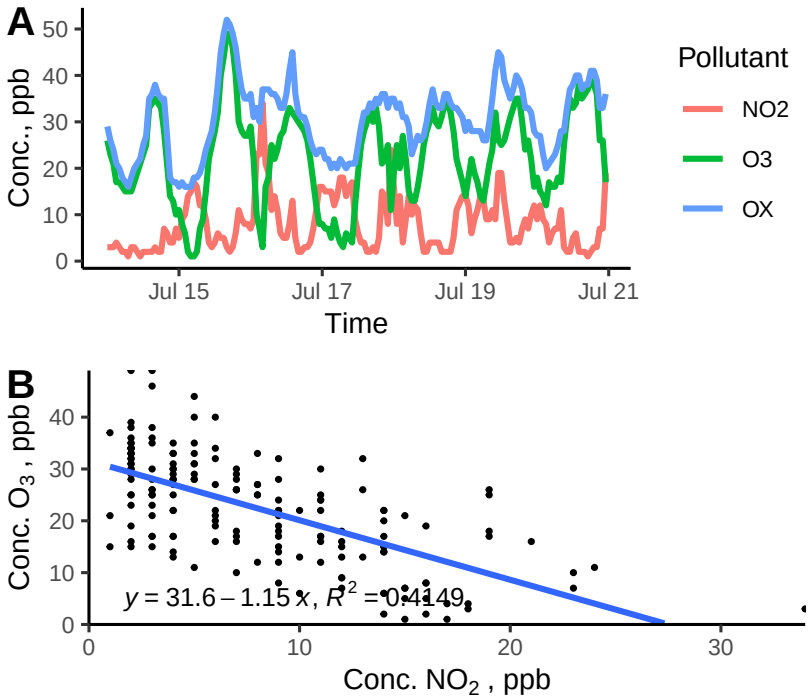

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.0	5.8	7	1	34
O3	22.4	10.3	22	1	49
OX	30.4	8.0	32	16	52
NO2_8hr	8.1	4.4	8	2	21
O3_8hr	22.3	8.9	22	4	43
OX_8hr	30.4	7.0	31	16	48

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day1to7.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day1to7.csv dataset used in CHM 135 Experiment 1.

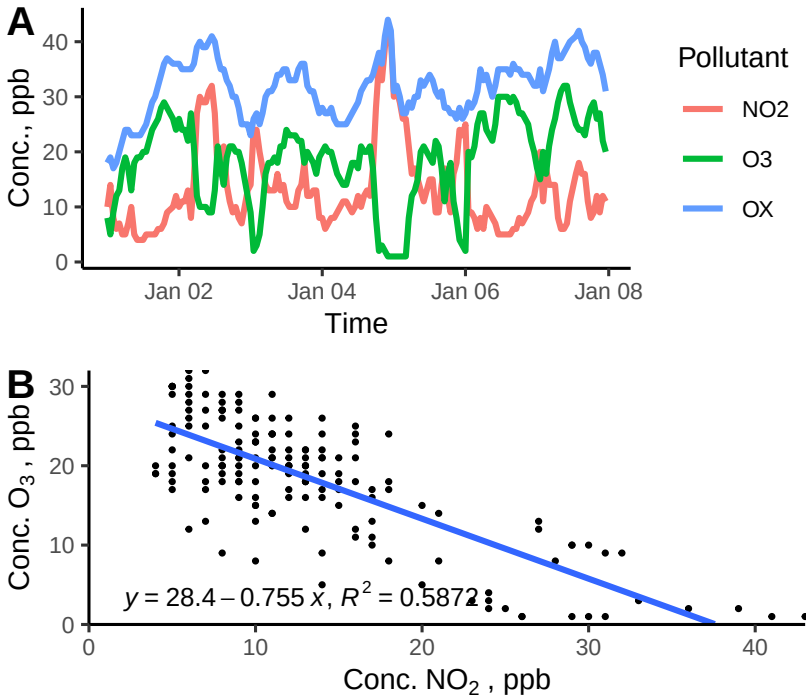

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	13.4	7.9	11	4	43
O3	18.3	7.8	20	1	32
OX	31.7	5.3	32	17	44
NO2_8hr	13.5	6.9	12	5	36
O3_8hr	18.4	6.7	19	1	30
OX_8hr	31.9	4.6	32	20	40

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day2to8.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day2to8.csv dataset used in CHM 135 Experiment 1.

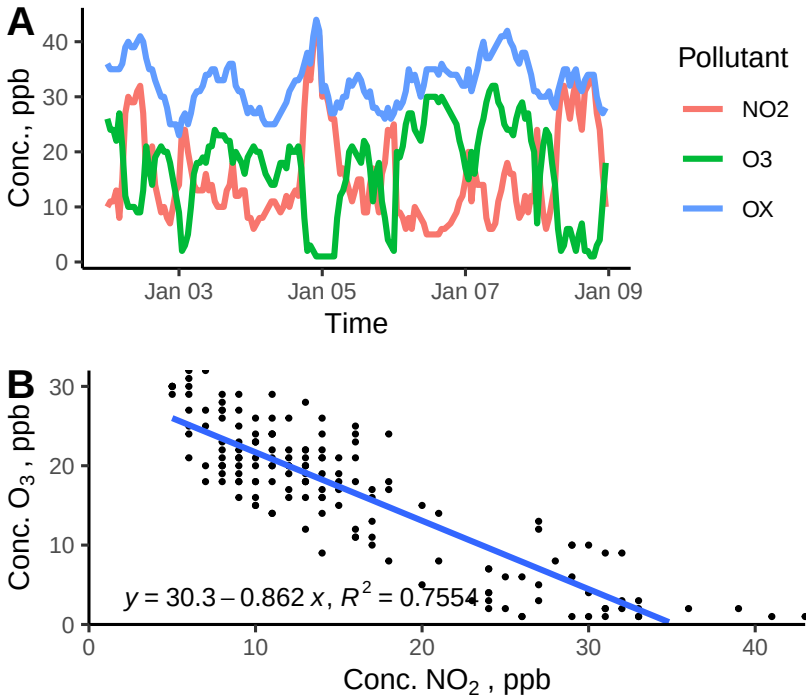

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	15.7	8.6	13	5	43
O3	16.8	8.6	18	1	32
OX	32.5	4.4	33	23	44
NO2_8hr	15.7	7.4	13	5	36
O3_8hr	16.8	7.5	18	1	30
OX_8hr	32.5	3.9	33	25	40

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day3to9.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day3to9.csv dataset used in CHM 135 Experiment 1.

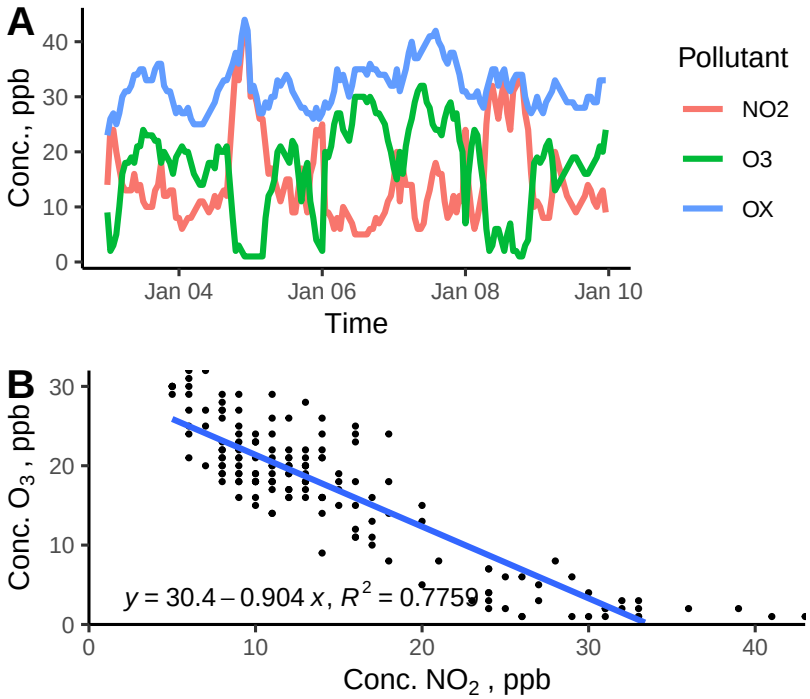

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	14.8	8.2	12	5	43
O3	17.0	8.4	19	1	32
OX	31.8	4.1	32	23	44
NO2_8hr	14.8	7.0	13	5	36
O3_8hr	17.1	7.4	18	1	30
OX_8hr	32.0	3.4	32	26	40

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day4to10.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day4to10.csv dataset used in CHM 135 Experiment 1.

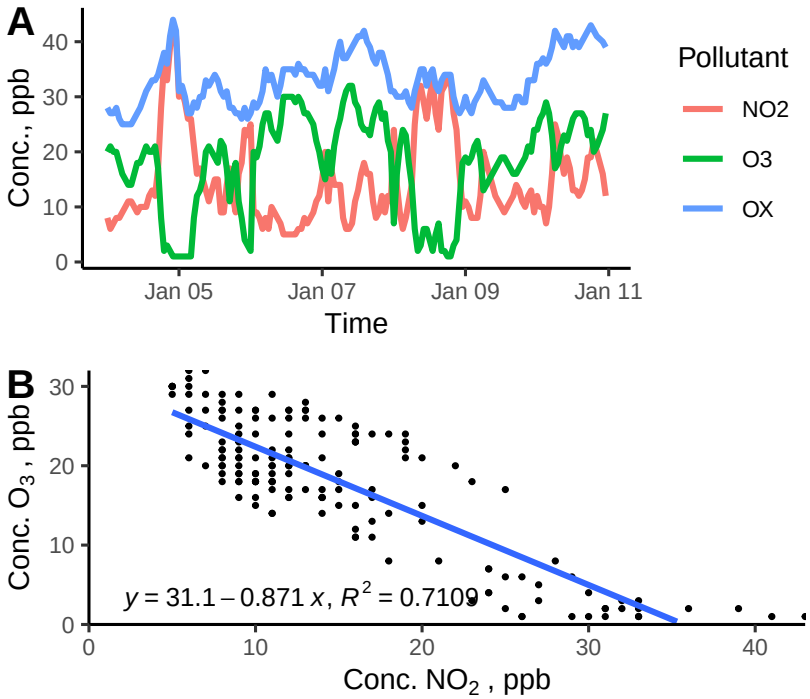

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	15.1	8.2	12	5	43
O3	18.0	8.5	20	1	32
OX	33.0	4.7	33	25	44
NO2_8hr	15.2	7.0	13	5	36
O3_8hr	17.8	7.6	18	1	30
OX_8hr	33.0	4.1	33	26	41

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day5to11.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day5to11.csv dataset used in CHM 135 Experiment 1.

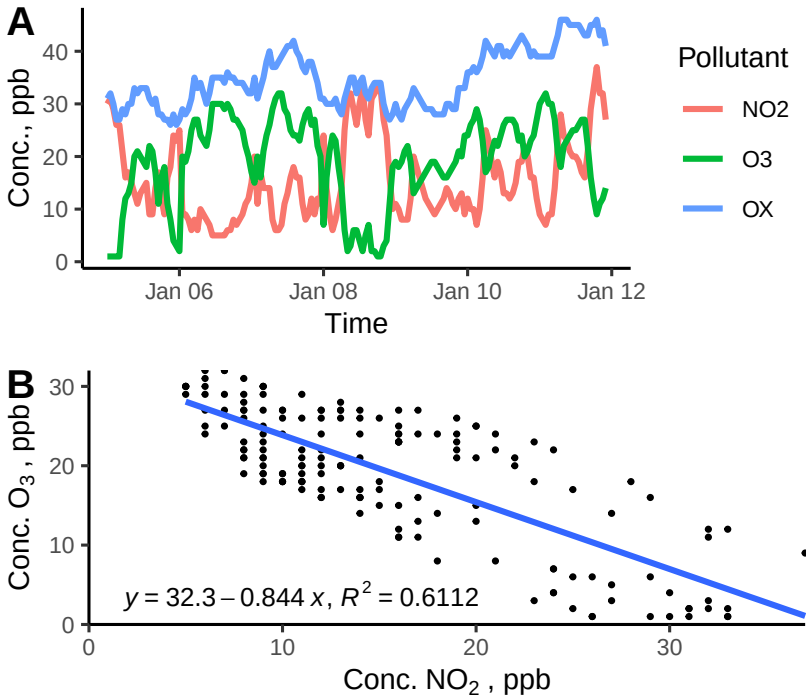

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	15.6	7.8	14	5	37
O3	19.1	8.4	21	1	32
OX	34.7	5.4	34	26	46
NO2_8hr	15.0	6.0	14	5	30
O3_8hr	19.6	7.1	21	3	30
OX_8hr	34.7	5.0	33	27	45

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day6to12.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day6to12.csv dataset used in CHM 135 Experiment 1.

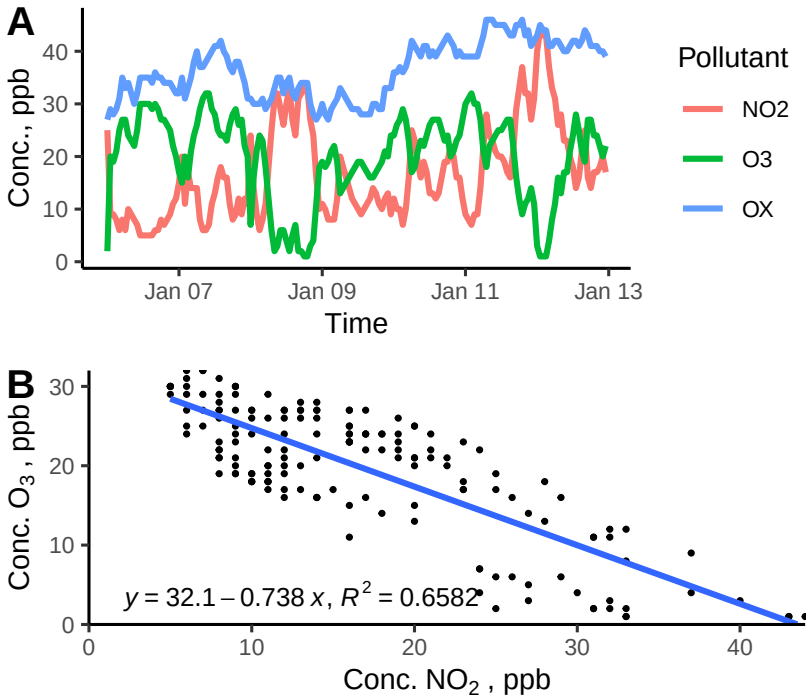

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	16.7	9.0	14	5	44
O3	19.8	8.2	22	1	32
OX	36.5	5.3	36	27	46
NO2_8hr	16.8	8.0	14	5	39
O3_8hr	19.8	7.3	22	3	30
OX_8hr	36.6	5.0	36	28	45

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day7to13.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day7to13.csv dataset used in CHM 135 Experiment 1.

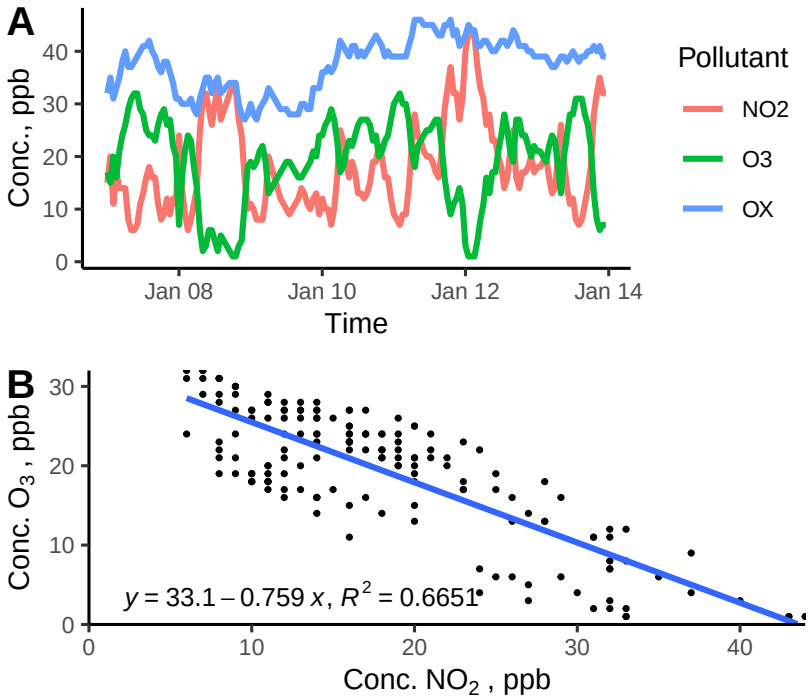

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	18.1	8.6	16	6	44
O3	19.4	8.0	21	1	32
OX	37.4	5.1	39	27	46
NO2_8hr	17.9	7.2	16	9	39
O3_8hr	19.6	6.9	21	3	30
OX_8hr	37.5	4.9	39	28	45

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day8to14.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day8to14.csv dataset used in CHM 135 Experiment 1.

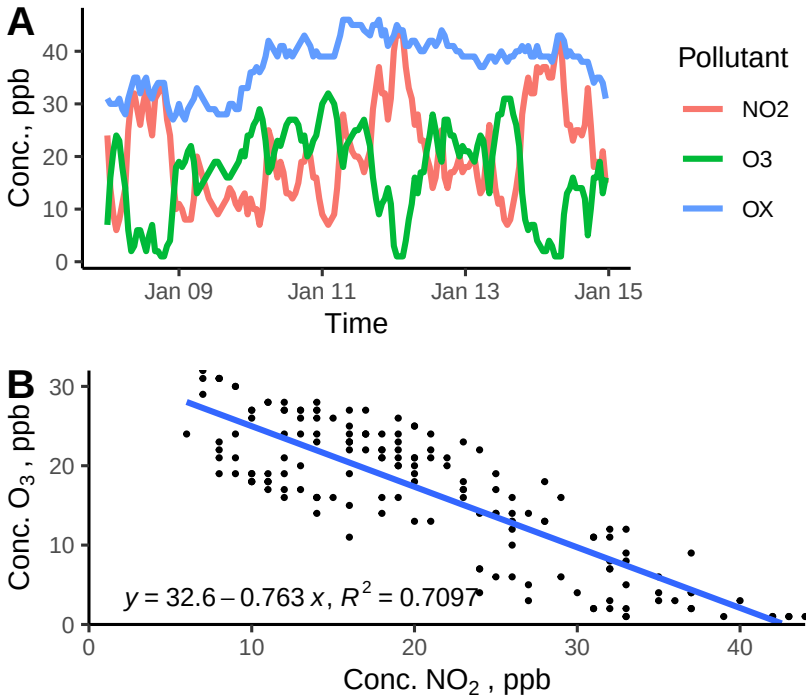

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Pollutant	mean	sd	median	min	max
NO2	20.7	9.4	19	6	44
O3	16.8	8.5	18	1	32
OX	37.5	5.1	39	27	46
NO2_8hr	20.9	8.2	18	10	39
O3_8hr	16.9	7.7	18	2	29
OX_8hr	37.7	4.9	39	28	45

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day9to15.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day9to15.csv dataset used in CHM 135 Experiment 1.

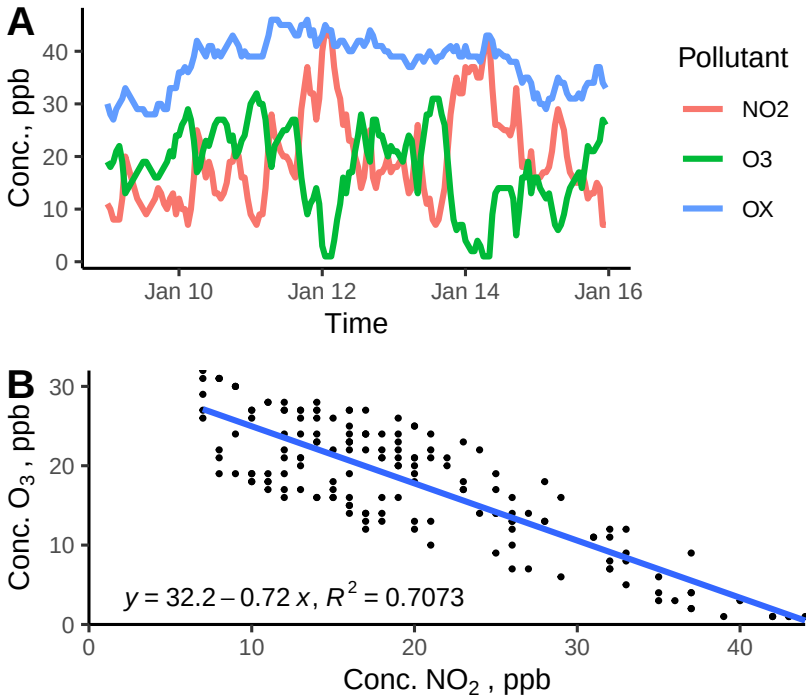

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	19.7	9.1	18	7	44
O3	18.0	7.8	19	1	32
OX	37.7	4.9	39	27	46
NO2_8hr	20.1	7.9	18	10	39
O3_8hr	17.8	6.9	19	2	30
OX_8hr	37.9	4.6	39	28	45

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day10to16.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day10to16.csv dataset used in CHM 135 Experiment 1.

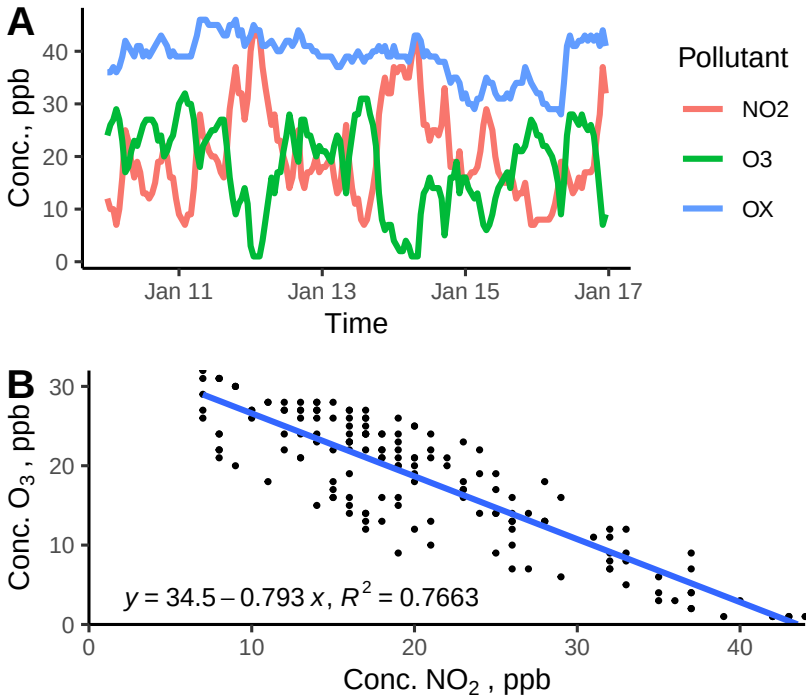

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	20.4	9.0	18	7	44
O3	18.4	8.1	20	1	32
OX	38.7	4.3	39	28	46
NO2_8hr	20.4	7.7	18	8	39
O3_8hr	18.3	7.1	21	2	30
OX_8hr	38.7	4.1	40	29	45

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day11to17.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day11to17.csv dataset used in CHM 135 Experiment 1.

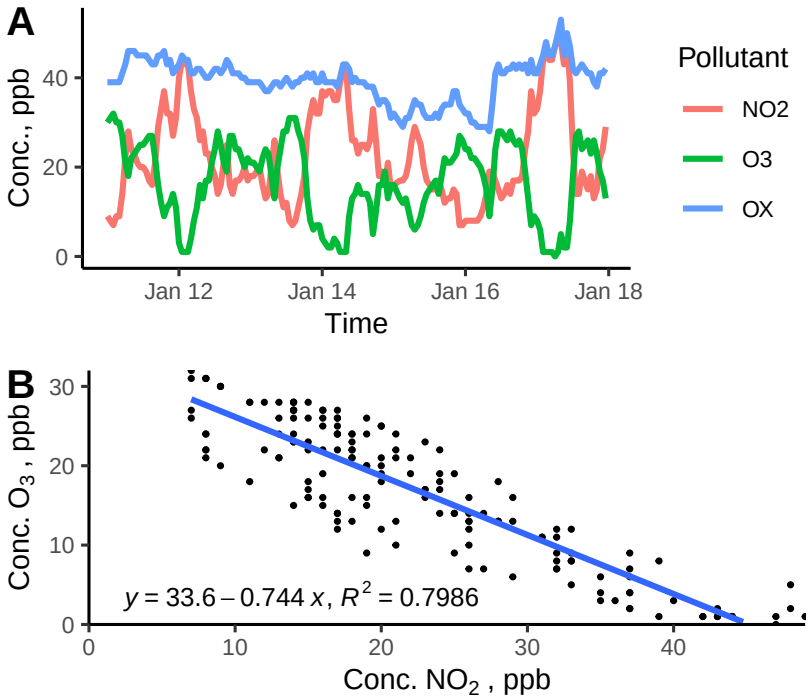

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Pollutant	mean	sd	median	min	max
NO2	22.7	10.6	20	7	49
O3	16.7	8.8	18	0	32
OX	39.4	4.8	40	28	53
NO2_8hr	23.0	9.4	20	8	46
O3_8hr	16.4	7.6	18	1	29
OX_8hr	39.4	4.5	40	29	48

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day12to18.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day12to18.csv dataset used in CHM 135 Experiment 1.

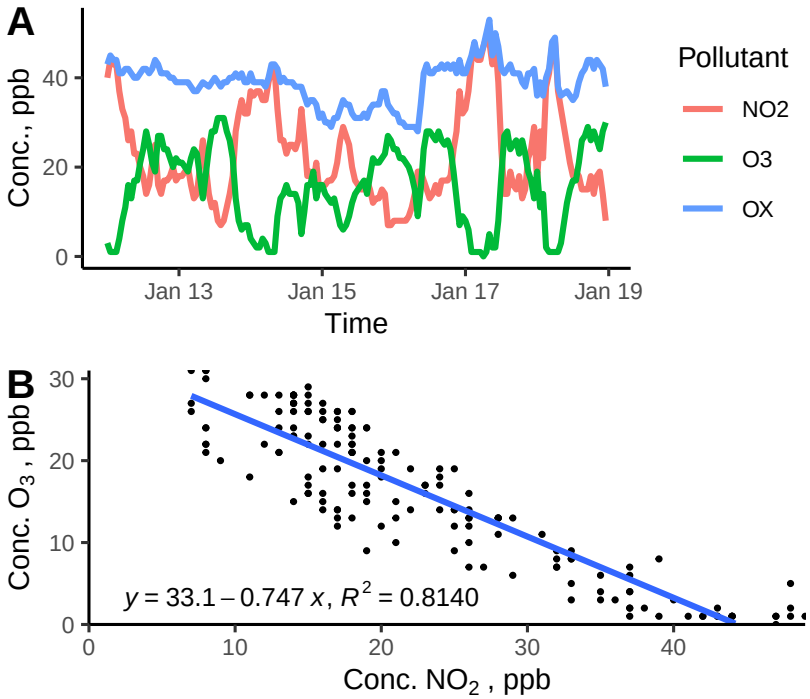

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	23.0	10.9	19	7	49
O3	16.0	9.0	17	0	31
OX	39.0	4.8	40	28	53
NO2_8hr	22.8	9.4	19	8	46
O3_8hr	16.0	7.7	17	1	29
OX_8hr	38.8	4.3	40	29	48

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day13to19.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day13to19.csv dataset used in CHM 135 Experiment 1.

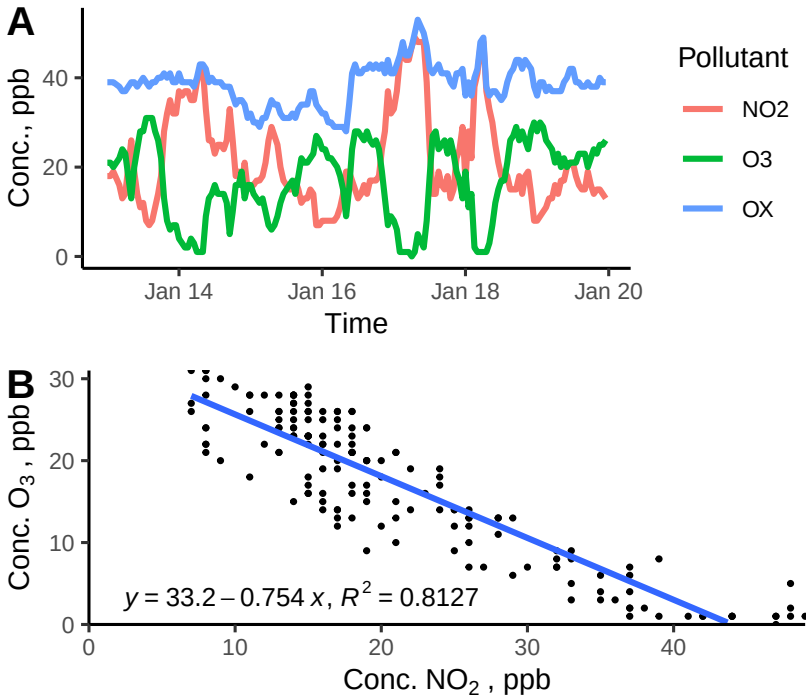

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	21.5	10.5	18	7	49
O3	17.0	8.8	19	0	31
OX	38.5	4.6	39	28	53
NO2_8hr	21.7	9.4	18	8	47
O3_8hr	16.8	7.8	18	1	29
OX_8hr	38.4	4.1	39	29	48

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day14to20.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day14to20.csv dataset used in CHM 135 Experiment 1.

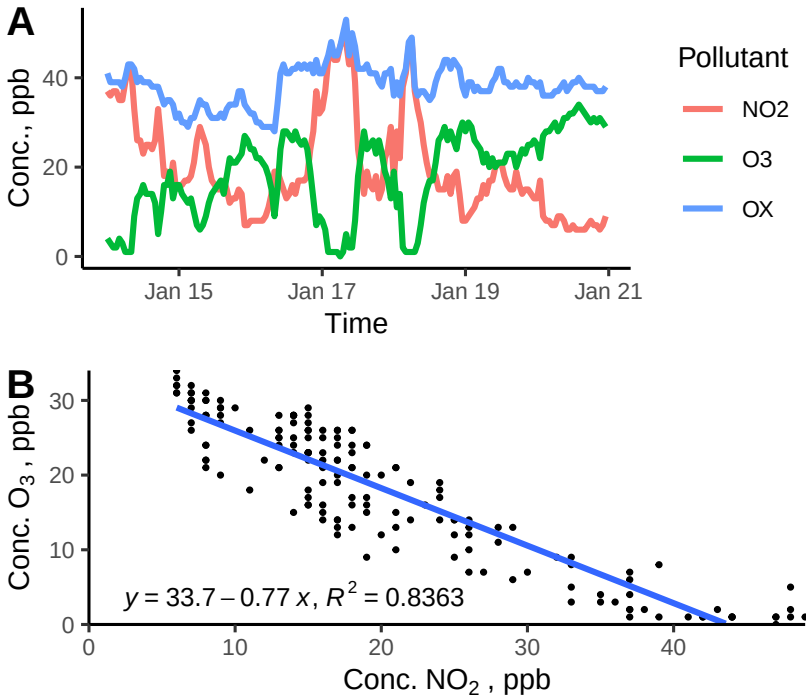

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Pollutant	mean	sd	median	min	max
NO2	20.2	11.3	17	6	49
O3	18.1	9.5	20	0	34
OX	38.3	4.6	38	28	53
NO2_8hr	20.1	10.1	17	6	46
O3_8hr	18.2	8.5	20	1	32
OX_8hr	38.3	4.2	39	29	48

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day15to21.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day15to21.csv dataset used in CHM 135 Experiment 1.

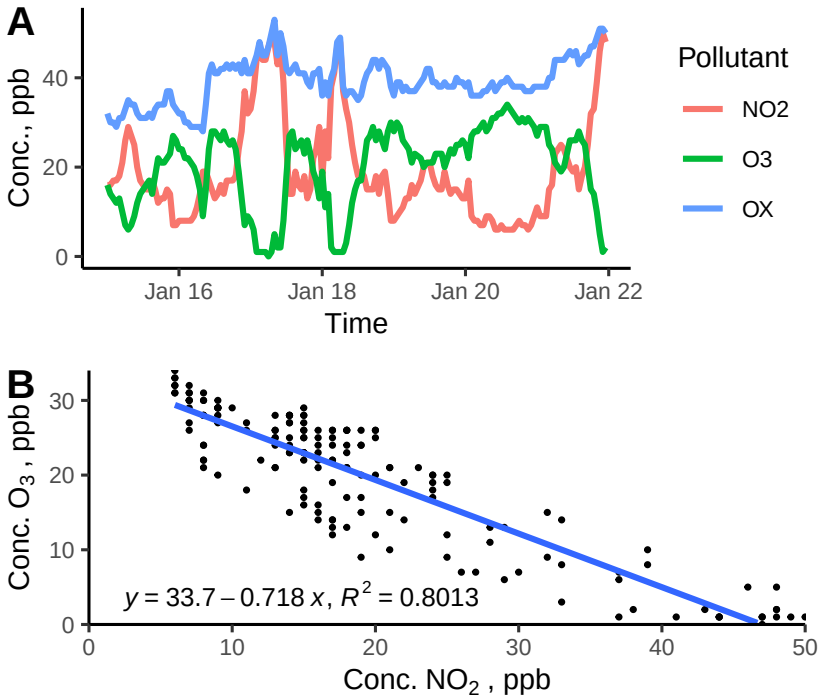

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	19.3	11.3	16	6	50
O3	19.8	9.1	22	0	34
OX	39.2	5.2	39	28	53
NO2_8hr	18.9	9.9	16	6	46
O3_8hr	20.2	8.1	22	1	32
OX_8hr	39.1	4.4	39	29	49

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day180to186.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day180to186.csv dataset used in CHM 135 Experiment 1.

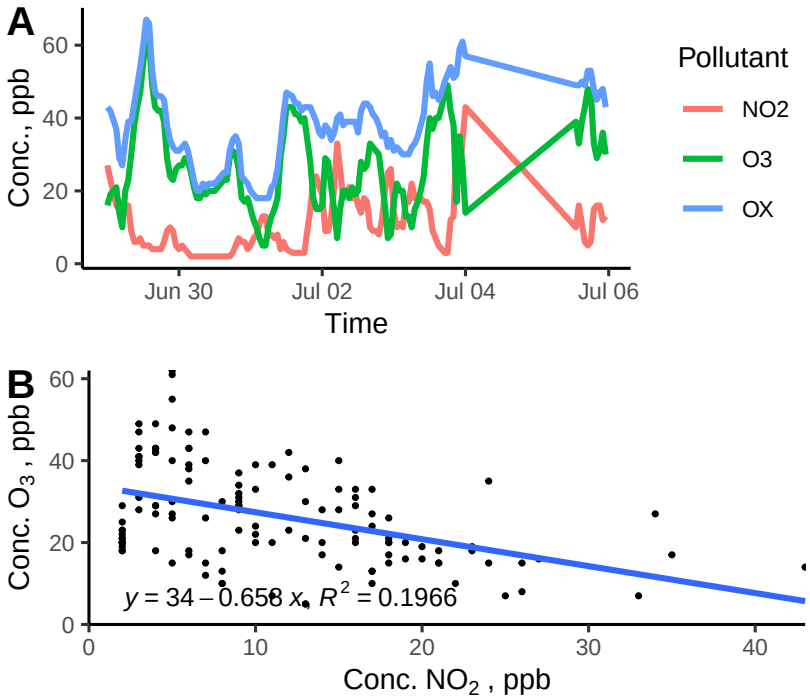

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.1	8.1	9	2	43
O3	26.7	12.1	24	5	62
OX	37.8	11.2	38	18	67
NO2_8hr	10.8	6.3	10	2	25
O3_8hr	26.8	10.1	25	9	51
OX_8hr	37.6	10.3	38	18	57

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day181to187.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day181to187.csv dataset used in CHM 135 Experiment 1.

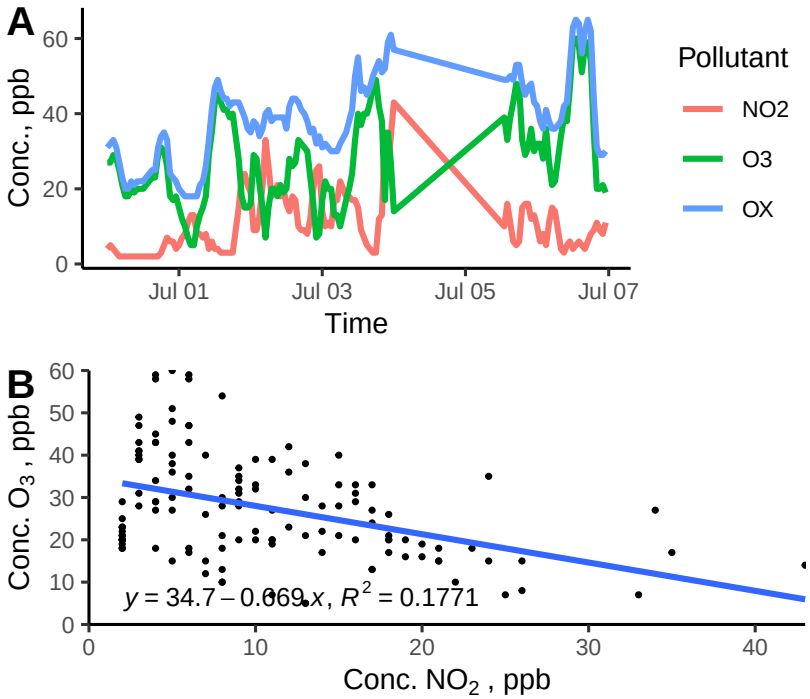

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Pollutant	mean	sd	median	min	max
NO2	10.6	7.9	9	2	43
O3	27.6	12.6	27	5	60
OX	38.2	11.7	38	18	65
NO2_8hr	10.8	6.1	10	2	25
O3_8hr	27.8	10.6	26	9	57
OX_8hr	38.5	10.7	39	18	62

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day182to188.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day182to188.csv dataset used in CHM 135 Experiment 1.

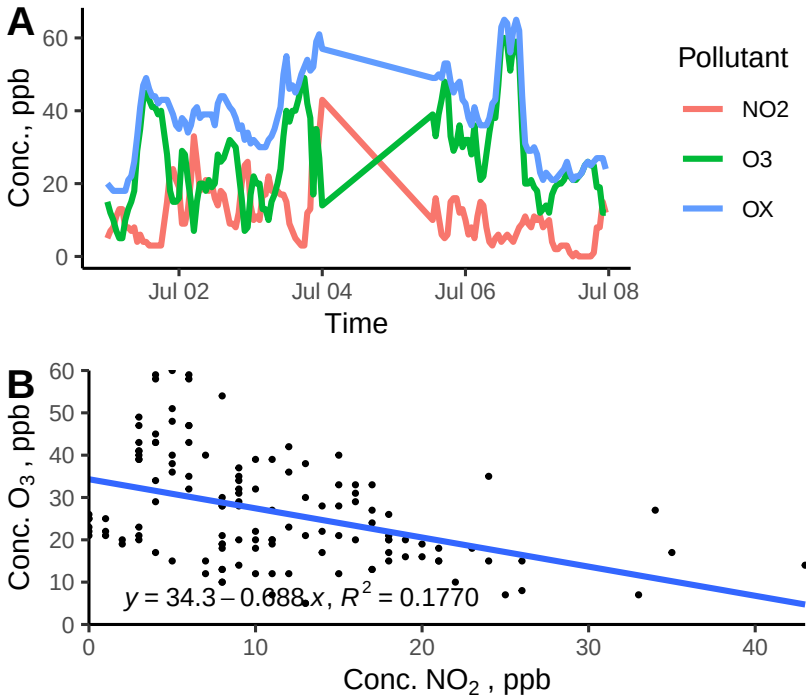

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	10.9	7.9	9	0	43
O3	26.8	12.9	23	5	60
OX	37.7	11.9	38	18	65
NO2_8hr	11.0	6.0	10	0	25
O3_8hr	27.5	10.7	26	9	57
OX_8hr	38.4	10.6	39	18	62

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day183to189.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day183to189.csv dataset used in CHM 135 Experiment 1.

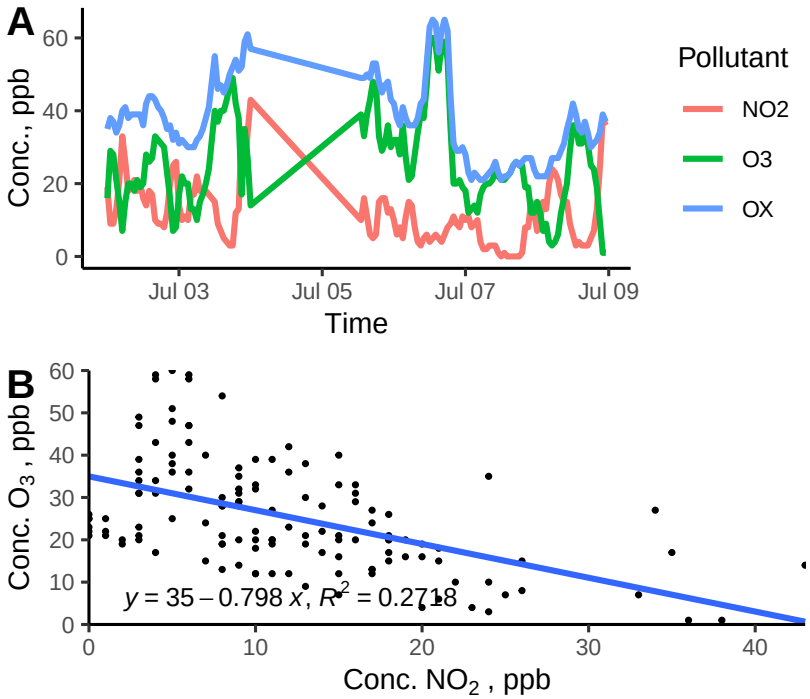

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.8	8.5	10	0	43
O3	25.6	13.0	23	1	60
OX	37.4	11.3	36	21	65
NO2_8hr	11.3	6.0	11	0	25
O3_8hr	26.1	10.9	24	6	57
OX_8hr	37.4	10.6	37	22	62

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day184to190.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day184to190.csv dataset used in CHM 135 Experiment 1.

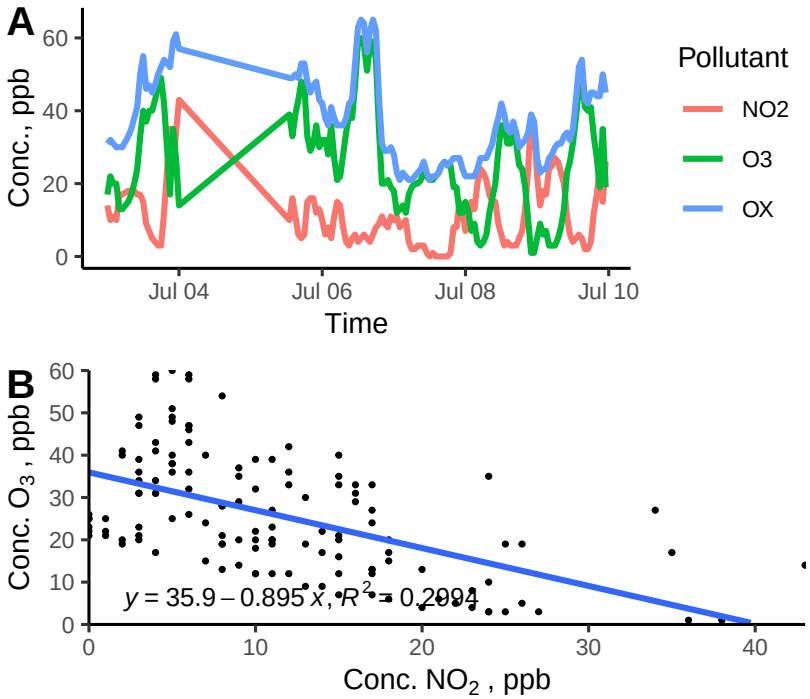

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.3	8.7	10	0	43
O3	25.8	14.2	24	1	60
OX	37.1	11.9	35	21	65
NO2_8hr	11.1	6.4	10	0	25
O3_8hr	26.0	12.4	26	5	57
OX_8hr	37.1	11.0	36	22	62

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day185to191.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day185to191.csv dataset used in CHM 135 Experiment 1.

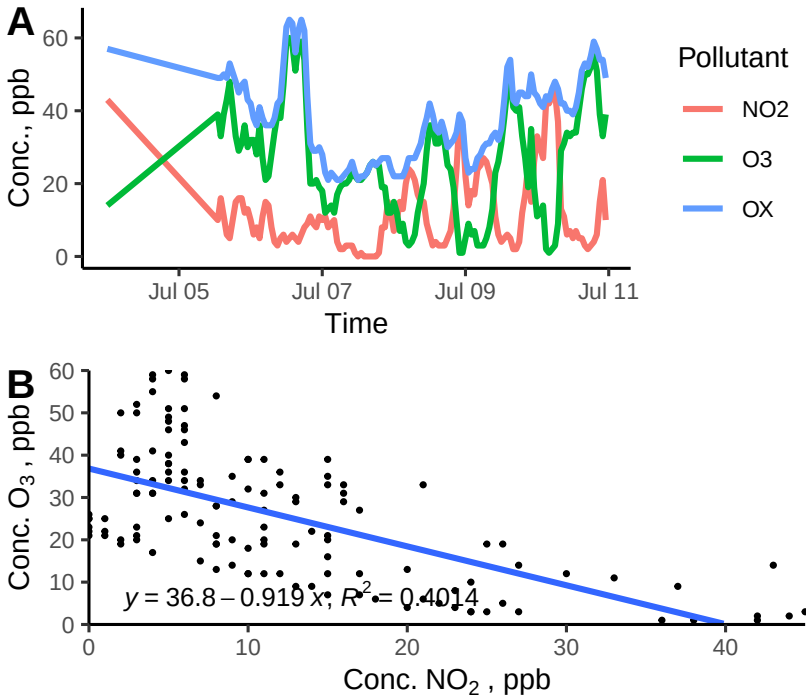

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	12.0	10.5	9	0	45
O3	25.8	15.2	25	1	60
OX	37.8	11.8	38	21	65
NO2_8hr	11.8	8.5	9	0	38
O3_8hr	25.3	13.3	24	5	57
OX_8hr	37.1	10.5	37	22	62

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day186to192.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day186to192.csv dataset used in CHM 135 Experiment 1.

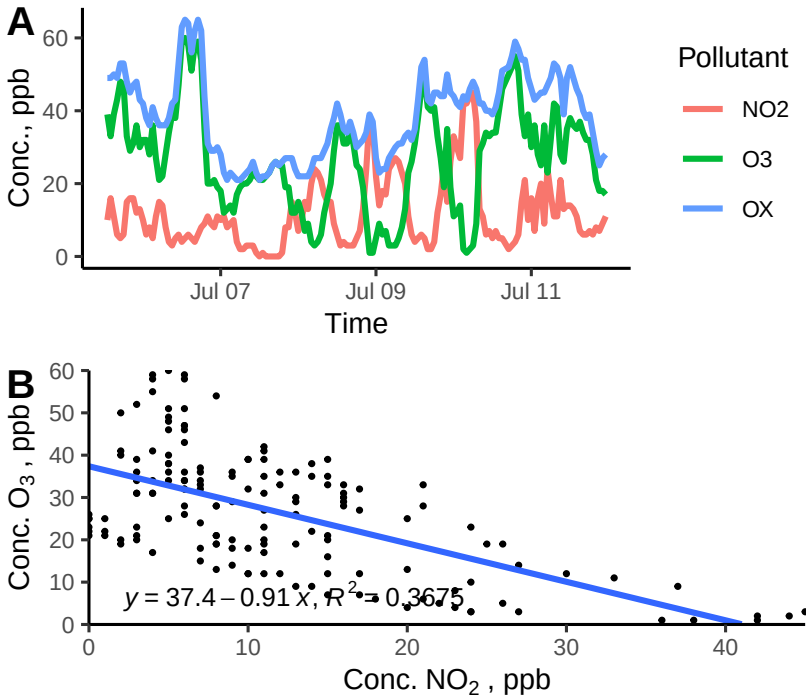

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.7	9.5	9	0	45
O3	26.7	14.2	27	1	60
OX	38.4	11.3	39	21	65
NO2_8hr	11.8	7.8	10	0	38
O3_8hr	26.6	12.4	28	5	57
OX_8hr	38.4	10.3	41	22	62

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.

Toronto_60435_2019_Day187to193.csv

The results below are what the student results should look like for the Toronto_60435_2019_Day187to193.csv dataset used in CHM 135 Experiment 1.

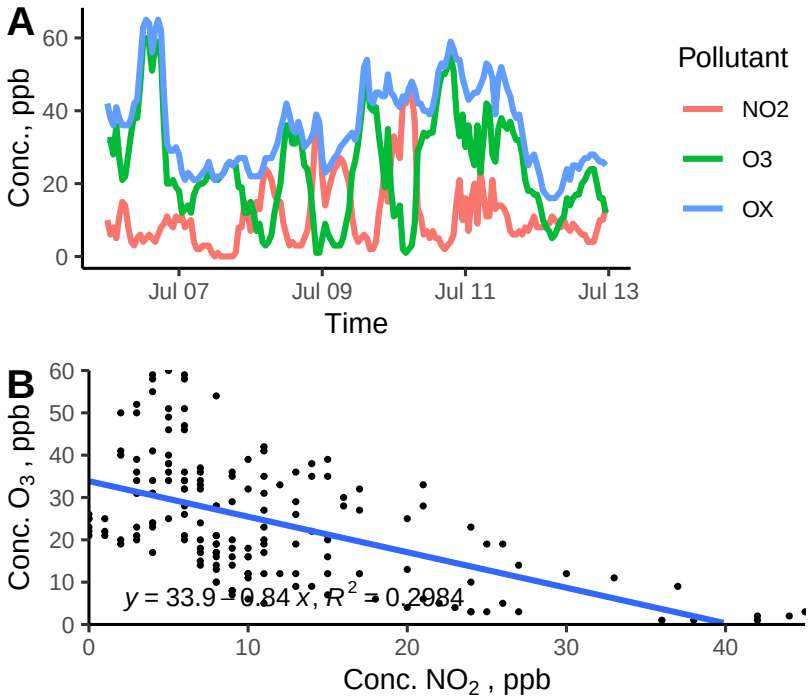

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.1	9.2	8	0	45
O3	24.5	14.1	23	1	60
OX	35.6	11.9	34	16	65
NO2_8hr	11.2	7.7	9	0	38
O3_8hr	24.6	12.5	22	4	57
OX_8hr	35.8	11.2	35	17	62

Table 1: Summary statistics for 1 hr and 8hr concentration of pollutants, all concentrations are in ppb.

Notes on results:

Students are **not** expected to calculate *mean*, *sd*, and *median* of 8 hr averages. If student *sd* values differ slightly from provided *sd* values, they may have used the *STDEV.P* function rather than *STDEV.S* in Excel calculations. Do not substract points, but make a note of it.