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.

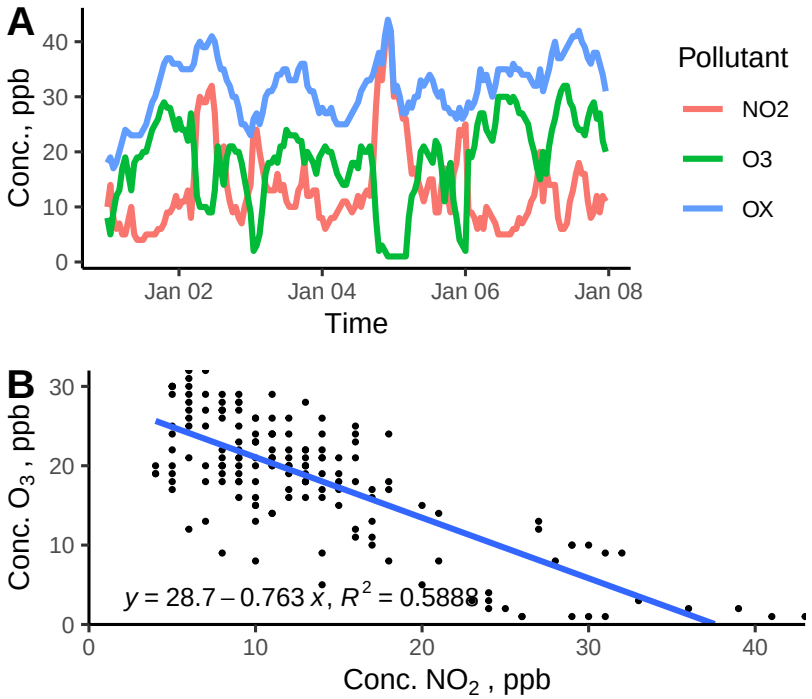

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	13.4	7.9	11	4	43
O3	18.5	7.8	20	1	32
OX	31.9	5.3	32	17	44
NO2_8hr	13.5	6.8	12	5	36
O3_8hr	18.6	6.8	19	1	30
OX_8hr	32.1	4.6	33	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.

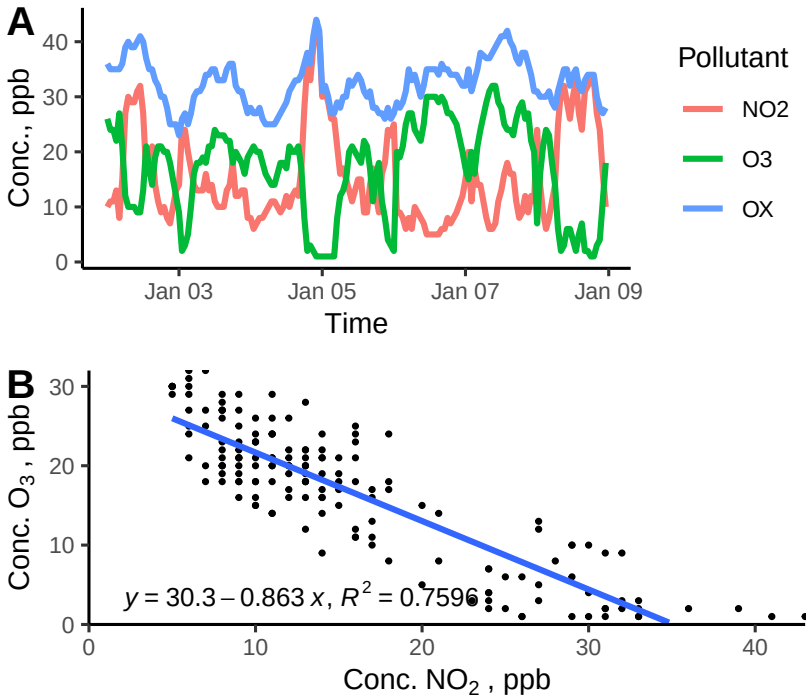

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	15.6	8.7	13	5	43
O3	16.8	8.6	18	1	32
OX	32.4	4.4	32	23	44
NO2_8hr	15.6	7.4	13	5	36
O3_8hr	16.8	7.4	18	1	30
OX_8hr	32.5	3.8	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.

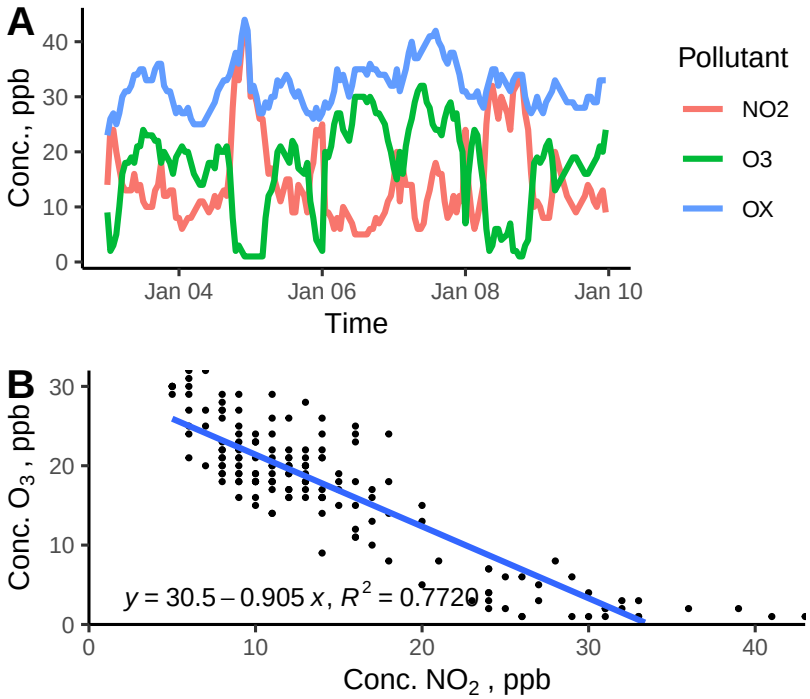

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	14.7	8.1	12	5	43
O3	17.1	8.3	19	1	32
OX	31.8	4.0	32	23	44
NO2_8hr	14.7	6.9	12	5	36
O3_8hr	17.3	7.3	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.

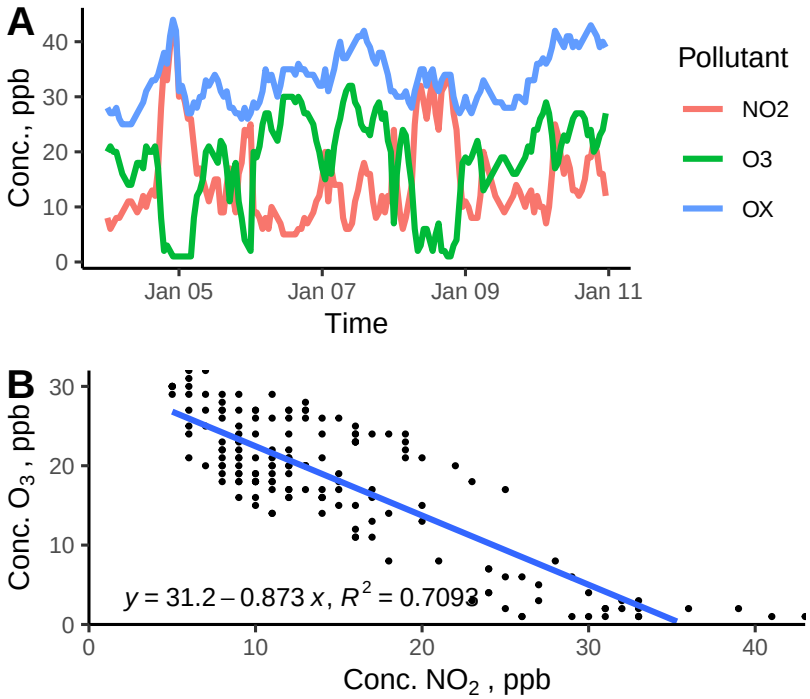

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	15.1	8.2	12	5	43
O3	18.0	8.5	20	1	32
OX	33.1	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	33.1	4.2	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.

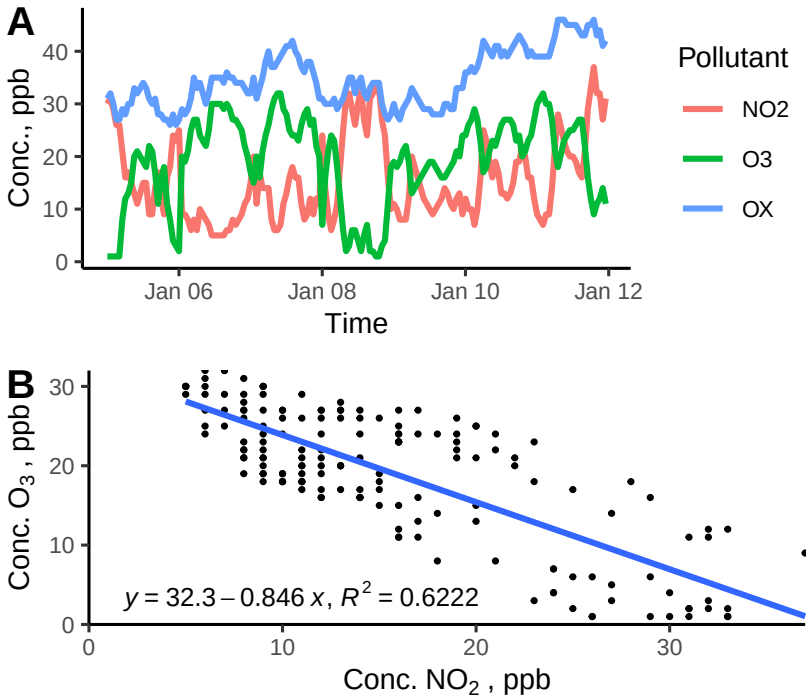

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	15.6	7.9	14	5	37
O3	19.1	8.4	21	1	32
OX	34.7	5.3	34	26	46
NO2_8hr	15.1	6.1	14	5	32
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.

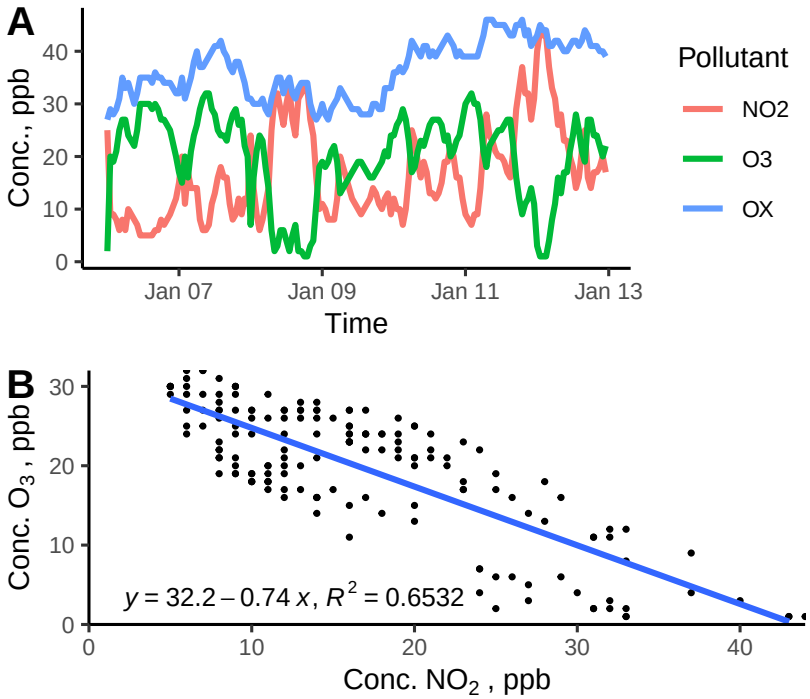

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	16.8	9.0	14	5	44
O3	19.7	8.2	21	1	32
OX	36.5	5.4	37	27	46
NO2_8hr	16.8	8.0	14	5	39
O3_8hr	19.8	7.3	22	3	30
OX_8hr	36.6	5.1	37	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.

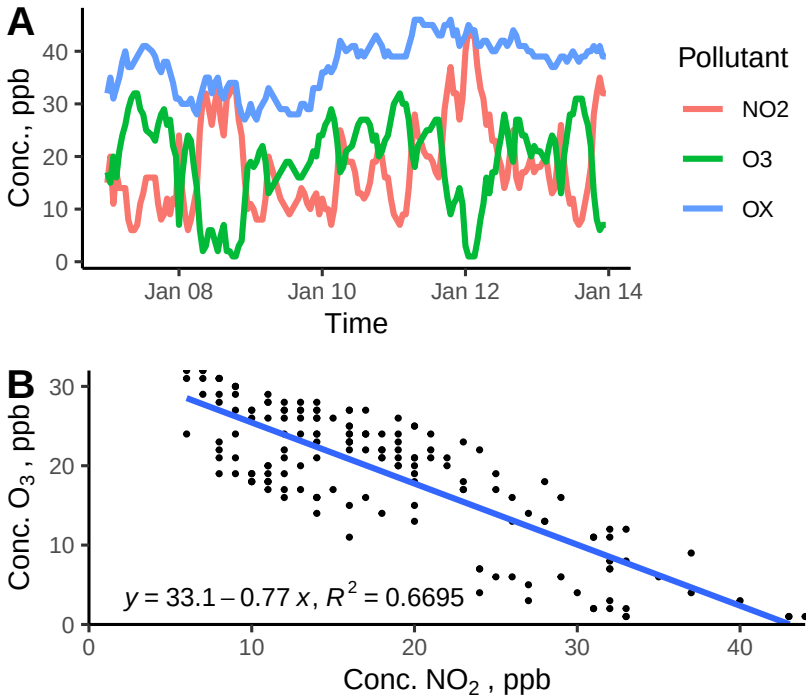

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	18.2	8.7	16	6	44
O3	19.1	8.2	21	1	32
OX	37.3	5.1	39	27	46
NO2_8hr	18.0	7.3	17	9	39
O3_8hr	19.4	7.1	21	3	30
OX_8hr	37.4	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.

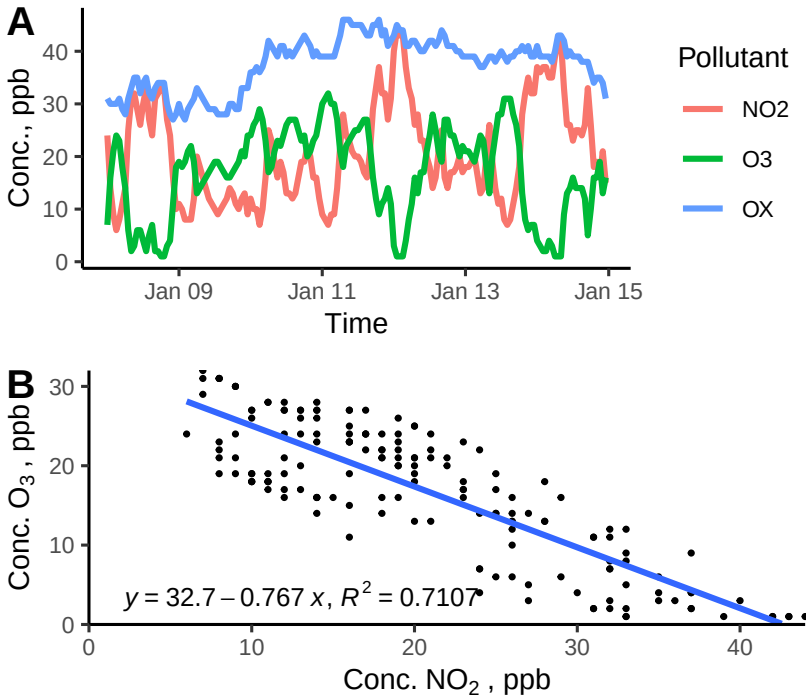

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	20.6	9.4	19	6	44
O3	16.9	8.6	18	1	32
OX	37.5	5.1	39	27	46
NO2_8hr	20.8	8.3	18	10	39
O3_8hr	16.9	7.7	18	2	30
OX_8hr	37.7	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_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.

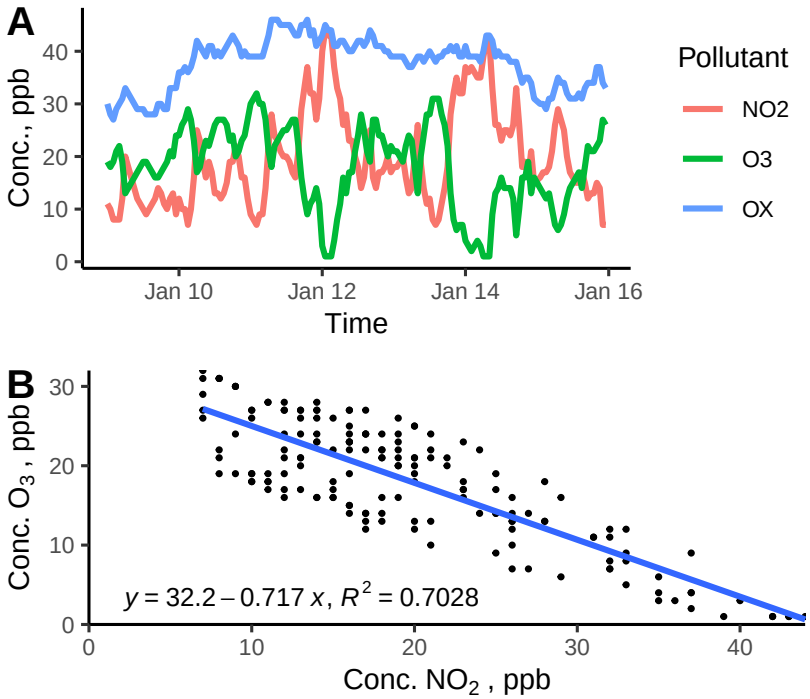

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	19.7	9.0	18	7	44
O3	18.1	7.7	19	1	32
OX	37.7	4.9	39	27	46
NO2_8hr	20.0	7.8	18	10	39
O3_8hr	17.9	6.9	19	2	30
OX_8hr	38.0	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.

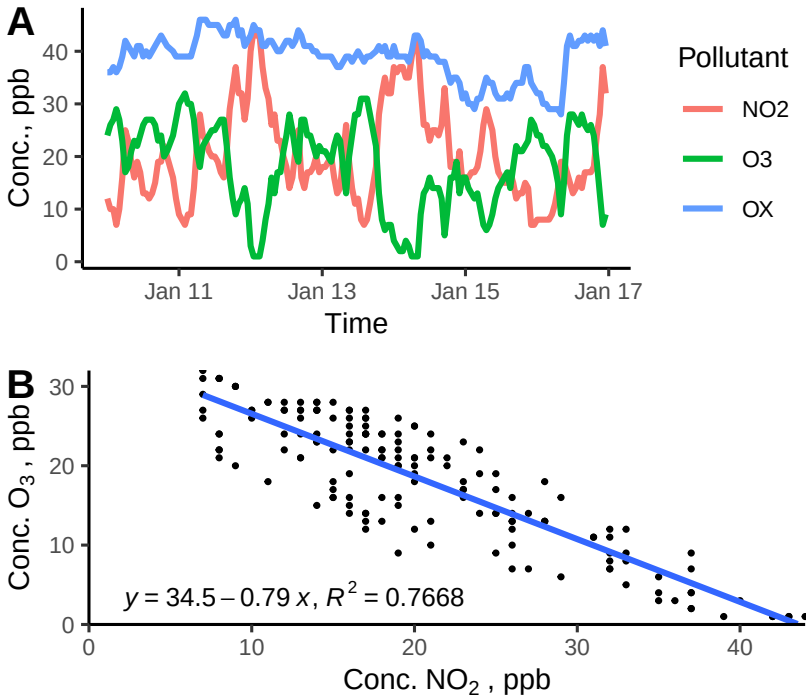

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	20.5	9.0	18	7	44
O3	18.3	8.1	20	1	32
OX	38.7	4.3	39	28	46
NO2_8hr	20.5	7.8	18	8	39
O3_8hr	18.2	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.

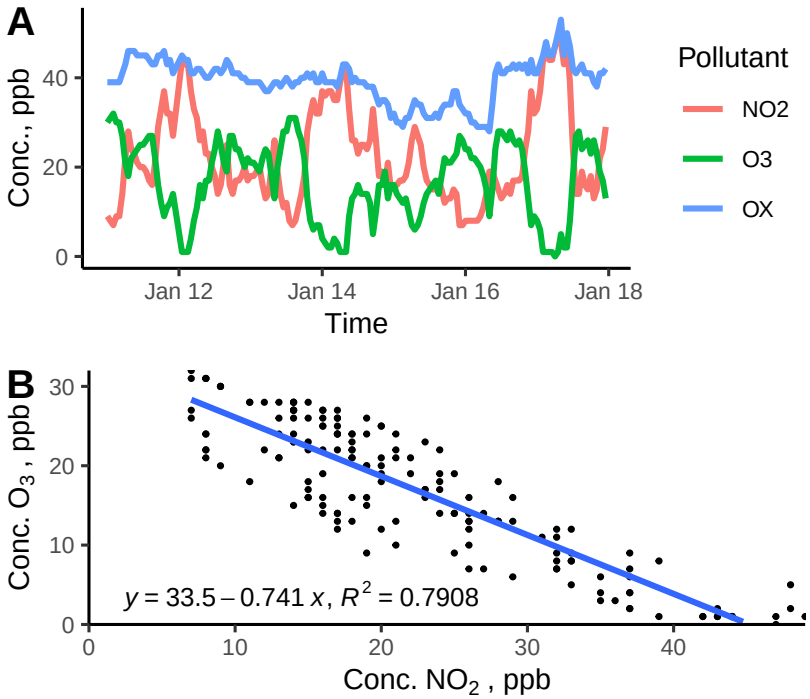

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	22.5	10.5	19	7	49
O3	16.9	8.8	18	0	32
OX	39.3	4.8	40	28	53
NO2_8hr	22.7	9.3	20	8	46
O3_8hr	16.6	7.6	18	1	29
OX_8hr	39.3	4.6	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_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.

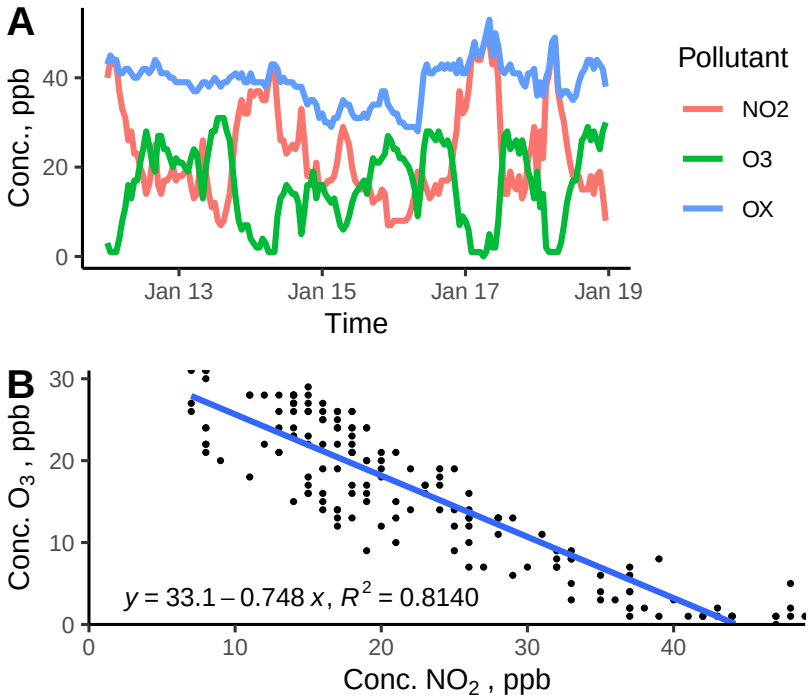

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	23.0	10.9	19	7	49
O3	15.9	9.0	17	0	31
OX	38.9	4.8	39	28	53
NO2_8hr	22.9	9.4	19	8	46
O3_8hr	15.9	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.

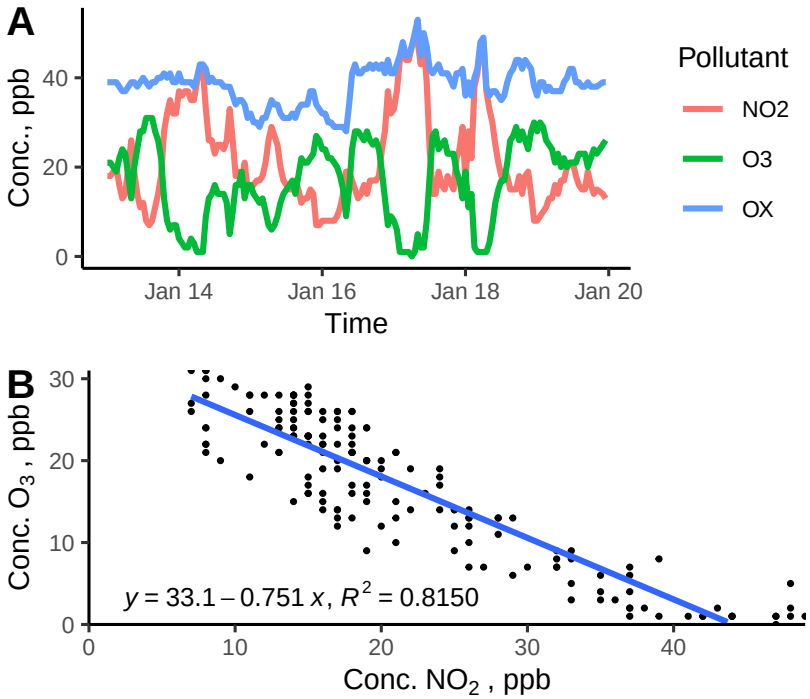

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	21.7	10.6	18	7	49
O3	16.8	8.8	19	0	31
OX	38.5	4.6	39	28	53
NO2_8hr	21.9	9.5	18	8	46
O3_8hr	16.6	7.9	18	1	29
OX_8hr	38.5	4.2	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.

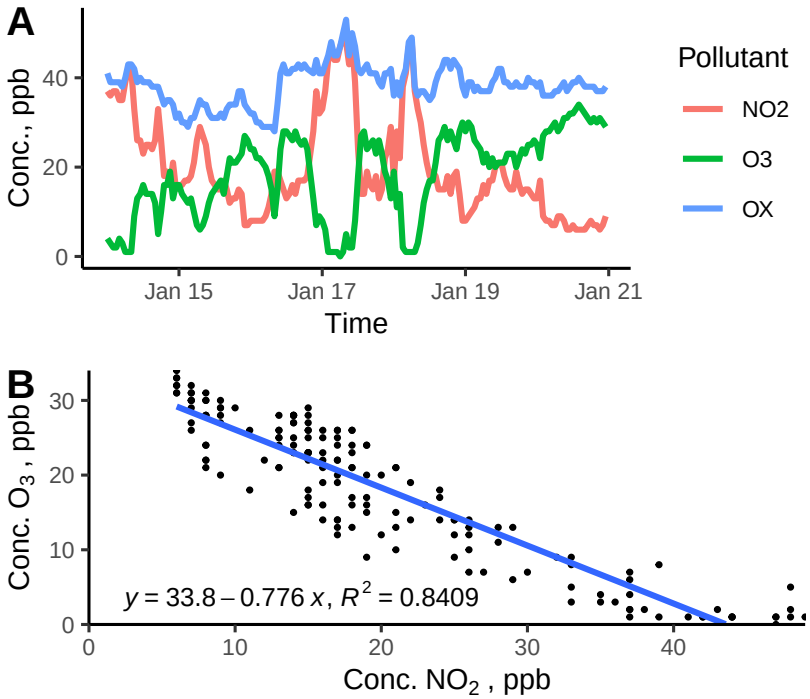

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

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

Pollutant	mean	sd	median	min	max
NO2	20.0	11.3	17	6	49
O3	18.3	9.6	21	0	34
OX	38.3	4.6	38	28	53
NO2_8hr	20.0	10.2	17	6	46
O3_8hr	18.3	8.6	21	1	32
OX_8hr	38.3	4.1	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.

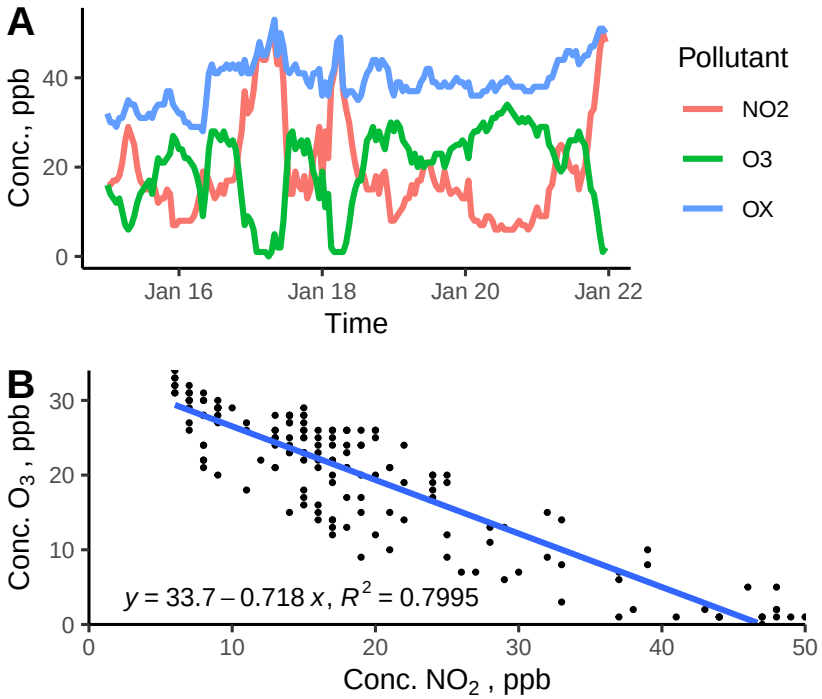

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

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.

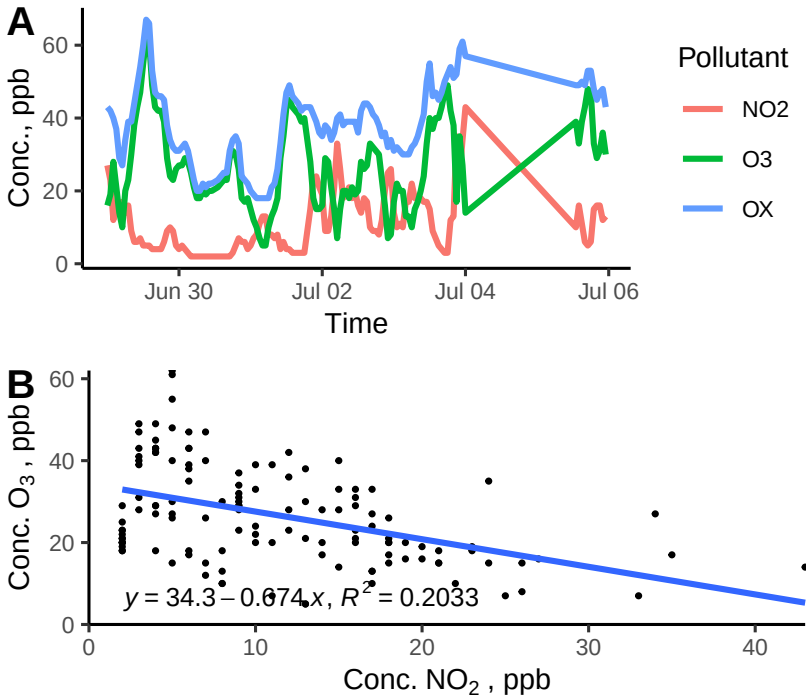

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.2	8.1	9	2	43
O3	26.8	12.1	26	5	62
OX	37.9	11.1	38	18	67
NO2_8hr	10.9	6.2	11	2	25
O3_8hr	26.8	10.1	25	9	51
OX_8hr	37.7	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.

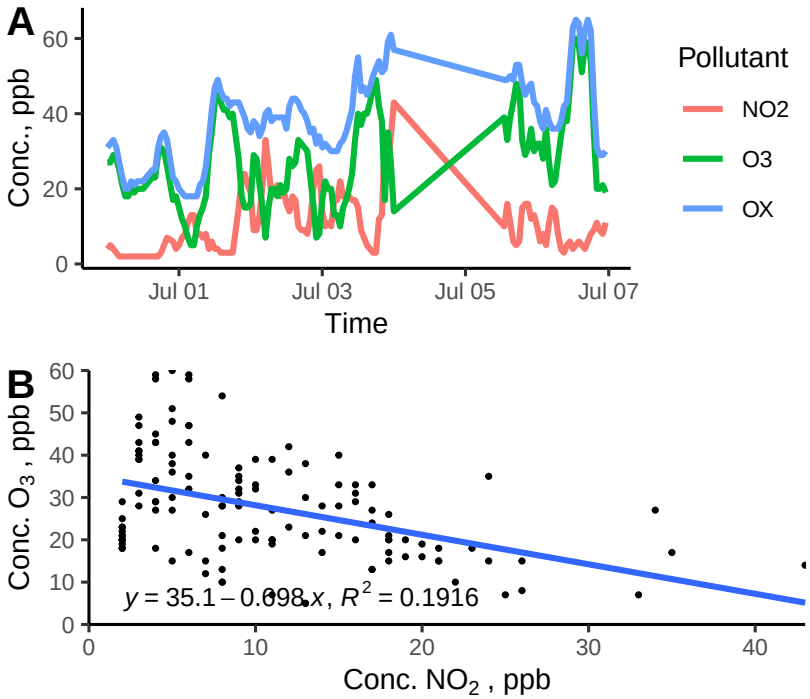

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

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

Pollutant	mean	sd	median	min	max
NO2	10.7	7.9	9	2	43
O3	27.7	12.6	27	5	60
OX	38.4	11.5	38	18	65
NO2_8hr	10.9	6.1	10	2	25
O3_8hr	27.8	10.6	26	9	57
OX_8hr	38.7	10.5	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.

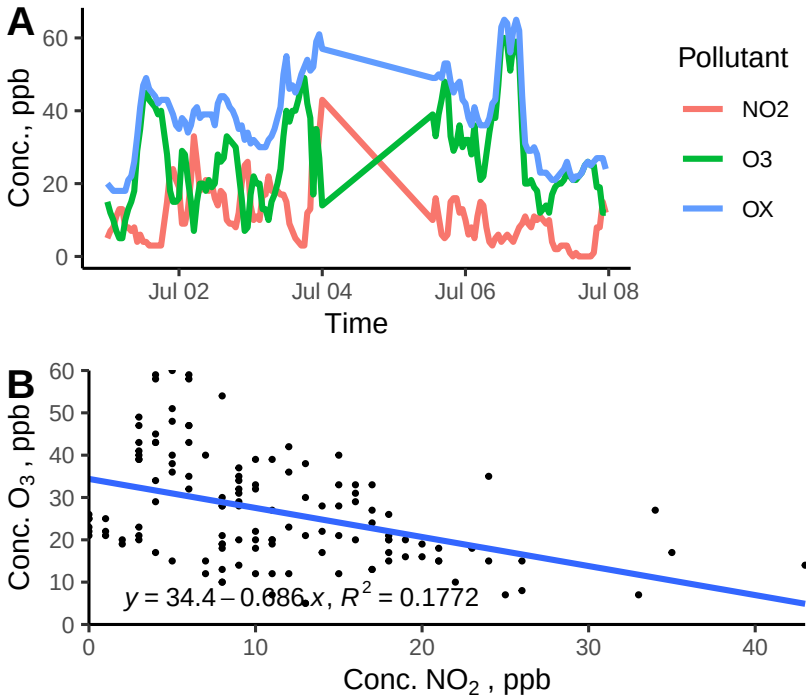

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

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

Pollutant	mean	sd	median	min	max
NO2	11.0	7.9	9	0	43
O3	26.9	12.8	24	5	60
OX	37.8	11.9	38	18	65
NO2_8hr	11.1	6.0	10	0	25
O3_8hr	27.5	10.6	26	9	57
OX_8hr	38.6	10.6	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_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.

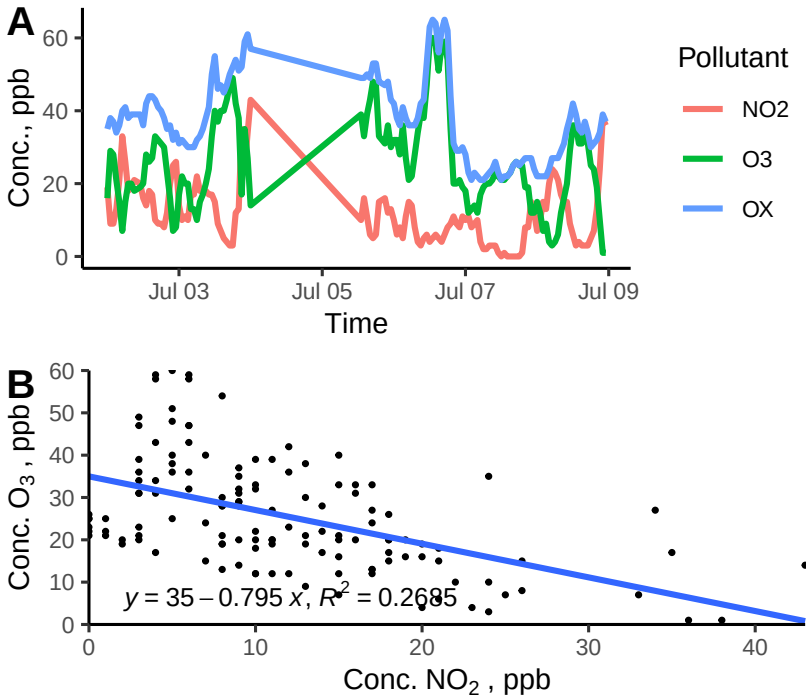

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.7	8.5	10	0	43
O3	25.7	13.1	23	1	60
OX	37.4	11.3	36	21	65
NO2_8hr	11.3	6.0	10	0	25
O3_8hr	26.2	11.0	24	6	57
OX_8hr	37.5	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.

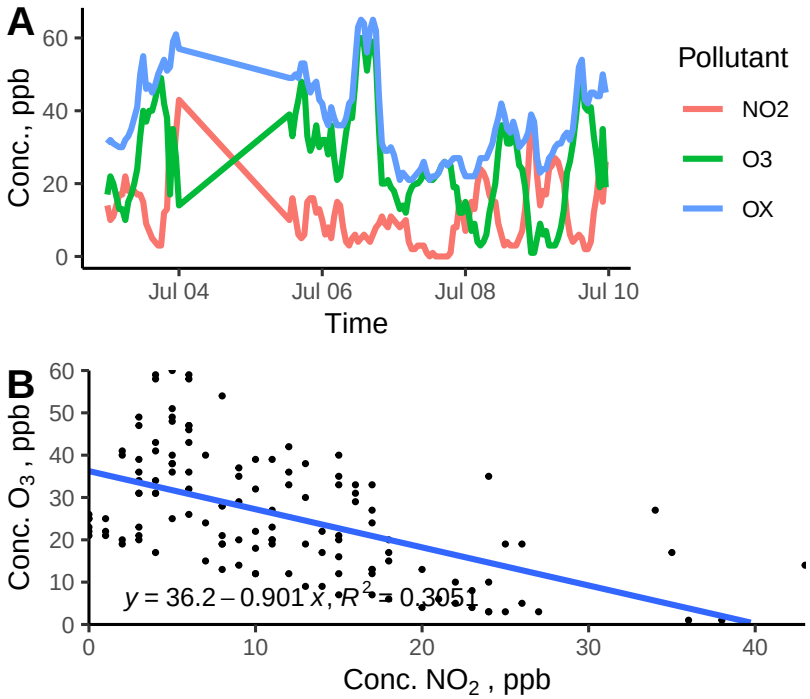

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

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

Pollutant	mean	sd	median	min	max
NO2	11.4	8.7	10	0	43
O3	26.0	14.2	24	1	60
OX	37.4	11.9	35	21	65
NO2_8hr	11.2	6.6	10	0	25
O3_8hr	26.1	12.5	27	5	57
OX_8hr	37.3	11.0	36	22	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_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.

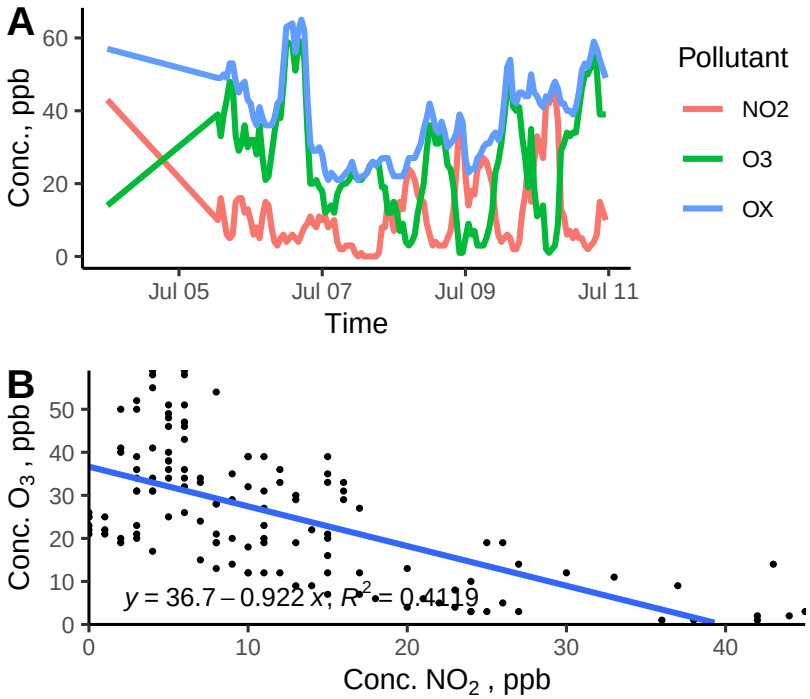

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.9	10.5	9	0	45
O3	25.7	15.0	25	1	59
OX	37.6	11.6	38	21	65
NO2_8hr	11.8	8.5	10	0	38
O3_8hr	25.1	13.0	23	5	55
OX_8hr	36.9	10.3	37	22	61

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.

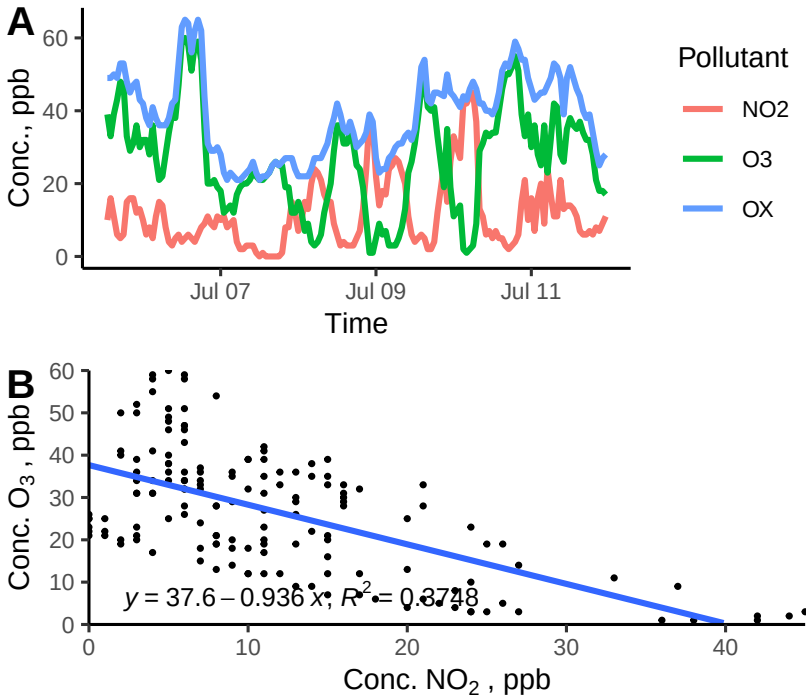

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.6	9.4	9	0	45
O3	26.8	14.4	28	1	60
OX	38.4	11.4	39	21	65
NO2_8hr	11.6	7.7	10	0	39
O3_8hr	26.7	12.6	28	5	57
OX_8hr	38.4	10.4	40	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.

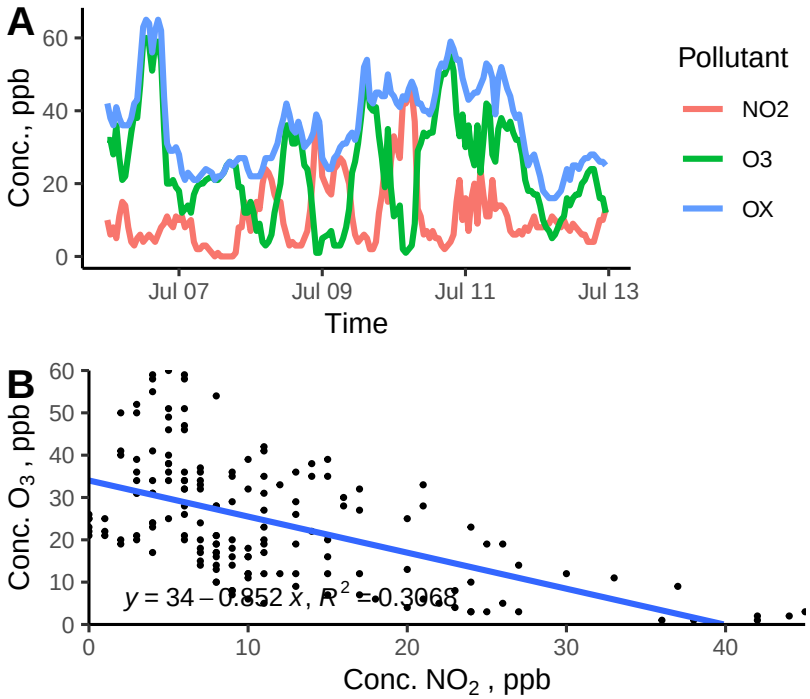

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.2	9.2	8	0	45
O3	24.4	14.2	22	1	60
OX	35.7	11.9	34	16	65
NO2_8hr	11.3	7.7	9	0	38
O3_8hr	24.5	12.6	22	4	57
OX_8hr	35.8	11.1	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.

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.

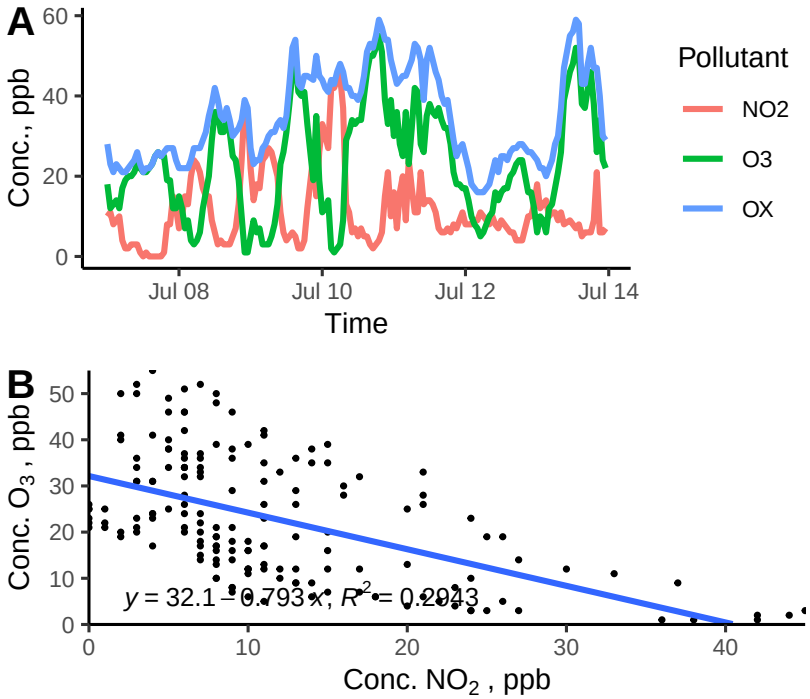

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	11.5	9.2	9	0	45
O3	23.0	13.4	21	1	55
OX	34.5	11.4	32	16	59
NO2_8hr	11.6	7.6	9	0	38
O3_8hr	23.1	11.9	21	5	49
OX_8hr	34.7	10.7	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.

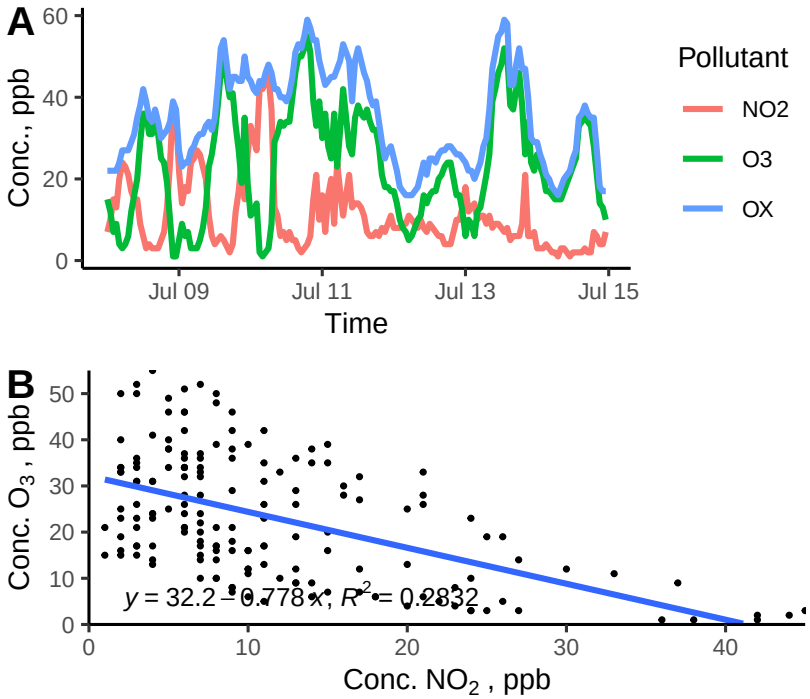

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

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

Pollutant	mean	sd	median	min	max
NO2	11.3	9.2	8	1	45
O3	23.4	13.5	22	1	55
OX	34.7	11.6	34	16	59
NO2_8hr	11.4	7.7	9	2	38
O3_8hr	23.7	11.8	22	5	49
OX_8hr	35.2	10.5	34	17	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_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.

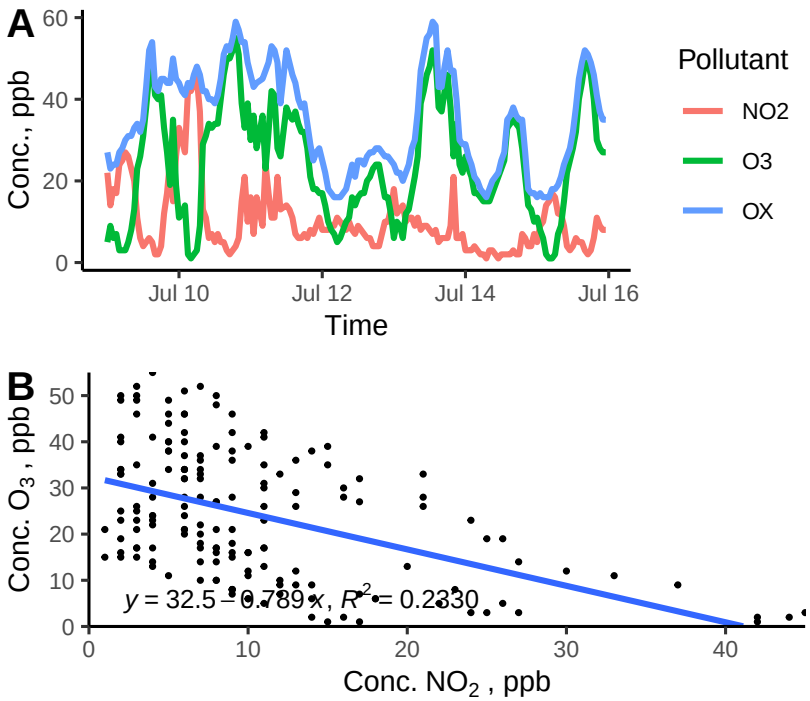

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	10.4	8.6	8	1	45
O3	24.3	14.0	23	1	55
OX	34.7	12.4	35	16	59
NO2_8hr	10.2	7.3	9	2	38
O3_8hr	24.5	12.3	24	4	49
OX_8hr	34.8	11.5	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_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.

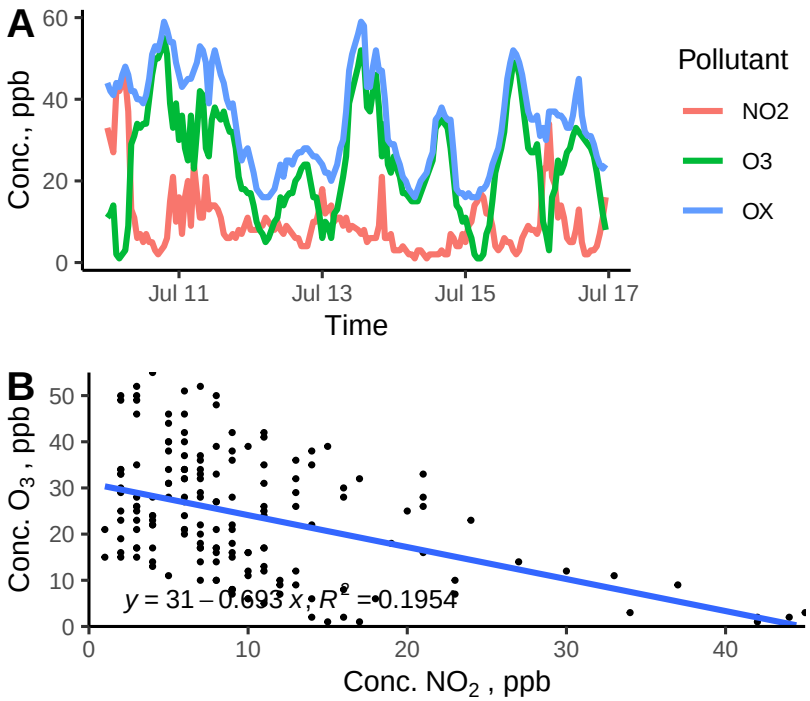

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	9.9	8.3	8	1	45
O3	24.2	13.0	24	1	55
OX	34.1	12.0	34	16	59
NO2_8hr	9.4	6.3	8	2	38
O3_8hr	24.6	11.3	24	4	49
OX_8hr	34.1	11.1	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.

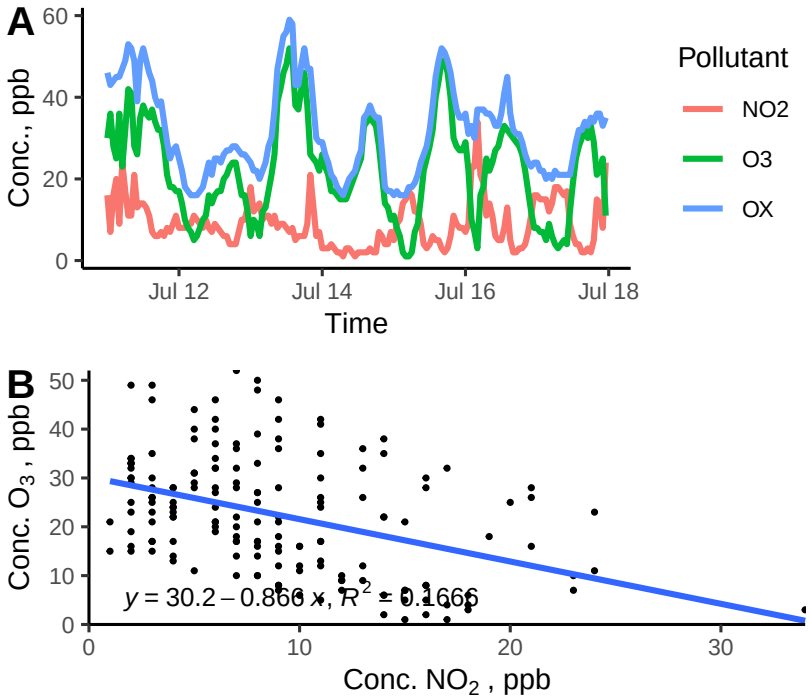

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	9.0	5.7	8	1	34
O3	22.5	12.0	22	1	52
OX	31.4	11.0	29	16	59
NO2_8hr	8.8	4.3	8	2	21
O3_8hr	22.3	10.6	21	4	45
OX_8hr	31.1	10.0	29	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_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.

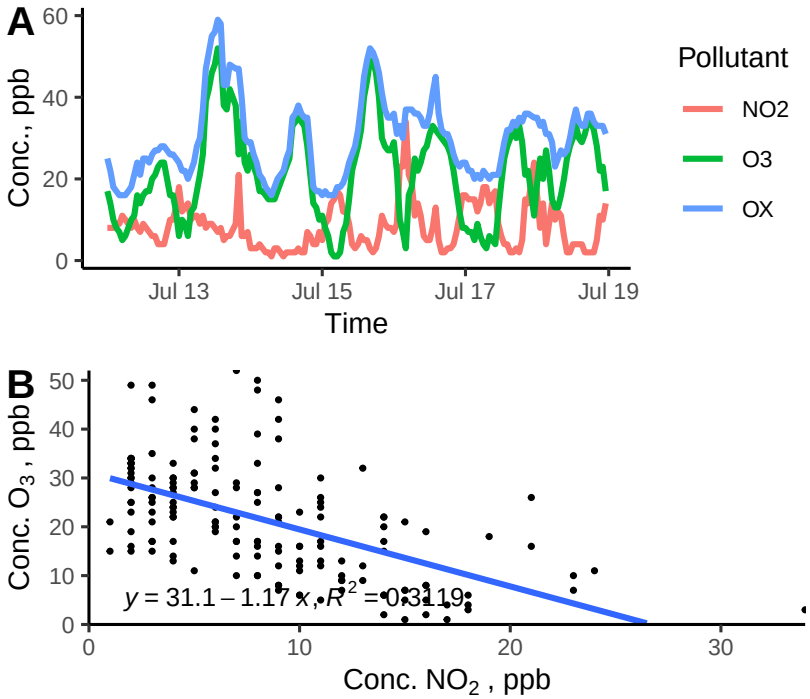

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.3	5.5	8	1	34
O3	21.4	11.5	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	29.9	8.6	29	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_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.

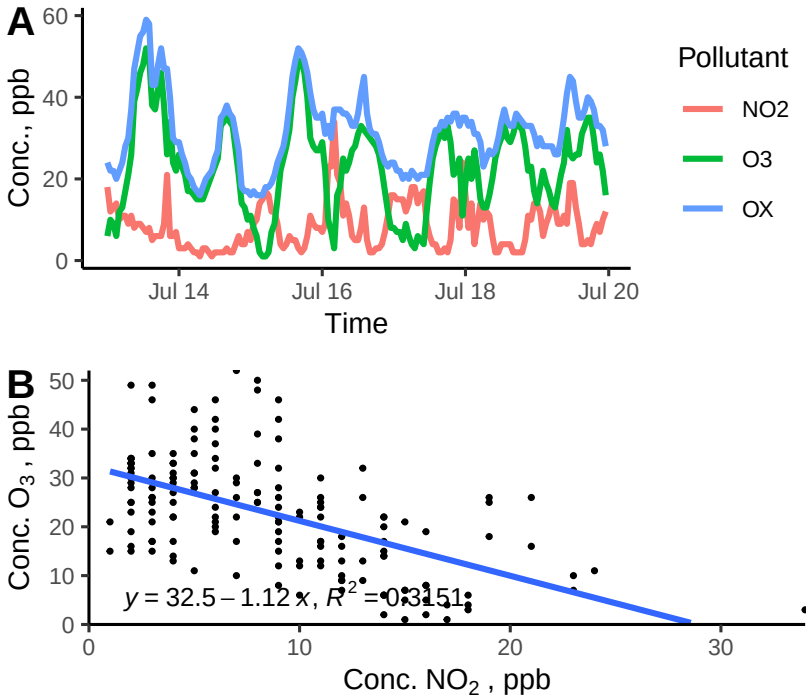

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.6	5.7	8	1	34
O3	22.8	11.4	23	1	52
OX	31.4	9.5	32	16	59
NO2_8hr	8.5	4.2	8	2	21
O3_8hr	23.0	9.7	23	4	45
OX_8hr	31.5	8.4	32	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.

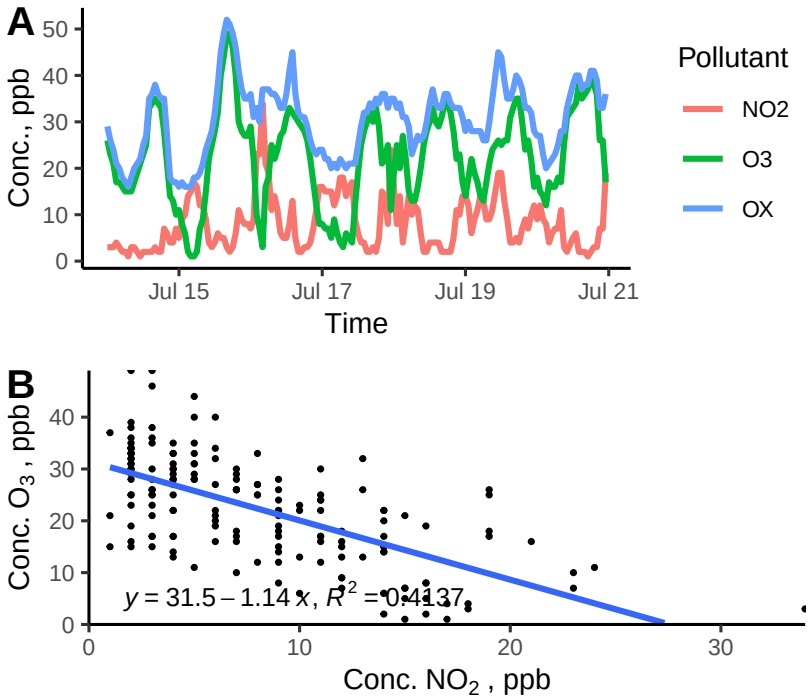

Figure 1: (A) Time series of pollutant concentration. There shouldn't be a linear regression on this plot, if students have done so please note it. (B) Correlation plot of O_3 vs. NO_2; the equation of the line is displayed in the lower left corner.

Pollutant	mean	sd	median	min	max
NO2	8.1	5.8	7	1	34
O3	22.3	10.3	22	1	49
OX	30.3	7.9	32	16	52
NO2_8hr	8.1	4.4	8	2	21
O3_8hr	22.2	8.8	22	4	43
OX_8hr	30.3	6.9	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.