

Dummy homework

Name, student number

Here is a simple R Markdown template for returning homework exercises. Notice that use of R Markdown is not compulsory.

- Template includes some basic examples about code blocks, equations, figures and cross-referencing.
- Rmd file can be compiled with the key combination Ctrl+Shift+K or by pressing the **Knit** button on R Studio interface.
- Code chunk can be inserted with the key combination Ctrl+Alt+I or by pressing the **Insert** button on R Studio interface.
- Equations work very similarly to LaTeX. However, cross-referencing differs significantly from LaTeX syntax.
- Notice that cross-referencing is not provided in base R Markdown. [Bookdown](#) package provides output formats which enable cross-referencing.
- More information and examples about R Markdown can be found [here](#) and [here](#).

Dummy exercise

Code blocks

Below is an example code block.

```
emis <- read.table('emissions.txt', header = TRUE, sep = '\t', row.names = 1)
fit <- lm(NOx ~ ., data = emis)
head(emis)
```

```
##   NOx Humidity  Temp Pressure
## 1 0.72   96.50 78.10   29.08
## 2 0.70  108.72 67.93   29.98
## 3 0.95   61.37 88.27   29.34
## 4 0.85   91.26 73.63   29.03
## 5 0.79   96.83 71.02   29.05
## 6 0.71   95.94 76.11   29.04
```

Equations and inline R code

Value of the *coefficient of determination* is approximately $R^2 \approx 0.84$. Previous value was actually computed with inline R command (see Rmd file)! Coefficient of determination can be calculated with the formula

$$R^2 = 1 - \frac{SSE}{SST}.$$

Additionally, one can have numbered equations and cross-reference them,

$$R^2 = 1 - \frac{SSE}{SST}. \tag{1}$$

Coefficient of determination R^2 is calculated according to equation (1).

Plotting

Notice that labeled text is quite useful for making clean figure captions (see Rmd file).

```
pairs(emis, pch = 19, col = "midnightblue", gap = 0,  
      upper.panel = NULL, cex.labels = 1)
```

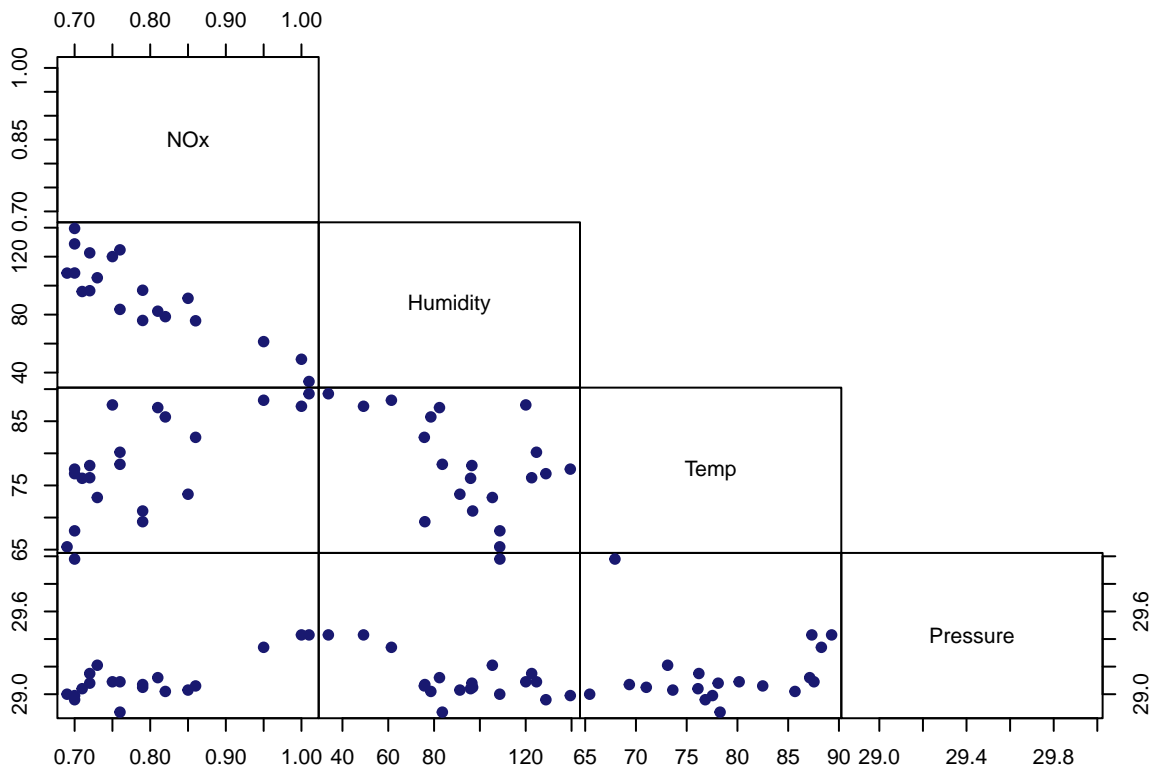


Figure 1: Scatter plot of variables.

Figure 1 suggests that there is negative correlation between variables NOx and Humidity.