Homework 1

Data science for high shcool students, Summer 2018

12 July, 2018

1. Run the code in airnow.R

This is an excercise to run the R code already provided in airnow.R. You would need to create an AirNow account from https://docs.airnowapi.org/account/request/ and then get an API key.

Set the API Key into an *environment variable* (read more here https://en.wikipedia.org/wiki/Environment_ variable) using the Sys.setenv function. See help for Sys.setenv by typing *?Sys.setenv* on the R Console in R Studio.

If you are able to run the code successfully you would be able to see the chart generated using the ggplot2 package.

2. Basic operations with data frames

See code below and try to write the code as indicated in the comment lines.

```r
# create a data frame
people = data.frame(name = c("person1", "person2", "person3"), age = c(10, 20, 30))

# print the dataframe


# load the purrr package

# use the "map2" function to print the dataframe with each entry written as
# name is person1, age is 10


# print a summary of the people dataframe, use the "summary" function
# lookup help of the "summary" function to see usage example
```

3 Doing more with the AirNow API example

Use the code in airnow.R example to get data for the last 1 week and plot it. To get the data for previous days you would need to set the "date=" in the URL to a previous date. This would require a "loop" construct but we do not want to use a for loop, we want to do this with a map. There are multiple ways to do this with the map family of functions but a rather simple way is to use map and make it iterate it over an vector of indices from say 1 to 7.

You would also need to use the "head" function to get the data for the day you are interested in.