Week 1 assignment

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## Reading

1. Chapter 2 of Hands on Programming with R ([link](https://rstudio-education.github.io/hopr/basics.html))
2. Parts of Chapters 1 and 2 of the R Cookbook ([link](https://rc2e.com/index.html#the-recipes)) that you find useful. I’d strongly suggest bookmarking section 2.14 ([link](https://rc2e.com/somebasics#recipe-id025))

## Problem 1

Complete the RStudio Primer on Programming Fundamentals available [here](https://rstudio.cloud/learn/primers/1.2)

This primer covers most of what we’ve covered this week, and a little bit more

## Problem 2

Find the problems (typos) in the following code snippets and correct them so that they run without errors. This exercise will make you aware that the primary reason for R errors is typographical errors. R is case-sensitive and requires the exact specification for each object name.

my\_variable <- 1:5  
my\_var1able

data(airquality)  
mean(airquality$wind)

table(iris$Sepal\_Length)

## Problem 3

Write a function that converts miles per gallon to kilometers per liter. The conversion is 1 mpg = 1.6/3.8 kmpl. The basic format for a function is

name <- function(variables) {  
   
}

Here, you would have one input variable *x*, and it will output one input variable *y*. You need to name your function (please don’t keep it as *name*).

You can then apply this function to the fuel efficiency data in the **mtcars** dataset, which is mtcars$mpg.

## Problem 4

Write a for-loop that generates the natural logarithms (log) of the first 20 integers (1:20).

for(\_\_\_ in 1:20){  
 print(\_\_\_(\_\_\_\_))  
}

## Problem 5

The Theoph data set contains data from an experiment on the pharmacokinetics of theophylline. I would like, for each of the 12 subjects in the data, to compute the maximum theophylline concentration seen during the experiments.

data(Theoph)  
for(u in unique(Theoph$\_\_\_\_\_)){  
 print(max(Theoph$conc[Theoph$Subject == \_\_\_\_]))  
}