Problem Set 0 Solution

Andreas Bender, Philipp Kopper, Philip Studener

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Exercises

1. Create an R script and add a line of code to the R script to print the sum of 3 and 8. Execute/Run this line of code.

```
3 + 8
```

```
## [1] 11
```

2. R can be used as a simple calculator. In order to farmiliarize yourself with basic mathematic operations in R, calculate the multiplication, division, modulo, and exponentiation of the numbers 11 and 2. Add comments using `#` after every line to comment what the code does.

```
11 * 2 # multiplication
```

```
## [1] 22
```

```
11 / 2 # division
```

```
## [1] 5.5
```

```
11 %% 2 # modulo
```

```
## [1] 1
```

```
11 ^ 2 # exponentiation
```

```
## [1] 121
```

3. Assign the value 18 to variable/object `x`. Print out the value of the variable `x`.

```
x <- 18
x
```

```
## [1] 18
```

4. Add 5 to `x`.

```
x + 5
```

```
## [1] 23
```

5. Create a new variable by assigning the addition `x + 5` to `y`. Print out `y`.

```
y <- x + 5
y
```

```
## [1] 23
```

6. Create a variable `stockvalue` with the value 50. Create a variable `growth_multiplier` (that represents the annual growth) and set its value to 1.2. Calculate the stockvalue after 3 years by using `stockvalue` and `growth_multiplier` and save it as variable `result`. Print out the value of `result`.

```
stockvalue <- 50
growth_multiplier <- 1.2
result <- stockvalue * growth_multiplier ^ 3
result
```

```
## [1] 86.4
```

7. To create a vector (of length > 1) in R, you place the vector elements separated by a comma between the parentheses of the combine function `c()`. Create a vector containing numbers 2, 3, 4 and 6 and assign it to `my_vector`.

```
my_vector <- c(2, 3, 4, 6)
```

8. Add 3 to the variable `my_vector` and figure out how R calculates this.

```
my_vector + 3
```

```
## [1] 5 6 7 9
```

9. Extract the third element of `my_vector` by using square brackets behind the vector.

```
my_vector[3]
```

```
## [1] 4
```

10. What do you need to do so that `my_vector` now stores the values `my_vector + 3` instead of the values previously assigned to it (i.e., 2, 3, 4, 6).

```
my_vector <- my_vector + 3
```

Session Info

```
sessionInfo()
```

```
## R version 4.2.2 (2022-10-31)
## Platform: aarch64-apple-darwin20 (64-bit)
## Running under: macOS Ventura 13.0
##
## Matrix products: default
## BLAS:   /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## loaded via a namespace (and not attached):
##  [1] compiler_4.2.2  magrittr_2.0.3  fastmap_1.1.0   cli_3.4.1
##  [5] tools_4.2.2     htmltools_0.5.5 rstudioapi_0.14 yaml_2.3.6
##  [9] stringi_1.7.8   rmarkdown_2.25  knitr_1.40      stringr_1.4.1
## [13] xfun_0.40       digest_0.6.30   rlang_1.0.6     evaluate_0.17
```