

Introduction to R and RStudio part2 - homework2

Anna Lorenc *anna.lorenc@kcl.ac.uk*

Challenge 1

1. Read in the file `APCmin_Natalie_data` into an object `mouse_big`
2. Print out the whole data frame
3. Print out just the beginning with function `head(DATA_FRAME_NAME)`
4. How many rows has `mouse_big`? Does the number of rows include column names?
5. Extract a vector with mouse names. How many entries it has? To check vector length, use `length()`.
6. How many mice are in the table? To see only unique mouse names, use `unique(VECTOR)`.
7. How many times was the mouse “AHD5.1a” weighted? Hint: use in your code `mouse_big$Mouse=="AHD5.1a"`
8. Add an age column, as in previous homework.
9. Order mice by names. Hint: use function `order()`.
10. Extract all weightings of mouse AHD5.1h and keep in an object `mouse_AHD5.1h`. Take only columns with weight, mouse name, birth date and age.
11. Change column names in `mouse_AHD5.1h`: it should be “sex” instead of “gender”. Write this data frame now out as a csv file.
12. Compute average of all female weights in `mouse_big` for mice 14 weeks old.
13. Compare male and female weights for mice 14 weeks old with t-test.
14. Plot a histogram of weight for all mice aged 14 weeks. Annotate and embellish the plot (fill it with a colour, add a meaningful title and label axes).
15. By default, when you plot, the plot is rendered in the plot pane. If you start another plotting device before plotting and close it afterwards, you might plot to a jpg, pdf, eps or other file.

```
pdf("NAME_FOR_MY_PDF.pdf")
hist(mousebig$weight)
#you might add other plotting commands
dev.off()
```

Prepare a pdf file with this histogram. and add age column, as in Challenge 1.

15. Plot a boxplot of all male vs.all female weights to a pdf file. For a boxplot, use the plotting function `boxplot()`:

```
boxplot( VARIABLE ~ GROUPING), for example:
boxplot(bigmouse$Weight ~ bigmouse$Gender)
```

Challenge 2

1. Load in the attached “ttest_results.Rdata” file. It contains one object. What is its name and what kind of object it is?
2. Check names of the elements of this object
3. Extract results of a comparison for mice 20 weeks long. What is the mean of male and female weight at this age?