

# Biometry. Lecture 5

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## 1 R and data

- Taking data into R
- Saving data from R



```
> setwd("<working folder>")  
or  
"Change dir"  
in menu!
```

(`getwd()` is for checking the folder, `dir()` checks the folder content)



# R can create folders!

```
> ?dir.create
```



# R and data

## Taking data into R



# R data cycle

- Enter data to spreadsheet (e.g., MS Excel)
- Save it as a text file with separators (preferably semicolons or tabs)
- Load it into R
- Work with it
- If you need to change data, go to spreadsheet and repeat first steps



# R and Excel connection

There are two options: through text file or through clipboard. In Excel, make two columns with headings, copy them to clipboard, then:

```
> read.table("clipboard", h=T)
```



# R and Excel connection: "xlsx" package

Make 1.xlsx in Excel first, close Excel

```
> install.packages("xlsx") # this is needed only once  
# choose the right mirror, wait for installation  
> library(xlsx)  
# suppose you have file "1.xlsx" in the "data" subfolder:  
> read.xlsx("1.xlsx", sheetIndex=1)
```





# R binary format

It is useful if you need to save and load big data objects faster

```
> x <- "apple"
> x
> save(x, file="data/x.rd")
> rm(x) # delete
> ls() # list all objects
> exists("x") # check if object exists
> load("data/x.rd")
> x
```

We saved R object, deleted it and loaded again from binary file. If you want to remove all objects, run `rm(list=ls())` (be careful!).



# R and data

## Saving data from R



# Writing tables

```
> trees  
> ?trees # tells you what is it  
> write.table(trees, file="trees2.txt")  
> file.show("trees2.txt")
```



# Writing the report

```
> sink("1.txt", split=TRUE)
> 2 + 2
> sink()
```

(split=T writes to file and to console)

Always close `sink()`!



# Making a script

```
> file.edit("hello.r")  
# In the editor, enter print("Hello, world!"), close and save  
> source("hello.r", echo=T) # echo=T will show command output
```



# Saving history

```
> history()  
> savehistory("20150202.r")
```

You should always save your R session. You may then convert it to the script to make your work automated.



# Saving workspace

```
> save.image("20150202.rd")  
> load("20150202.rd")
```

If you save the image, you may the restore all object created during the R session. The image will be saved in R binary format.



# Save your commands!

- On Windows and Unix/Linux: `savehistory()` command
- Different on Mac: it is best to save all contents of R console via `File -> Save as...`
- The best name for the file is probably `"20150202.r"`





# For Further Reading



A. Shipunov.

*Biometry* [Electronic resource].

2012—onwards.

Mode of access:

[http://ashipunov.info/shipunov/school/biol\\_240](http://ashipunov.info/shipunov/school/biol_240)



A. Shipunov, and others.

*Visual statistics. Use R!*

Ongoing translation from Russian.

