

Biometry. Lecture 4

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- 1 Obtaining data
 - Entering data into R



Bootstrap discussion

- Why mean/sd of "spur" and mean of means/sds of 100 spur samples are different?
- Which mean is better?



Obtaining data

Entering data into R



How to edit an object (vector variant)

```
> a <- c(2,3,5,600)
> e <- edit(a)
> fix(a)
```

Commands `edit()` and `fix()` both call external editor. For vectors, they will call the text editor.



How to edit an object (table variant)

```
> b <- 1:5  
> data.entry(b)  
> de(b)
```

These commands both have visual interface, `de()` will convert vector into **data frame** (table-like object).



Loading external data: working with folders

Before the start, please create the working folder `biol_240` and `data` folder inside it.

```
> getwd() # shows the name of current folder
> setwd("biol_240/") # use slashes (/) instead of backslashes!
# On Mac OS X, change "c:" to something appropriate
> dir() # shows the content of working folder
```



Put the data file into the folder

```
> download.file("http://ashipunov.info/data/spur.txt",  
+ "data/spur.txt") # downloads file instead of scan it  
> dir("data") # should show your file name (mydata.txt)
```

Please do not type starting "+", it is used to show the line break



Reading data from a text file

```
> download.file("http://ashipunov.info/data/mydata.txt",
+ "data/mydata.txt")
> dir("data")
> file.show("data/mydata.txt") # this is a table!
> read.table("data/mydata.txt", sep=";", head=TRUE)
> f <- read.table("data/mydata.txt", sep=";", head=T)
> f
```

head=TRUE, head=T **and** h=T are the same



Reading data from text file with row names

```
> download.file("http://ashipunov.info/data/mydata2.txt",  
+ "data/mydata2.txt")  
> file.show("data/mydata2.txt")  
> read.table("data/mydata2.txt", sep=";", head=TRUE)
```

If the first row contains one less element, the first column will be treated as row names.



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

```
> 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)
```



Summary: most important commands

- `read.table()` to read text file into R



For Further Reading



A. Shipunov.

Biometry [Electronic resource].

2012—onwards.

Mode of access:

http://ashipunov.info/shipunov/school/biol_240



A. Shipunov, and others.

Visual statistics. Use R!

DMK Press, 2012. Translated from Russian.

