

### Work Directory (WD), History, Source, Comm

**WD** - is the computer folder with the file you read in or save out.

`getwd()` See current WD

`setwd()` Set, change WD

`dir()` Lists content of the dir

#### History

`savehistory(file="Name.Rhistory")`

`loadhistory(file="Name.Rhistory")`

`sink("name.txt") sink()`

open-close connection

#### Source

`source("CommandScript.R")`

Commands stored in scripts in WD

Created objects saved and loaded in the WD:

`save(object, file="path")`

`load(file="path")`

#### Commands

Erase all objects in the workspace and list rest:

`rm()`

`ls()`

(\*\*Basics)

### Data types

Atomic (fundamental) Data Types?

complex:

raw:

numeric:

character:

logical:

Hierarchy?

Character > Double > Integer > Logical

(\*\*Basics)

### Loading Data

`read.table` txt data  
(file="name.txt") frame

`read.csv2` csv data  
(file="name.csv") frame

`read.spss` spss data  
(file="name.spss") frame

`data` builtin  
(name, package="pkg") dataset

`edit()` opens a  
spread-  
sheet

`read.file` library psy  
(file="name.spss") ch import  
functions.

(\*\*Basics)

### Parsing

A **parser** converts the textual representation of R code into an internal form which may then be passed to the R evaluator.

`(p1<-parse(text="3*(2+4)"))`

`expression(3*(2+4))`

`eval(p1)`

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Abstract Syntax Trees (AST) that are parsed according to the language grammar

(\*\*Advanced)

### Parsing Image

```
> lobstr::ast(3*(2+4))
\-\ (
  \-\ '*'
  \-\ 3
  \-\ (
    \-\ '('
    \-\ 2
    \-\ '+'
    \-\ 4
```



(\*\*Advanced)

### Vectors

Vectors two types:

**Atomic:** all elements same type

**List:** a generalized vector, elements can have different types

Ex: `vec <- c(1, 5, 4, 9, 0)`

Name the elements:

`(vec <- c(Frodo=1, Bilbo=5, Gandalf=length(x)))`

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Access the 1st element; remove the 3rd element

`vec[1]; vec[-3]`

Access the last element using the length

`vec[length(vec)]`

Access more elements

`vec[c(1,3)]`

Remove more elements

`vec[-c(1,3)]`

Access only elements that are greater than 3

`vec[vec>3]`

Replace one or more elements

`vec[c(1,3)] <- -c(1,3)`

Access only elements that are not NA

`vec[!is.na(vec)]`

Repeating

`rep(2,5) = c(2,2, 2,2,2)`

Sequencing

`seq(2,5,1) 2,3,4,5`

Matrices are long Vectors

`matrix(1:4,2) + c(1,2)`

`which()`, `any()`, `all()`

R performs operations on vectors element by element

(\*\*Basics)