Console (enter to move in the next line)

(>) → prompt

comment

Types of Variables → integer (2, 4, 7, —)

→ numeric (2.03, 3.50 ...)

→ char ("name", 'one', —)

→ logical (TRUE / FALSE)

→ Complex (i, 5+6i, ...)

Command / operation

+, -, /, *, ^, %% → standard math characters

pi

exp(x)

sqrt(x)

abs(x)

factorial(x)

sin(x), tan(x), ...

acos(x) ...

↓

arc cos

log2(x) → base 2

log10(x) → base 10

log(x, base = n) → base = n

ex log(x, base = exp(1))

or log(x, exp(1))

Data operators

1. Assignment operator (ie =, <- or ->

   x = 45 , x <- 45 or 45 -> x

2. Arithmetic (+, -, /, *, %%, ^)
3. Relational operator (a == b, a != b, a > b, a < b, a >= b, a <= b)
4. logical operator (a & b, a | b, !a (Not))

   & → AND

   | → OR

How R works?

R is an interpreted language, not a compiled one.

Packages

- In-build (already installed)
  - search()
  - searchpaths()
- which we need to install
  - ex: ggplot2
  - library(package)
  - installed.package(...)

Help commands

1. help(mean) or ?mean
2. help.search('mean') or ??mean
3. help.start()
4. apropos('mean')

To create a vector

$\mathbb{R}^5 \rightarrow (x_1, x_2, x_3, x_4, x_5)$

① c( ) or scan( )

↓

combine or concatenation

Syntax c(item1, item2, ……) is used to create a vector

ex (a) c(1, 5, 7, 9, ……)

(b) c(7.5, 2.5 ……)

(c) c(T, F, T) or c(TRUE, FALSE)

(d) c('a1', 'a2', 'a3', ……)

TRUE, T ✓

True

→ class( ) → to see the class the object.

scan()

marks = scan() ↵ # by default elements are of numeric type

1: 23 56 78 98 80 ↵

6: 81 ↵

7: ↵

Read 6 items

marks

chartype data

name = scan(what = 'char') ↵

1: mon tues ↵

3: wed ↵

4: ↵

Read 3 items

2 3,

or ; or : or any symbol

marks = scan(sep = ',') ↵

1: 23.5, 29.0, ↵

3: 78.5, 58.5 ↵

5: ↵

Read 4 items