



Introduction to programming in R (1)

R Foundations for Life Scientists

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NBIS, SciLifeLab

Computer program

- flow of data
- from one function to another
- each function does something to the data

HOW?

A **programming language** is a formal computer language or constructed language designed to communicate instructions to a machine, particularly a computer. Programming languages can be used to create programs to control the behavior of a machine or to express algorithms.

source: [Wikipedia](#)

Three things to think about

- what *types* of data can I process
- how do I *write* what I want
- when does it *mean* anything

Three components of a language

- what *types* of data can I process — *type system*

- int — 1 2 5 9
- double — 1.23 -5.74
- char — a b test 7 9

- how do I *write* what I want — *syntax* defined by a language *grammar*

2 * 1 + 1 vs. (+ (* 2 1) 1)

- when does it *mean* anything — *semantics*

- *Colorful yellow train sleeps on a crazy wave.* — has no generally accepted meaning
- *There is \$500 on his empty bank account.* — internal contradiction



Thank you. Questions?

R version 4.0.3 (2020-10-10)

Platform: x86_64-pc-linux-gnu (64-bit)

OS: Ubuntu 18.04.5 LTS

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