

Introduction to programming in R (1)

R Foundations for Life Scientists

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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



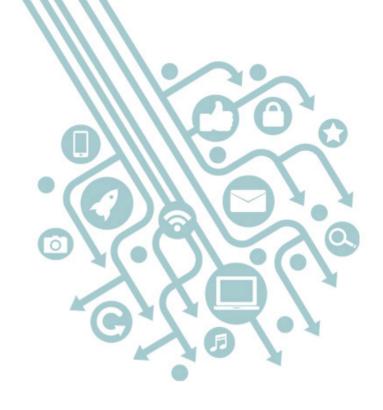
• what *types* of data can I process — *type system*

```
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*
 - o Colorful yellow train sleeps on a crazy wave. has no generally accepted meaning
 - There is \$500 on his empty bank acount. 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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