



Programming languages

- Compile / interpret
- Memory management
- Choose a lang

Abstraction

Algorithms

^A Compile

^B Interpret

C

✓

Java

1/2

1/2

Python

✓

R

✓

compiler: Turns ^{Prog} language into machine instructions

interpreter: read prog language and do what it says

run: machine instructions (Program, app, executable)

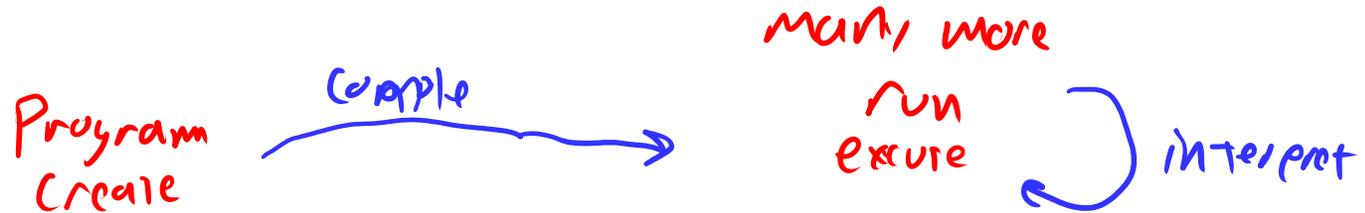
Which runs most often

A. Compiler

B. interpreter

Questions:

does it depend on language



→ Memory Management ←

in memory is

- data
- code / prog / instructions

Unmanaged: C — free, dangerous

Proof-based: Rust } safe, restrictive

Fully managed: Python }

Vulnerability

- buffer overflow

input

↓

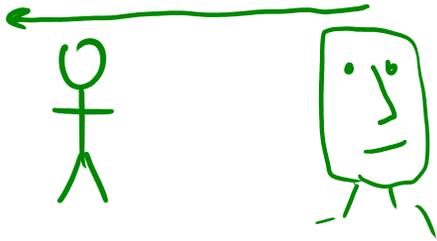


code



Abstraction

Detail removal



functions



- abstraction barrier -

High^{level} - ignores details

Low^{level} - looks at details

Generalization



Ada
Levelaxe

Person

living
being

Parameters

• flexibility



• code complex



\sqrt{x}

$\sqrt[n]{x}$

x^y