

Compilers

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Why take compilers?

You will code better.

It's challenging.

A Python compiler!

How!?

You get secret weapons.





Functional programming



Racket



Parsing with derivatives



Turing-complete macros



Structural pattern-matching



Continuation-passing style



$2x$

$2x$

$2x$

$2x$

$2x$

$2x$

2x

64x

You'll do it right.

(PHR)

You'll do it right.

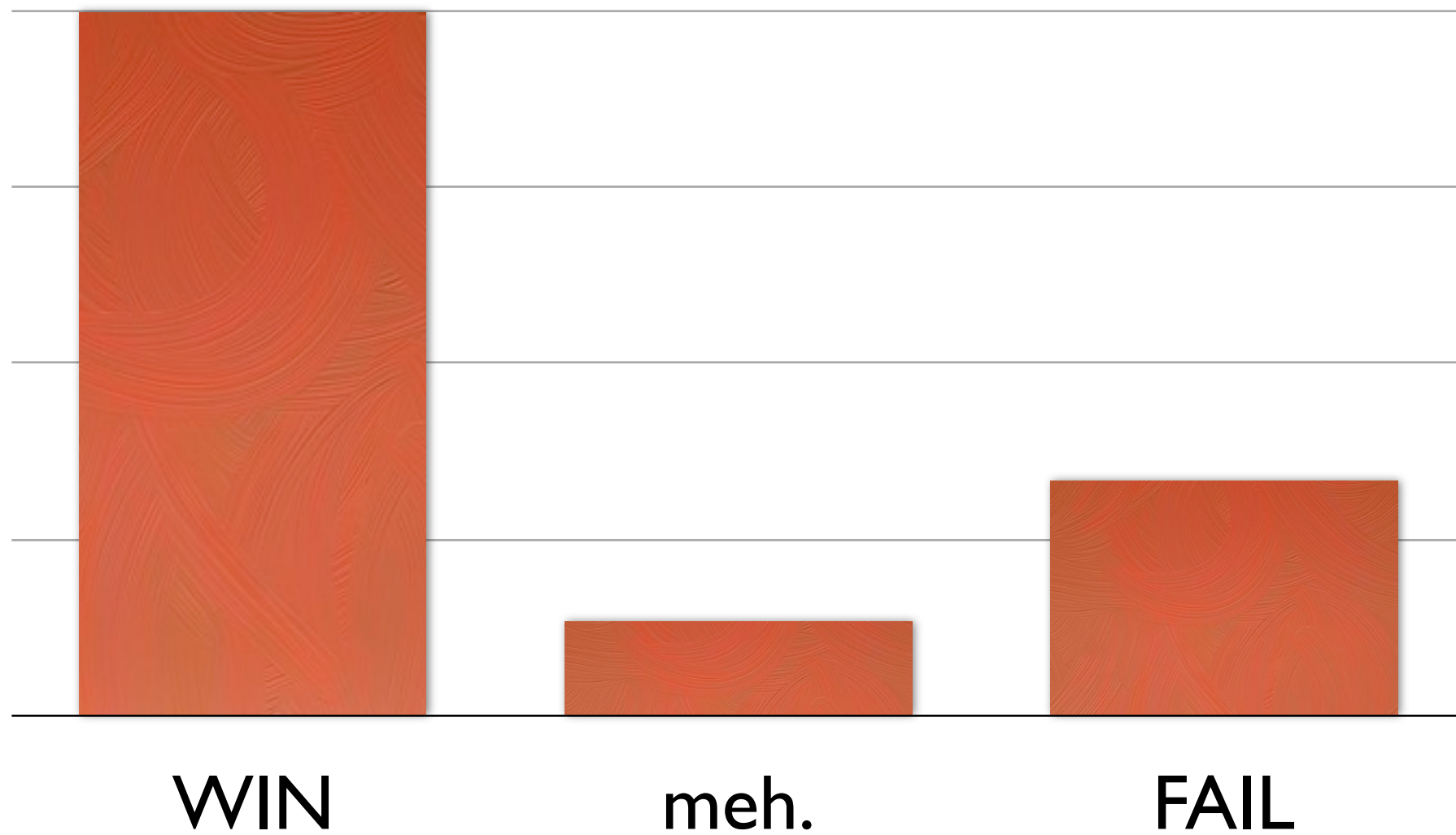
Menu

- Lexical analysis
- Syntactic analysis
- Semantic analysis
- Transformation++
- Static analysis
- Optimization
- Code generation
- Register allocation
- Garbage collection
- Virtual machines

No textbook

blog.might.net

Grades



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- One student copied prior student's assignment
- One showed up 30 minutes late to each class
- One could not write the truth table for **not**

Grading

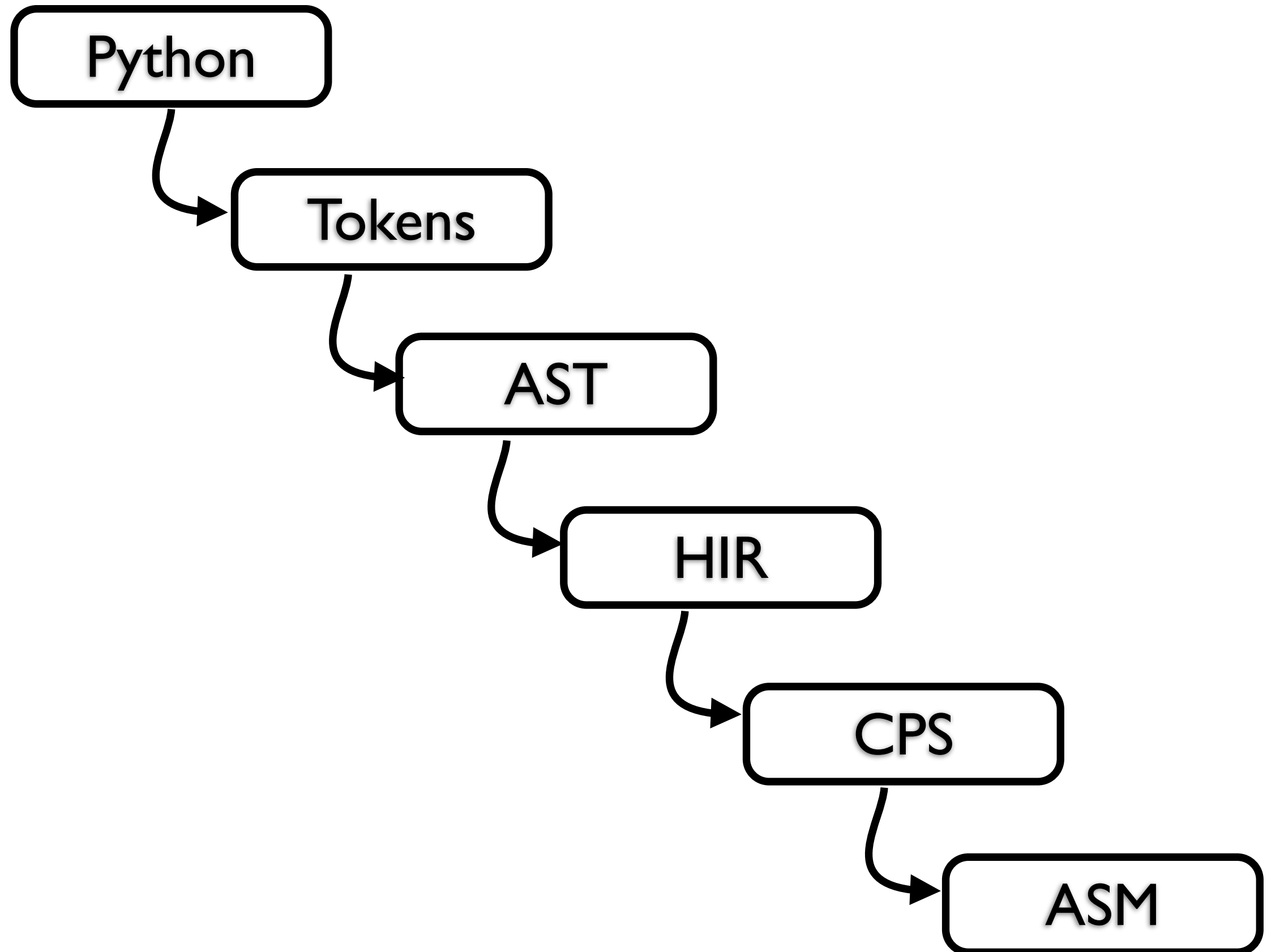
- About 5-6 projects
- Two midterm exams
- Optional final exam

$\max(\text{ProjectAverage}, \text{Exams})$

WARNING

The final exam is evil.

5-6 projects?



What language?

Not recommended

- Java, C#
- Python
- C, C++

Recommended

- Racket
- OCaml / SML
- Scala
- Haskell

Supported

- Racket

Prerequisites

3100 or 4400

Self-test

- Write recursive factorial
- Write tail-recursive factorial
- Write binary-search-tree insert
- Write binary-search-tree delete

Collaboration

You can work in pairs!

Cheating

First assignment?

Learn Python 3.3

Learn Racket

A word on travel



Questions?