CS 6510
Programming Languages

Spring 2016

Instructor: Matthew Flatt
Course Details

http://www.eng.utah.edu/~cs6510/
Lectures are Online

After today, all slide presentations are online
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• Watch the videos before class
Lectures are Online

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- Watch the videos before class

- Class is for more examples and homework solutions
  - a.k.a. “recitation”
  - guideline: no new material introduced in class
Programming Language Concepts

This course teaches concepts in two ways:
Programming Language Concepts

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By implementing **interpreters**

- new concept $\Rightarrow$ new interpreter
Programming Language Concepts

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By implementing **interpreters**

- new concept $\Rightarrow$ new interpreter

By using **Racket** and variants

- we don’t assume that you already know Racket
Interpreters

An **interpreter** takes a program and produces a result

- DrRacket
- x86 processor
- desktop calculator
- **bash**
- Algebra student
Interpreters

An interpreter takes a program and produces a result:

- DrRacket
- x86 processor
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- Algebra student

A compiler takes a program and produces another program.

In the terminology of programming languages, someone who translates Chinese to English is a compiler, not an interpreter.
Racket and plai-typed

Lisp ➔ Scheme ➔ Racket
Racket and plai-typed

**Lisp ➔ Scheme ➔ Racket**

**Racket** is

- a programming language
- a family of programming languages
- a language for creating programming languages
Racket and *plai-typed*

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... including *plai-typed*
Racket and plai-typed

Lisp ➔ Scheme ➔ Racket

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• a language for creating programming languages

... including plai-typed

Racket ➔ plai-typed ↔ ML

PLAI = Programming Languages: Application and Interpretation, the textbook
plai-typed

See quick-ref.rkt
Homework 0

• Create handin account

• Racket/plai-typed warm-up exercises

Due Friday, January 15