

CSCI 400 Course Overview

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Introduction

Who am I?

- David Grisham
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- Master's student under DJ Yang
 - Distributed systems, game theory
- Member of Protocol Labs
 - IPFS, Filecoin

Why am I teaching PL?

Good question...

(also, `alias PL='Programming Languages'`)

Why am I teaching PL?

- Took PL in 2014
- Previous prof. (Cyndi Rader) retired
- Experience/enjoyment

Why are you taking PL?

Is it worth an entire semester?

Motivation

- Toolbox
 - Partly choose language based on problem
- Crossover knowledge
 - Haskell \rightarrow C++
- Research
 - Type systems, memory management, ...

Motivation

When the only tool you have is a hammer, everything looks like a nail." - Abraham Maslow

What are we going to do?

Roughly...

- 1 Discuss programming language concepts
- 2 Explore languages/their paradigms
- 3 Implement (simple) languages

PL Concepts

- Syntax & features decisions
- Code reuse, polymorphism
- Error handling
- Type system
- Meta-programming

PL Concepts

What kind of criteria do you use to evaluate/choose a language?

Categories of programming languages

Exploring Languages

	Ruby	Haskell
Paradigm	Multi, Object-oriented	Functional
Typing	Dynamic	Static
Meta-programming?	Yes	With an extension

Exploring Languages

Ruby

- Learn Ruby
 - While keeping in mind higher-level PL concepts
- Discussion on design/etc.
- Exam

Exploring Languages

Haskell

- Similar to Ruby
 - But no exam
- Implement simple (subsets of) programming languages
 - Haskell experience
 - Better understanding of PL implementation

Conclusion

Credit

Significant credit to Cyndi Rader for slide content