Haskell

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How to Pick an Implementation Language

- ▶ You all know a lot about Imperative/OO languages.
- ▶ Few or none of you know anything about functional languages.
- ▶ Functional languages are becoming increasingly important:
    - ▶ Roughly four times the programmer productivity
    - ▶ Parallel computation
- ▶ Our main language is HASKELL.

History of Haskell

In September of 1987 a meeting was held at the conference on Functional Programming Languages and Computer Architecture in Portland, Oregon …It was decided that a committee should be formed to design such a language, providing faster communication of new ideas, a stable foundation for real applications development, and a vehicle through which others would be encouraged to use functional languages.

— Preface of the first Haskell Report, April 1 1990, cited by [Hud+07]

Features of HASKELL

- It's an advanced higher order functional language.
- Has a very modern, concise syntax
- Has automatic type inference with parametric polymorphism
- Used a lot in research, and extremely influential in the development of other languages
- Extremely well suited for writing languages

Demo of HASKELL

You should have a Project Euler activity handout. Solve some of the problems using your favorite programming language. When you are done, watch the video solutions to see how these could be solved in HASKELL.

Bibliography

[Hud+07]   Paul Hudak et al. "A history of Haskell." In: *Proceedings of the third ACM SIGPLAN conference on History of programming languages - HOPL III* (2007).