

Learn
Create
Parse
Design
Compile
Improve
Modify
Prettify
Hack
Interpret
Package
Specify
Analyze

Programming Languages!

(Or just make a better one of your your own.)

Fall Semester

Theory of Programming Languages (NPRGo85, 2 ECTS)

by Vít Šeřl & Tomáš Petříček

Use the power of formal logic to specify programming languages, define type systems and make languages safer.

Compiler Principles (NSWI098, 6 ECTS)

by David Bednárek & Miroslav Kratochvíl

Did you just invent a programming language? Build a lexer, parser, and compiler and use the LLVM JIT to make it run!

PRG-PRG Reading Group

seminar, alternating with FIT CTU

Read and discuss recent academic papers on programming languages and systems, theory and language runtimes.

Spring Semester

Principles of Programming Languages (NPRGo84, 5 ECTS)

by Vít Šeřl & Tomáš Petříček

Learn about the concepts behind structured, imperative, functional, and object-oriented programming paradigms.

Non-procedural Programming (NPRGo05, 5 ECTS)

Can you program without imperative code? Write mathematically clean, provably correct programs in small but powerful languages.

Compiler Design (NSWI109, 4 ECTS)

by David Bednárek

You dare to read the assembly output of your compiler? This course will reduce the amount of WTF that you'll go through.

Programming in Haskell (NPRGo68, 3 ECTS)

by Miroslav Kratochvíl

Study advanced techniques for modeling and processing of programs. Use modern programming-language research results for your practical goals!

Theses and Projects (scan the QR code for supervisor contacts)

- custom and domain-specific languages
- code golfing with functions, recursion and typeclasses
- new programming tools, paradigms and patterns
- program analyzers and type system applications
- interactive and visual programming environments



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