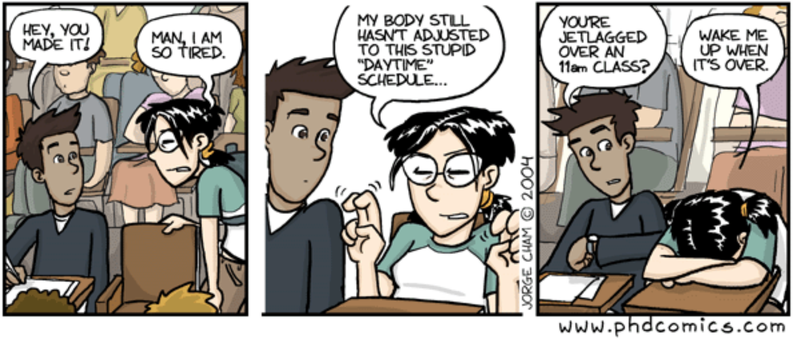
Introduction

L25: Modern Compiler Design


HEY, YOU MADE IT!
MAN, I AM SO TIRED.
MY BODY STILL HASN'T ADJUSTED TO THIS STUPID "DAYTIME" SCHEDULE...
JORGE CHAM © 2004
YOU'RE JETLAGGED OVER AN 11am CLASS?
WAKE ME UP WHEN IT'S OVER.
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Course Aims

- Understand the performance characteristics of modern processors
- Be familiar with strategies for optimising dynamic dispatch for languages like JavaScript and Objective-C
- Have experience with algorithms for automatically taking advantage of SIMD, SIMT, and MIMD parallelism

Course Structure

- 8 Lectures
- 8 Supervised practical sessions
- Hands-on work with the LLVM compiler infrastructure

Assessment

- 3 short exercises
  - Simple pass / fail
  - Due: October 28th, November 4th, November 18th
  - Assessed by oral viva in lab classes
- Longer assessed mini-project report
  - Up to 4,000 words
  - Approved proposal Due: November 4th
  - Writeup due: January 12th, 16:00

LLVM

- Began as Chris Lattner's Masters' project in UIUC in 2002, supervised by Vikram Adve
- Now used in many compilers
  - ARM / AMD / Intel / nVidia GPU shader compilers
  - C/C++ compilers for various platforms
  - Lots of domain-specific languages
- LLVM is written in C++11. This course will not teach you C++11!

Questions?