Principles of Programming Languages

CS 3323

About Me

- Name: Martin Kong
- Please omit using my other last name (“Moreno”) in any way (not Mr. Moreno, nor Mr. Kong-Moreno)
- Mini bio: Born in Venezuela, grew up in Peru (Lima), BS in Peru, CS PhD at Ohio State, Post-Doc at Rice Univ, Assistant Scientist at Brookhaven National Lab (Long Island, NY)
- Class hours: M W, 3pm – 4:15pm
- Office hours: DEH 230, M W, 11am – 12:30pm
- My email: mkong@ou.edu
- I’ll reply to emails from 8am to 8:30am, Monday to Friday
- My accent: I may talk a little too fast at times, if so, please ask me to slow down; if something is not clear, please mention it

Teaching Assistants

- I still haven’t met them ☺
- Still don’t have their office hours
- Still don’t have their emails
- I hope to have two of them
- I hope they know the topics of this course ☺

Dates

- First class: January 13th
- January 20th (Martin Luther King Day): holiday
- February 17th (Presidents' Day): Not Holiday (My bad)
- Midterm review: March 2nd
- Midterm: March 4th
- Spring vacation: March 14th – March 22nd
- Last class: April 29th (Final Exam Review)
- Final Exam: May 6th, 4:30pm – 6:30pm

Attendance Policy

- I will not drop students from the course
- No grade for attending

Course Grade

- Class quizzes: 30%
- Homework: 20%
- Midterm: 20%
- Final Exam: 30%

Quizzes

- In class, online
- Held at the beginning of the class
- Lasts 15 minutes
- No make-up quizzes
- If you arrive late, you only have whatever time remains
- Quizzes will start 5 minutes after start of class
- Open book
- Quizzes with lowest two grades do not count towards final grade
- Will have 8 (5+3) quizzes
- Each quiz will be worth 5 pts; each question is all or nothing, no partial grade
- Pre-midterm quizzes: January 27th, ~~February 3rd~~, February 10th, February 19th, February 26th
- Post-midterm quizzes: **March 9th ,** April 1st, April 13th, April 22nd

Homework

- Actually, a mini-compiler project
- Two pre-midterm homework
- Two post-midterm homework
- I provide skeleton code; you complete it; output determines grade
- Will have to code a bit in C
- Will have to upload code to canvas
- All homework count towards your final grade
- Will have 2-4 weeks for each homework
- Each homework worth 5 points

Homework

Homework	Given Date	Due Date
#1	Jan 22	Feb 5
#2	Feb 10	Mar 2
#3	Mar 9	Apr 1
#4	Apr 6	Apr 29

- Homework due at 11:59pm of the due date
- Deduct 1pt for each passed day after due date → after 5 days, no grade left

Heads up

- Highly recommend having access to a laptop or desktop either with Linux or with Mac OS, if you use Windows you might have more trouble
- Recommend checking that you have the following tools installed and accessible somewhere:
  - A good C compiler (GCC, Clang, ICC, etc)
  - Scheme
  - Python
  - Flex (Scanner generator) and Bison (Parser Generator)
- You will need some knowledge of C

What the Course is about

- Learning some fundamentals of programming language and compiler design
- Learning how stuff works
- Can be a bit boring at times
- Will try to make it a bit hands on, but time is limited

Textbook

- “Programming Language Pragmatics”, by Michael L. Scott, 4th edition

Alternative books:

- “Compilers: Principles, Techniques and Tools”, by Aho, Sethi and Ullman (1986) or by Aho, Lam, Sethi and Ulman (2006)
- “Engineering: A Compiler”, Cooper and Torczon

Any of the above books will do

I will try to upload the slides before the following class; likely up to the night before

Topics Overview

1. Introduction (Chapter 1) - 1 class
2. Lexical Analysis (Chapter 2) – 1 week
3. Syntactic Analysis (Chapter 2) – 1.5 weeks
4. Runtime environment (Chapter 3) – 1 week
5. Semantic Analysis (Chapter 4) – 1.5 weeks
6. Control Flow (Chapter 6) – 1.5 weeks

Pre-Midterm

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7. Type Systems (Chapter 7 and 8): 1. weeks
8. Subroutines (Chapter 9): 1 week
9. Functional Languages (Chapter 11): 1.5 weeks
10. Scripting Languages (Chapter 14): 1.5 weeks
11. Overview of Compiler Optimizations (Not covered in book): 1 week

Post-Midterm

Other

- Please be respectful
- Please avoid leaving classroom in the middle of the class: it disrupts the class
- Please avoid taking phone / video calls
- Feel free to use your laptop

Questions?