CS 520

cs.unh.edu/~cs520

username: student

password: zone

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Goals

- Show you the hardware and software platforms on which your high level programs execute
- How and where does the software meet the hardware
- Convince you that this knowledge is indeed important!
- Convince you that there is more to life than Java ☺
- Try to convince you that assembly language is *rather cool*

CS Industrial Advisory Board

- Only willing for CS to move to “Java first”, if
  - C programming was still taught
  - Students learned about “real pointers”
  - Students learned about allocating and deallocating memory “by hand”
- They also pushed the department to increase the emphasis on threaded programming

My Credentials

- Much of my background is in system programming and distributed computing
- Worked in the industry for a number of years in middle-ware
- Taught various flavors of Computer Architecture, Assembly Language Programming, Computer Organization & Design at different institutions including here at UNH
- Taught CS 520 several years ago when Prof. Hatcher was on sabbatical leave
- I think assembly language is *indeed cool*

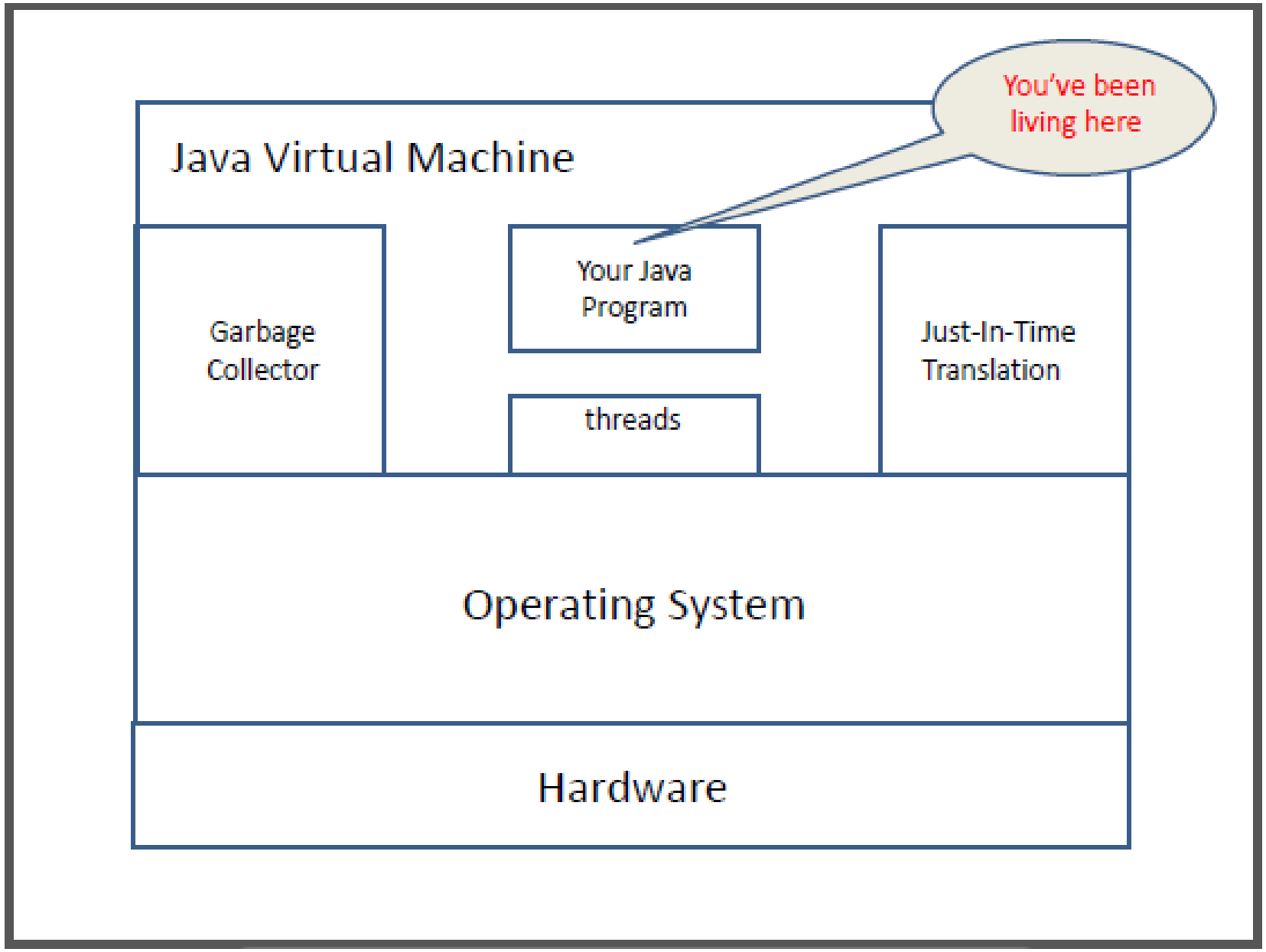
Your Credentials

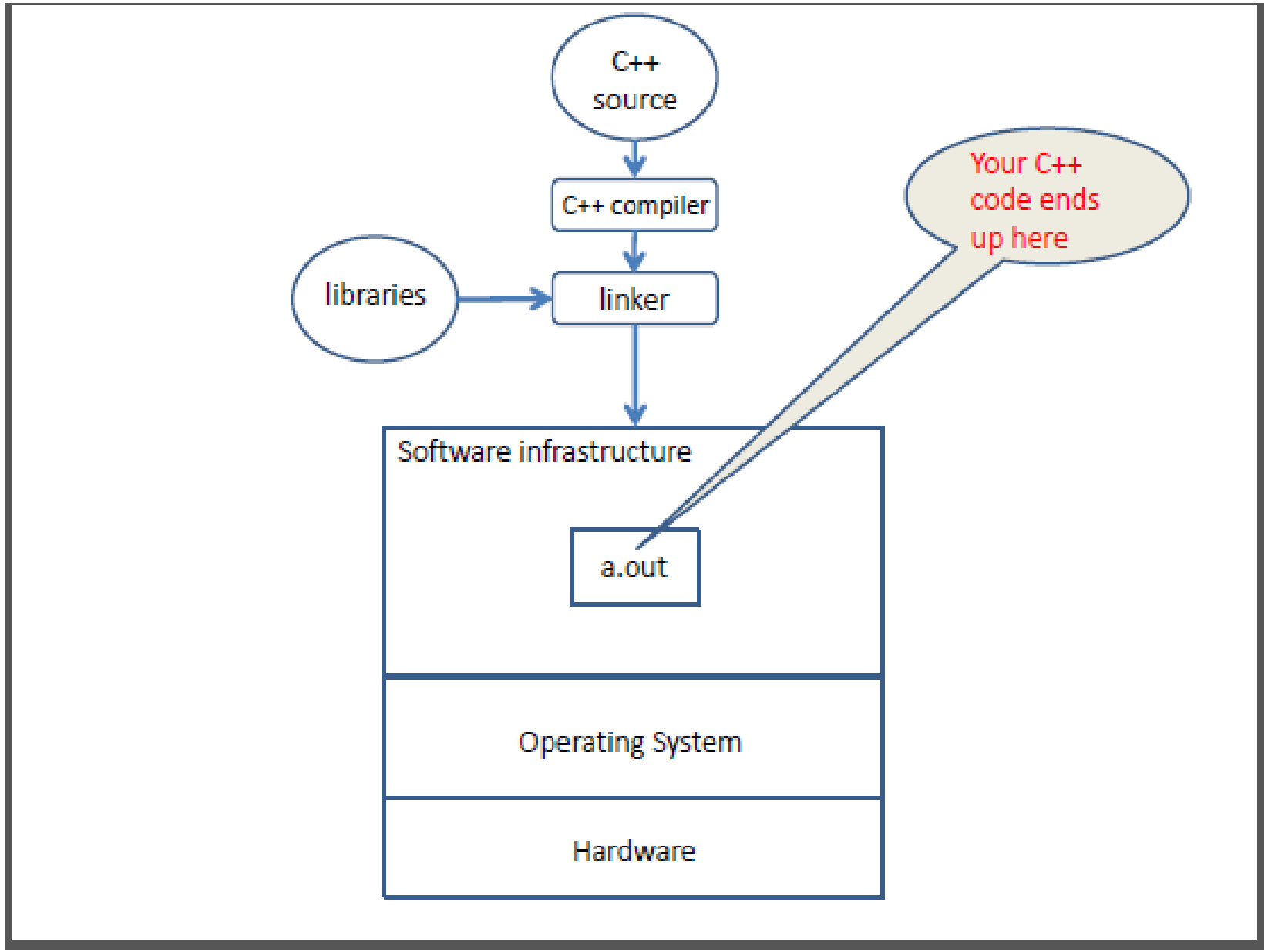
- Completed CS415 and CS416 (or the equivalent)
- Know basic data structures: linked lists, stacks and queues
- Best if you have completed CS515*
- In some *rare* cases it might be possible to take CS515 and CS520 at the same time
- You have programmed using C++
- You must be ready for the intensity level of the course

* CS515 is the *informal* prerequisite for CS520

Course Topics

- Basics of computer architecture
- Data and program representation
- Assembly language programming
- C programming
- Multithreaded programming
- Historical perspectives


You've been living here
Java Virtual Machine
Garbage Collector
Your Java Program
threads
Just-In-Time Translation
Operating System
Hardware


C++
source
C++ compiler
libraries
linker
Your C++
code ends
up here
Software infrastructure
a.out
Operating System
Hardware

Grading

- 90% - guaranteed A-
- 80% - guaranteed B-
- 70% - guaranteed C-
- 60% - guaranteed D-
- There is no curve
- I don’t need to see a nice balance of grades across the spectrum
- If you don’t get a grade that you need to move on in your program it’s best that you repeat the class

Evaluation

- 12 labs (18%)
- 6 programs (60%)
- 1 midterm (8%)
- 1 final exam (14%)
- Midterm and final exam are closed book/notes

Labs & Programs

- Programs are completed in two-week cycles.
- Labs are designed to encourage you to make steady progress on the current program.
- Lab 1: get started on a new program.
- Lab 2: intermediate checkpoint for current program.
- Should start labs **before** the lab session. Cannot be done in 50 minutes.
- Lab on Wed. Due at 12 midnight on Friday after the lab. No late submissions. **One minute late is late.**

Labs & Programs

- Programs are due at 12 midnight on the Monday after the second lab
- See the course website for the late policy for programs, guidelines for program documentation and structure
- Be sure to read the programming assignment specs carefully
- Learning how to generate your own tests is important in this course

Cheating

- You are expected to do your own work on labs, programs and exams
- Talk to other students about concepts but do not look at each other's code
- If it looks like cheating, I am going to say it is cheating
- I use automated tools for detecting cheating
- I check your submissions against all submissions in this semester, and in all prior semesters too.
- If I catch you cheating, I will give you an F for the course

How is it different from CS 515?

- You will write your programs in C (and perhaps a little assembly)
- You have fewer assignments but the programs that you are write are longer
- Your lab assignments directly contribute to your programs
- You are provided with less code to get you started
- No help for this class in the PAC, other than your TAs and myself you are on your own

TAs, MyCourses, Submissions

- TAs
  - Megan Barrett – help with labs, grading labs/programs, office hours
  - Stephen Wissow – help with labs, office hours
- MyCourses
  - Used only to post grades
- Submissions
  - Mimir