



Welcome

I am glad you are here.

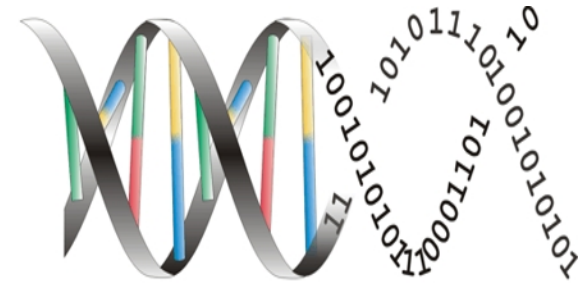


CS 164: Java (CS1) No prior programming experience

<http://www.cs.colostate.edu/~cs164/>

Computer Science: it touches everything!

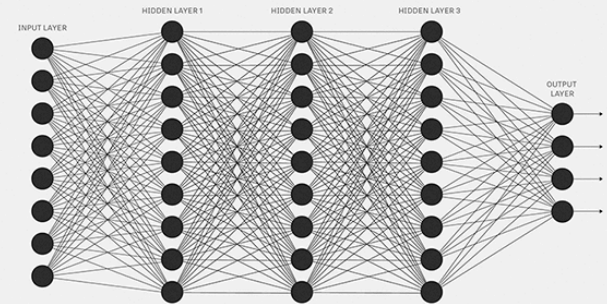
SOFTWARE TESTING



Computer Security



Deep neural network



DEPARTMENT OF COMPUTER SCIENCE

Introduction to CS1 Java Programming



AI: Artificial Intelligence

- Neural nets **simulate brains**

Cells firing signals at each other

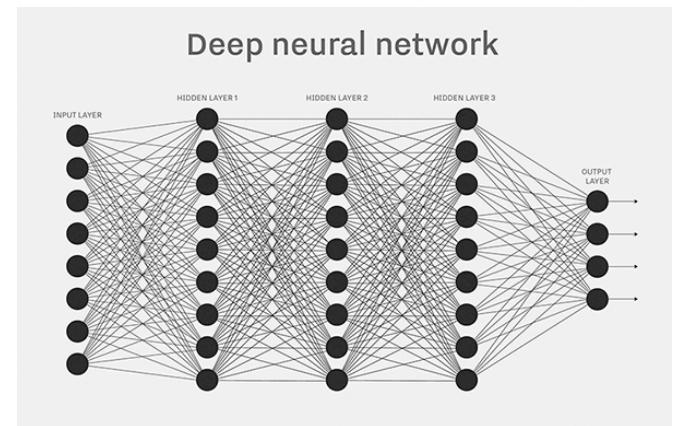
- Deep learning

many layers

complex behavior

- Google

Face recognition, language translation, game playing (chess, go)



Computers: hardware and software

- **Hardware:**

data centers, racks and racks of servers,
large volumes of data (disks),
data communication

- **Software:**

Programs are like recipes for
cooking

- **ERRORS (bugs):**

need checking / testing / logic



**SOFTWARE
TESTING**



Computer Security

protection layers

- **firewall:**
wire / network level
- **antivirus: OS level**
stop malicious program from
executing
- **authentication:**
are you who you say you are
does this e-mail have malware?



MORE: games, robots, supercomputing (phone) apps



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Introduction to CS1 Java Programming



The future...

<https://youtu.be/Q9ZHfZGhypo>

Kristina Brown

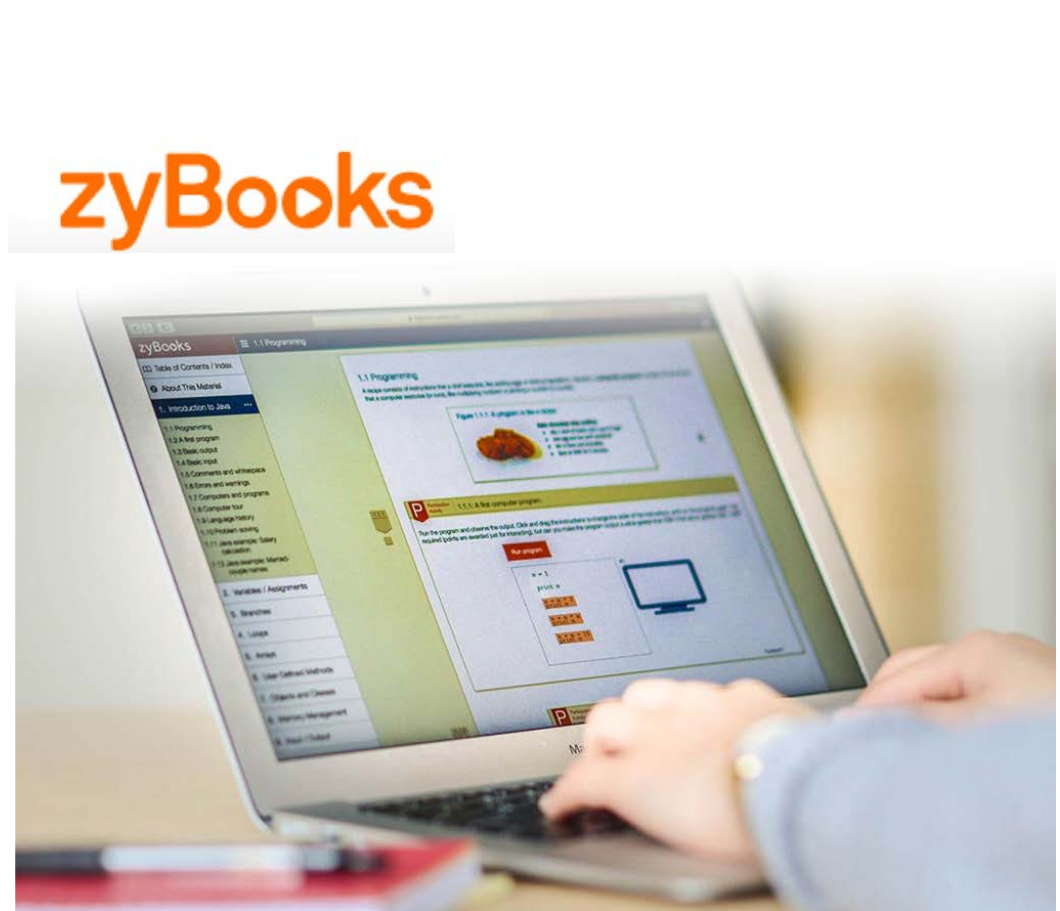
- About Me
- Office Hours: Tuesdays, 10a – 12p, CSB 258
- CS Advising Hours – Please don't come in during those times unless you need Advising

CS1 Course Topics

- C1: Languages, Computers, Operating Systems
- C2: Identifiers, Variables, Expressions, Operators
- C6: Methods: Parameters, Return Values
- C13: Interfaces
- C3: Conditionals, Booleans, Logical Operators
- C4: Math Functions, Characters, Strings
- C5: Loops: while, do/while, for
- C7, C8: Single and Multidimensional Arrays
- C9: Objects and Classes
- C12: Exceptions and File Input/Output
- C18: Recursion

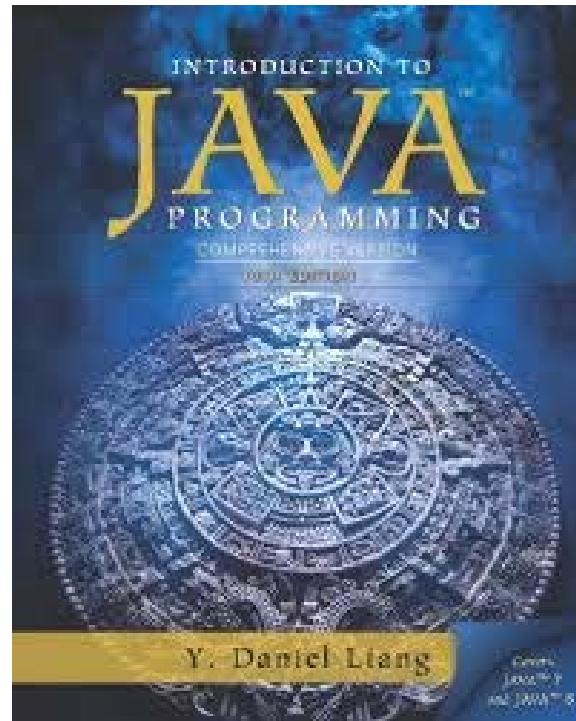
Resources eBook: zyBooks

- Setup instructions on syllabus
- Activities are graded!
- Introduced in Lab this week!



Resources: Java Textbook

**Introduction to Java Programming – Daniel Liang,
10th or 11th Edition**



Introduction to CS1 Java Programming

Resources: Piazza

- Have a question about content? Check Piazza
- Need clarification on an assignment? Check Piazza
- DO NOT post code to Piazza. You WILL get a zero on the assignment.

piazza

Grading Criteria

Grades will not be assigned lower than shown:

$\geq 90\%$ A

$\geq 80\%$ B

$\geq 70\%$ C

$\geq 60\%$ D

Else F

The instructor reserves the right to assign plus and minus grades. However, an A- (a minus), for example, is a **lower** grade than an A and therefore cannot be assigned to a score $\geq 90\%$. The instructor may choose to lower the cutoffs (i.e. be **more generous**) at his sole discretion at the end of the semester.

You must have a minimum average of 60% on the exams to receive a C

Grading Policy

- If you think you have been graded unfairly on a programming assignment, visit the cs163 help desk for an explanation.
- All lab grading issues should be resolved in lab with the lead Lab TA BEFORE seeing the instructor.
- If you cannot resolve the problem, email the instructor.
- Complaints about grades must be made within two weeks of when the grade is released - you cannot come to be more than two weeks after the grade is released to dispute a grade.

Communications

- Talk with your teaching assistant before or after labs, at help desk, or during lab hours.
- Talk with your instructor during office hours.
- Email your instructor directly, especially if privacy is needed (health issue, staff complaint, etc.)
- Do not attach comments to Canvas, use the **Piazza** bulletin board instead.
 - Piazza is in Canvas modules.
 - Topics for assignments, Labs, ...

Late Policy

- Every assignment has a due date
 - Full credit requires meeting this deadline
- There are no late submissions!
- Do the in class worksheets
 - They help you prepare for tests
- Exceptions only for excused absences
 - Medical emergencies, family emergencies, with documentation
 - If an emergency happens, email your instructor right away
 - You will have to get documentation from Student Case Management or another University office.

Getting Help

- Web Sites:
 - www.cs.colostate.edu/~cs164
 - Especially the Schedule Page
- Lectures, Recitations, Lab Hours, Help Desk
- Lab operators (general questions)
- Office Hours (see syllabus)
- Tutors, Friends, Consultants (be careful, you are responsible for your work)
- Textbook, Internet

Academic Integrity

- All assignments, labs, quizzes, exams are solo
 - Unless otherwise specified
 - You may get help from course instructors and TAs
 - You may discuss concepts with other students, but:
 - Never share code with another student
 - Never copy code from another student
 - Never let anyone else type in code for you
- Know the department academic honesty code!

Lecture Expectations

- Come to class
 - Attendance predicts success
- Be active, not passive:
 - Take notes, Ask questions
 - Do the worksheets
- Be prepared
 - Do reading assignments before the lecture
- Be on time
 - Lectures start and end on time

Lecture Expectations

- Cell phones on vibrate-only
 - If you need to answer, leave the room first
 - You may use your phone as your iClicker
- Laptops for note taking or coding!
 - No games, audio, video, inappropriate websites
- Respect your colleagues
 - No snide or rude comments
 - No comments on abilities
 - No extended conversations

Lab Expectations

- Use the Linux Lab – CSB 120
 - Not the Windows Lab – CSB110
 - No uncovered drinks and no food
- Treat the lab as a professional workplace
 - No disparaging comments
 - No loud/rude/distracting behavior
 - Professional composure at all times
 - **No sexual harassment of any sort, not ever!**

Tell Someone!

- If you see something concerning, please Tell Someone
 - Your Instructor
 - Your TA
 - CSU Tell Someone Office
 - <http://supportandsafety.colostate.edu/tellsomeone>

Motivation

A student asks a roommate, “Could you please go shopping for us and buy one carton of milk and, if they have avocados, get six.” A short time later, the roommate returns with six cartons of milk.

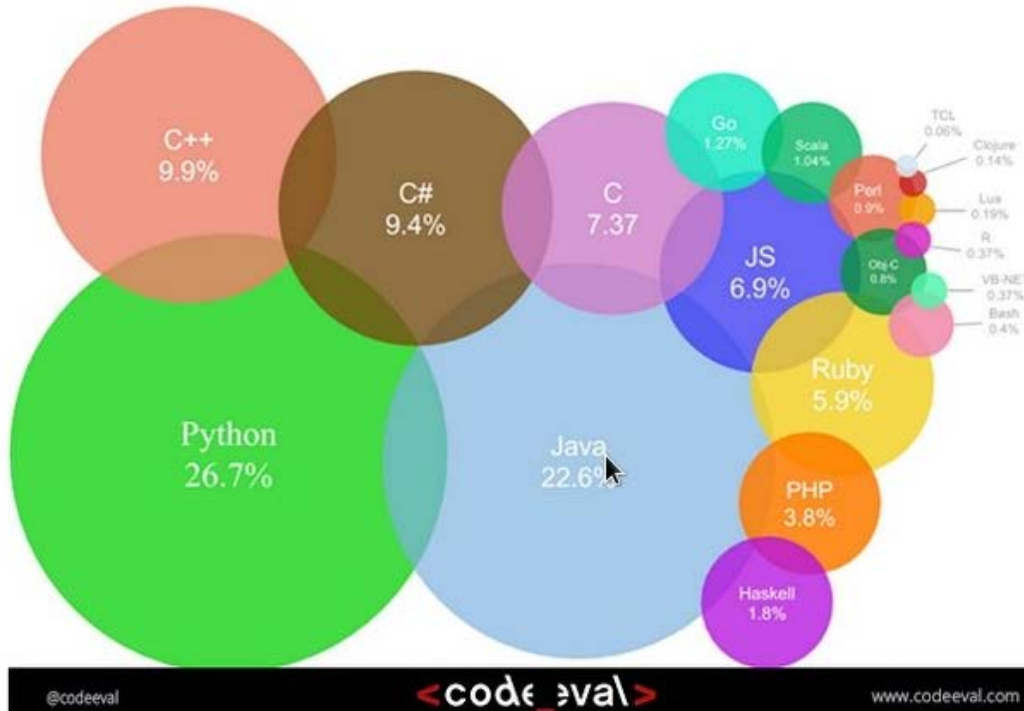
“Why did you buy six cartons of milk?” asks the student. The reply: “They had avocados.”

Reader’s Digest, September 2013

This is exactly what your Java program will do, because computers do what you ask them to do, not what you want them to do!

Motivation

Most Popular Coding Languages of 2016



Most Popular Coding Languages of 2016

Motivation



AVERAGE U.S. TECH SALARY 10-YEAR TREND

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY	AVG. SALARY
\$78,845	\$79,384	\$81,327	\$85,619	\$87,526	\$88,479	\$93,328	\$92,081	\$92,712	\$93,244
YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE	YR/YR CHANGE
1.0%	0.7%	2.4%	5.3%	2.2%	1.1%	5.5%	-1.3%	0.7%	0.6%

Motivation



LEARNING: definitions

- **Learning** is a biological process. It occurs when networks of neurons in your brain send each other signals.
- **Thinking** is webs (of neurons) sending signals to other webs. A new idea is a newly formed sub network of neurons firing signals at each other
- Two aspects:
 - Understanding
 - Remembering

Understanding

- Comes sometimes in a “flash” (Oh I get it)
- Often times it takes **repeated exposure**, examples, associations, hard work
- If you don't get it, go for a walk, come back, try more circuits in your brain

what does that mean?

- This requires FOCUS of ATTENTION (concentration) and REPEATED ACTION (do it, do it!)

Understanding cannot be achieved passively; it demands an **active and focused mind.**

Remembering

- Memory: also a biological process involving firing of neurons.
- Memories are **RECONSTRUCTED** (replayed) each time remembering happens.
- **Use it or lose it:** our brain's web connections are not permanent, they need to be reused / reactivated to stay
- Neural nets that get used a lot become stable

Learning

- Learning does NOT just happen to you
it is something **you do to yourself**.

The instructor can teach you theory and practice,
point the way, give you exercises, problems to solve,
do the hoki poki, BUT

- Learning is all **YOUR ACTIVITY**

The basic assumption is that you **want to** learn.

Without that, nothing will work

You won't learn unless you want to!

- Learning relies on your brain, which demands the same maintenance (food, exercise) as the rest of your body.
- Learning is difficult and it requires repeated effort.
- Don't cram the night before a test. Set yourself up for success!

But if done right, it is **GREAT!**

We wish you the best in your college days.