CS 1: Welcome and Introduction

CS 164: Java Programming

Colorado State University
Computer Science Department
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Colorado State University

Who are you?

- Grab a paper sheet, do a name tag and put it on your table ☺
- Do it as soon as you see this!
- Have it with you at the end of the class, you will use it in our next classes!

Who Am I?

- PhD in Computer Science from Federal University of Rio Grande do Sul (UFRGS), Brazil
  - Artificial Intelligence applied to Education
- PhD Student in Education Science working with Learning Analytics, School of Education, CSU
- 23 years of experience in Higher Education
- Research Interests
  - Computer Science Education
  - Learning Analytics
  - Technology Enhanced Teaching and Learning
- Outside Interests
  - Reading
  - Traveling with my family
  - Riding my bicycle

Instructor: How to Contact Me?

- MS Teams Private Message
  - *BEST WAY*
  - email (poor), canvas (very bad!!)
- General questions
  - Post in the general channel!
  - Let's other see the answer
- Check the Syllabus for Office Hours!
  - Mixed MS Teams and Office
    - stop by either but may need to wait.

Weekly Announcements

- Will have these up every week!
- Start of every class as you come to class.

- Always, always plan for readings to be done before class.

TODO Reminders:

- Setup MS Teams
- Reading 1 (Zybooks)
- Syllabus Quiz
- Python Review Exam
- Knowledge Check – RPA 1

Topics Covered

- Basic Java Programming
  - Variables
  - Control Structures (Branching)
  - Loops
  - Arrays
  - ArrayLists
  - Classes
  - Inheritance
  - Polymorphism

- Essentially - learning the tool to build basic programs!
- Problem Solving
- Divide-Conquer-Glue
  - A way to look at the world

Computational Thinking:
Decomposition
Pattern Recognition
Abstraction
Algorithms

Like learning music - programming takes practice, practice, practice

Teaching Approach/Concepts

- Based on Psychology of Learning (4 week cycles)
  - Spacing
  - Interleaving
  - Practiced Recall
  - Elaboration
  - Reflection
- Grading
  - Formative – Can be redone!
  - Summative – Demonstrate what you know
- You are learning
  - A new language
  - A different way of thinking (Divide-Conquer-Glue)
  - OK to struggle!

To have another language is to possess a second soul. - Charlemagne (748 –814)

Course Structure - Follow Canvas

- Readings
  - Due before Lectures - Sunday, Tuesday and Thursday nights
- Lectures, Attendance, Worksheets
  - Active learning, a lot of group discussion and coding – BE HERE – or you will miss out.
- Labs
  - Meant to be done after lecture content, due day assigned - coding/writing code
- Knowledge Checks/Retrieval Practice Activities
  - Your best study tools
- Exams
  - Canvas exams – reading content
  - Coding exams – writing content
- Practical
  - These are large and *hard* programming assignments (usually 2 weeks), that bring it all together

Knowledge Checks/Retrieval Practice Activities

- Focus on **Reading Code**

- Also help with recall
  - Best thing to do – go back to them
  - Interleave – pick different orders to redo them from time to time
  - Spacing – do some every night!
  - Psychology of learning – this helps!

- Best way to study for exams?
  - Every other night – knowledge checks, practice exam
    - Retesting + spacing
    - Highest result is the one kept

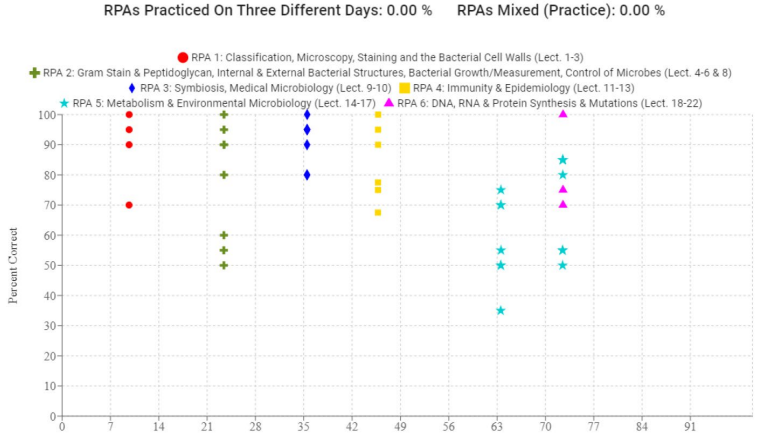
	ReStudy	ReTesting
Massed	Most People	
Spaced		Ideal For Recall

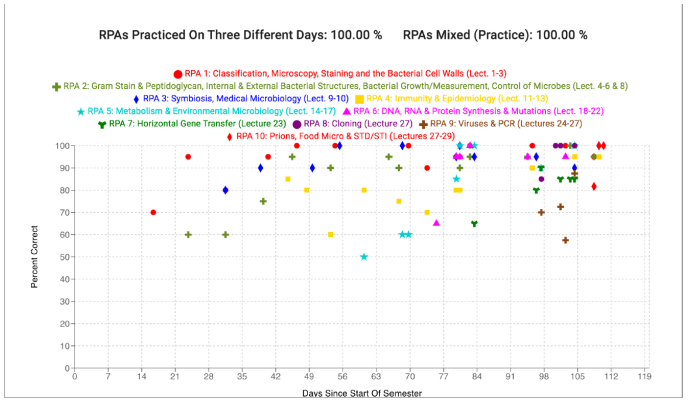
U-Behavior App and Research

- Home
- Announcements
- Modules
- Grades
- People
- Assignments
- **U-Behavior CSU**
- Echo360
- Manage eResources
- TextAid
- LockDown Browser

Course Information — Complete All Items

- Welcome to the Course - Start Here
- Syllabus (opens in a new window)
  View
- Course Introduction: MS Teams
- Welcome Survey
  Aug 22 | Submit
- Research Consents
- Research Consent - U-Behavior
  Aug 22
- Research Consent - Self Explanation
  Aug 22
- U-Behavior and Retrieval Practice Activities (RPAs)





Labs

- Tuesday Labs
  - 2 of 4 grade is based on activities / participation
    - Self-explanation in comments, drawing out graphs, writing tests
  - 2 of 4 grade is based on submitted / auto graded (one is often just debugging)
  - All is meant to be done during lab.
  - Miss a lab, you need to coordinate with the lab TA.
- Thursday Labs
  - Meant to building small programs with a peer
  - Can often take more than one day
  - Will have both provided code and your own code you write
  - 1 of 4 grade is based on activities / participation
  - 3 of 4 is auto graded / based on working code.
  - Some of them *build* on each other, so you need past ones completed!

MS Teams!

- MS Teams
  - Used in industry
  - We make use for the course (mixed with online and on-campus students)
- Install the Application! (not just the browser)
- Use the General Channel (Study Group!)
  - General Questions
  - Knowledge Checks
  - Reading
  - aka, any question that doesn't require posting code *you* write

Asking For Help!

- Starts this week – meet your TAS and ask for help about Python Review Exam and any questions that you may have regarding the first readings
- Help Desk – Office Hours (TA Code Review)
- All hours are described here:
  - https://www.cs.colostate.edu/~cs163/.Fall23/#/

Office Hours/Student Hours – Marcia

- W 8:00-9:00 am – CSB 456 and Teams
- F 12:30-1:30 pm – CSB 456 and Teams
- By appointment

PRINCIPLES of COMMUNITY

THE PRINCIPLES OF COMMUNITY SUPPORT THE COLORADO STATE UNIVERSITY MISSION AND VISION OF ACCESS, RESEARCH, TEACHING, SERVICE AND ENGAGEMENT. A COLLABORATIVE AND VIBRANT COMMUNITY IS A FOUNDATION FOR LEARNING, CRITICAL INQUIRY, AND DISCOVERY. THEREFORE, EACH MEMBER OF THE CSU COMMUNITY HAS A RESPONSIBILITY TO UPHOLD THESE PRINCIPLES WHEN ENGAGING WITH ONE ANOTHER AND ACTING ON BEHALF OF THE UNIVERSITY.

INCLUSION

We create and nurture inclusive environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents and contributions.

INTEGRITY

We are accountable for our actions and will act ethically and honestly in all our interactions.

RESPECT

We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.

SERVICE

We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.

SOCIAL JUSTICE

We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

Colorado State University

Coding is Like Music

- To be successful in CS 164
  - Work on your schedule – don't fall behind
    - Come to lectures
    - Go to your lab
  - Get help when you are stuck
  - Keep practicing
- Memorization
  - Won't help you!
  - You can't memorize problem solving ☺
    - You have to practice **Divide-Conquer-Glue**

And who was the first programmer?

- Talk with your peers/neighbors
  - Grab a paper
  - Write everyone names and their guesses (it could be "I don't have any idea ☺")
- Do a web search to find an answer to that question
- Write the first programmer's name and at least one information that you found about them

And who was the first programmer?

The Right Honourable
Countess of Lovelace

Photo By:
Alfred Edward Chalon [Public domain], via Wikimedia Commons

- Ada Lovelace (1815-1852)
- English mathematician who worked with Charles Baggage on his Analytical Engine
- In 1843 she translated an article written by the Italian mathematician and engineer Luigi Federico Menabrea, "Notions sur la machine analytique de Charles Babbage" and supplemented it with her own "Notes"
- Her "Notes" contains what many consider to be the first computer program
- Ability to connect the Arts and Science, she developed a vision of the capabilities of computers to go beyond calculation, it can do anything that can be noted in symbols, including words and music (https://www.britannica.com/biography/Ada-Lovelace/images-videos)
- Ada Lovelace Day – second Tuesday in October