CS 152: Welcome and Introduction

CS 152: Python for STEM

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
- 22 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*
- General questions
  - Post in the general channel!
  - Let's other see the answer
- Office Hours
  - Mixed MS Teams and Office
  - MW 8:30-9:30am CS 456 and Teams
  - By appointment

Weekly Announcements!

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

TODO Reminders:

- Setup MS Teams
- Reading 1 (zyBooks)
- Reading 2 (zyBooks)

CS 152: Topics Covered

- Python basics (variables, operations, printing)
- Control Structures (Conditionals, Loops, Functions)
- Lists and Dictionaries
- Introduction to Recursion
- Transitional Topics (Object Oriented Programming, Java)

Interactive Approach

Why Python?

- Used in all fields for scripting and research

Further Reading: https://www.geeksforgeeks.org/why-you-should-learn-python-in-2021/

Teaching Approach/Concepts

- Based on Psychology of Learning
  - Spacing
  - Interleaving
  - Practiced Recall
  - Elaboration
  - Reflection

> “To have another language is to possess a second soul
>
> *Charlemagne*

- 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!

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 - Formative
  - Meant to be done after lecture content - coding/writing code
- Knowledge Checks – Retrieval Practice Activities (RPAs) - Formative
  - Required to move onto the next module
  - Your best study tools
- Exams - Summative
  - Canvas exams – reading content
  - Coding exams – writing content

Key Points

- Keep with the recommended course pace!
  - It is very difficult to catch up. Don't be that person.
- The goal of the flexibility
  - Allows you to *go back* to make sure you learn it
  - Remember, you can't progress content unless you submit!
- Best way to study?
  - Spacing and Interleaving your RPAs
  - Learning Science!

	ReStudy	ReTesting
Massed	Most People	
Spaced		Ideal For Recall

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.

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Asking For Help!

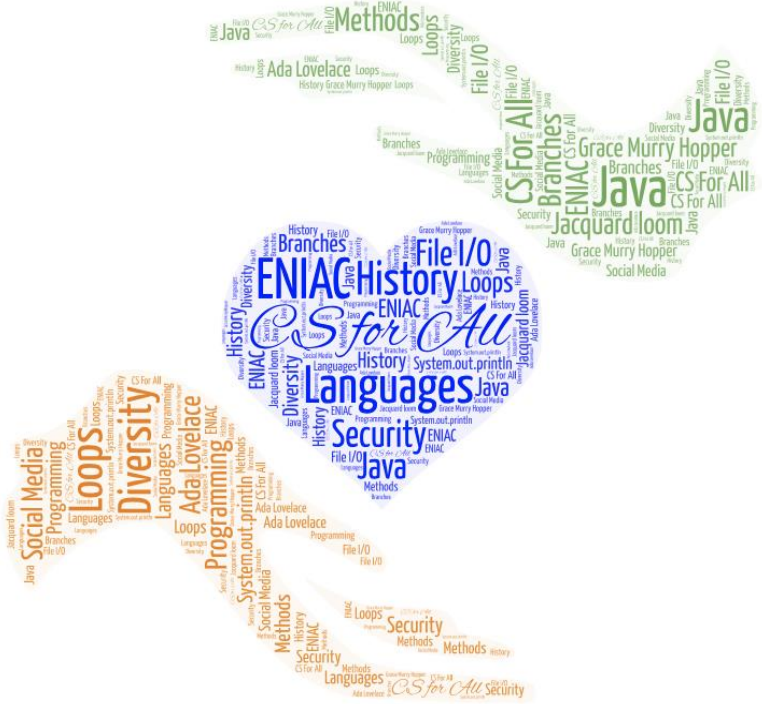
- MS Teams
  - Install the Application! (not just the browser)
- Use the General Channel (Study Group!)
  - General Questions
  - Knowledge Checks - RPAs
  - Reading
  - aka, any question that doesn't require posting code *you* write
- Office Hours – Marcia
  - MW 8:30-9:30 am – CSB 456 and Teams and by appointment

Asking For Help!

- Starts the second week of classes
- Help Desk – Office Hours (TA Code Review)
- Help Session (TA Support on Content)
- All hours are described here:
  - https://www.cs.colostate.edu/~cs152/23sp001/#/

Coding is Like Music

- To be successful in CS 152
  - 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