Welcome to CSCI 134!

Introduction to Computer Science

What is Computer Science?

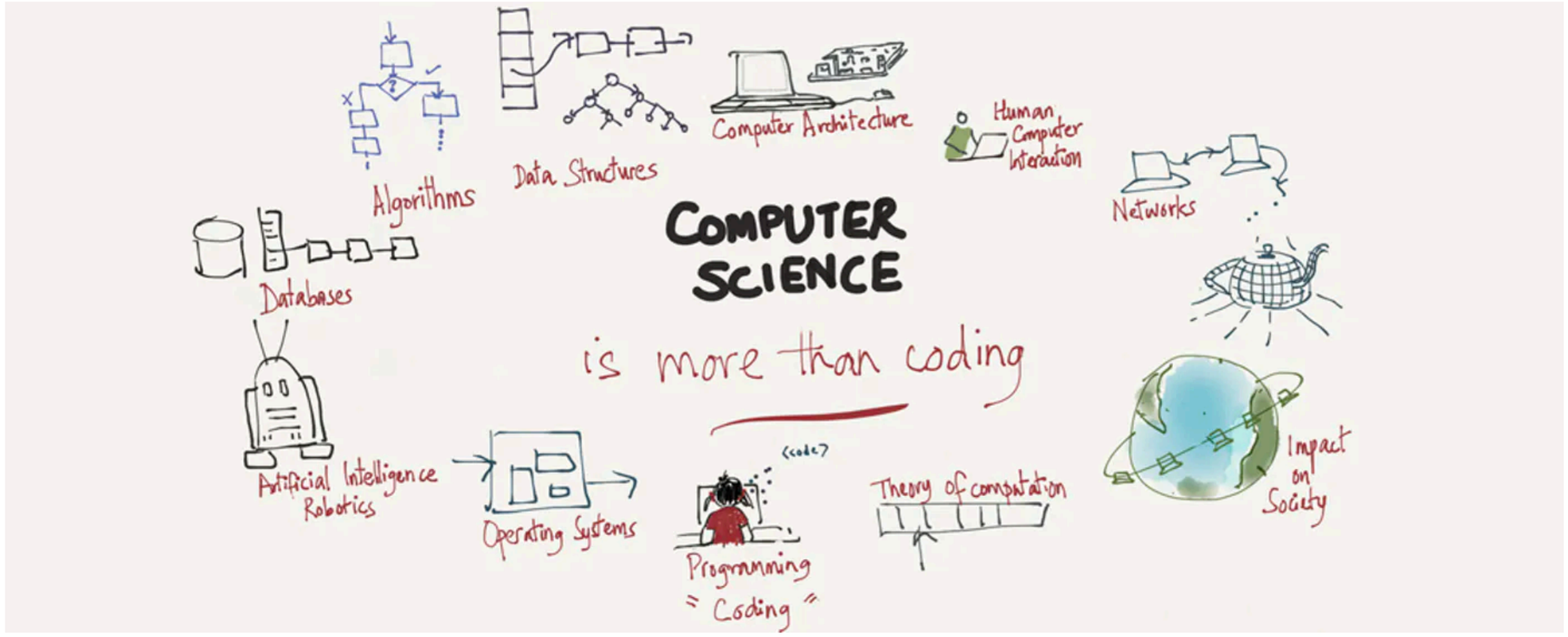
[Hint. It is not really about computers!]

"[Computer science] is not really about computers -- and it's not about computers in the same sense that physics is not really about particle accelerators, and biology is not about microscopes and Petri dishes…" — Hal Abelson

"The topic became – primarily in the USA – prematurely known as 'computer science' – which, actually, is like referring to surgery as 'knife science' – and it was firmly implanted in people's minds that computing science is about machines and their peripheral equipment." — Edsger Dijkstra

What is Computer Science?

- Computer science ≠ computer programming!
    - Programming is a big part of computer science, but there is much more to CS than just writing programs!
- Another part of CS is computational thinking



https://www.edsurge.com/news/2015-12-02-computer-science-goes-beyond-coding

Computational Thinking

- Computational thinking allows us to take a complex problem, understand what the problem is and develop possible solutions. We can then present these solutions in a way that a computer, a human, or both, can understand.
- Four pillars of CT:
  - Decomposition - break down a complex problem or system into smaller, more manageable parts
  - Pattern recognition – look for similarities among and within problems
  - Abstraction – focus on important information only, ignore irrelevant details
  - Algorithms - develop a step-by-step solution to the problem, or the rules to follow to solve the problem
- A computer can performs billion of operations per second, but computers only do exactly what you tell them to do!
- In this course we will learn how to 1) use CT to develop algorithms for solving problems, and 2) implement our algorithms through computer programs

Course Logistics

CS134 Team

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She/Her/Hers
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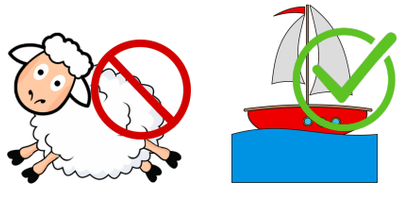

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CS134 TA Team

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Aniya Smith

Tasan Smith-Gandy

Jocelyn Bliven

Tryphena Bossman

Greta Laesch

CS134: Course Website

- https://www.cs.williams.edu/~cs134/
- One stop shop for all CS134 related info!

CSCI 134

Introduction to Computer Science

Home | Bill's Lectures | Shikha's Lectures | Assignments | Resources | Williams CS

Home

Instructor:	Bill Jannen
Email:	09wkj@williams.edu
Office:	TPL 304
Help Hours:	(**In TCL 216/217**) W 12-1:30pm, Th 2:30-4 and by appt.
Class Meetings:	MWF 9-9:50 in Schow 030A
Instructor:	Shikha Singh
Email:	shikha@cs.williams.edu
Office:	TCL 304
Help Hours:	(**In TCL 216/217**) W 2-4pm, Th 1-2:30 and by appt.
Class Meetings:	MWF 10-10:50 & 11-11:50 in Schow 030A
Course Support:	Lida Doret
Email:	lpd2@williams.edu

Grading Breakdown

- **Homeworks (10%)**
  - Short answer programming & problem solving questions
  - Due every Monday (usually on GLOW)
  - Practice using "pencil and paper" before submitting answers
- **Labs (30%)**
  - Meet Mon/Tues for 90 mins
  - Monday labs → Wed @ 10pm | Tuesday labs → Thurs @ 10 pm
  - Review lab as soon as it comes out (~Fridays)
  - **Prelab** (5% of lab grade): complete before lab
- **Midterm (25%)**
  - Evening exam on **Thurs, March 14**
- **Final (35%)**
  - Scheduled Final Exam

Textbook?

- We **do not** have a textbook for CSCI134
- We will post all lecture materials (slides, code examples, etc.) on the website
- Use Online Textbook **Think Python** you can use as a reference: http://greenteapress.com/wp/think-python-2e/

Homework

- Usually multiple choice GLOW "quizzes"
- Serve as check points to review lecture content
- Will be posted on GLOW every Wed, due following Mon 10 pm
- Homework 1 is out (linked on course webpage/GLOW)
  - **Google Form** to get some information about you
  - Due Feb 5 (Monday) by 10 pm
- We'll drop your lowest grade

Labs

- Longer programming assignments typically **released on Friday**
- Will be posted on webpage under assignments
- We expect you to read over the lab write up and complete the pre-lab (starting Lab 2) before your lab meeting
- Besides the pre-lab, we strongly encourage (but don't require) you to start working on the actual implementation
- Labs are short: only 1.5 hours! Make the best of it by coming prepared!

Accounts

- **CS accounts**
  - You should have received an email from Lida about your CS account. This is a separate account from your campus account!
  - You will use these accounts for submitting labs this semester
- **Labs** are in **TCL 217A and TCL 216** (behind the stairwell)
  - This door is also always locked!
  - The combination is **3-9-2-7-8-1** (think 3-9-27-81)
- Each of you have also been assigned a unique anonymous ID assigned
  - Allows us to implement anonymous grading
  - Your email from Lida contains this info
  - Do not share your ID!

Weekly Workload Summary

MON	TUE	WED	THU	FRI	SAT	SUN
Lab	Lab	Next HW posted		Next Lab posted	Complete pre-lab	
		Graded Lab returned			Work on HW	
HW due 10 pm		Mon Labs due 10pm	Tues Labs due 10pm		Review Lectures	

Help Hours

course calendar link

Room: TCL 216/217a

MON	TUE	WED	THU	FRI	SAT	SUN
4-5pm		noon-4pm	1-4pm			
		4-6 pm	4-6 pm			
7-10 pm	7-10 pm	7-10 pm	7-10 pm			7-10 pm

Late Policy

- Expected to turn in assignments by the due date to receive full credit
- No late days
- Things happens so if something comes up, please reach out to the course staff ***as soon as possible*** if you cannot meet a deadline
- **All emails for *extenuating* circumstances:**
  cs134staff@williams.edu

Honor Code

- "Any work that is not your own is considered a violation of the Honor Code."
- This includes work copied from webpages, auto-generated code, etc
- If you are taking photos of someone else's screen, looking at someone else's screen, or telling someone else what to type, it is likely your/their work is no longer the work of an individual student.
- The following are all considered violations of the Honor Code:
  - giving your solution to other students
  - submitting another person's solution as your own
  - using another person's solution as the starting point for your solution
- One of the major goals of this course is **to learn how to write code**. Any use of generative AI technology (e.g. ChatGPT, Github Copilot) for code generation is therefore considered a violation of the Honor Code.
- If you aren't sure if something is considered a violation, just ask (beforehand)!

About Class Participation

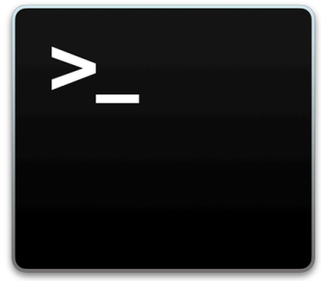
- **We like interaction in our classes!**
- Many ways to participate:
  - Ask questions! (there are no bad questions!)
  - Answer questions (there are no wrong answers!)
  - Talk to us after class/come to office hours
- Class participation does not mean dominating classroom discussions or interrupting your peers

Bottom line. *Help create a vibrant, positive, and inclusive classroom environment!*

CS134 Tools

Computer Scientist's Tools

- **Terminal**
  - Command line or "Shell"
  - Text input/output interface to interact with your computer



- **Editor**
  - Visual Studio Code (or VS Code)

- **Git**
  - Version-control system

- **Python**
  - Programming language
  - Created by Guido van Rossum in the late 1980s.

Fast Paced Course

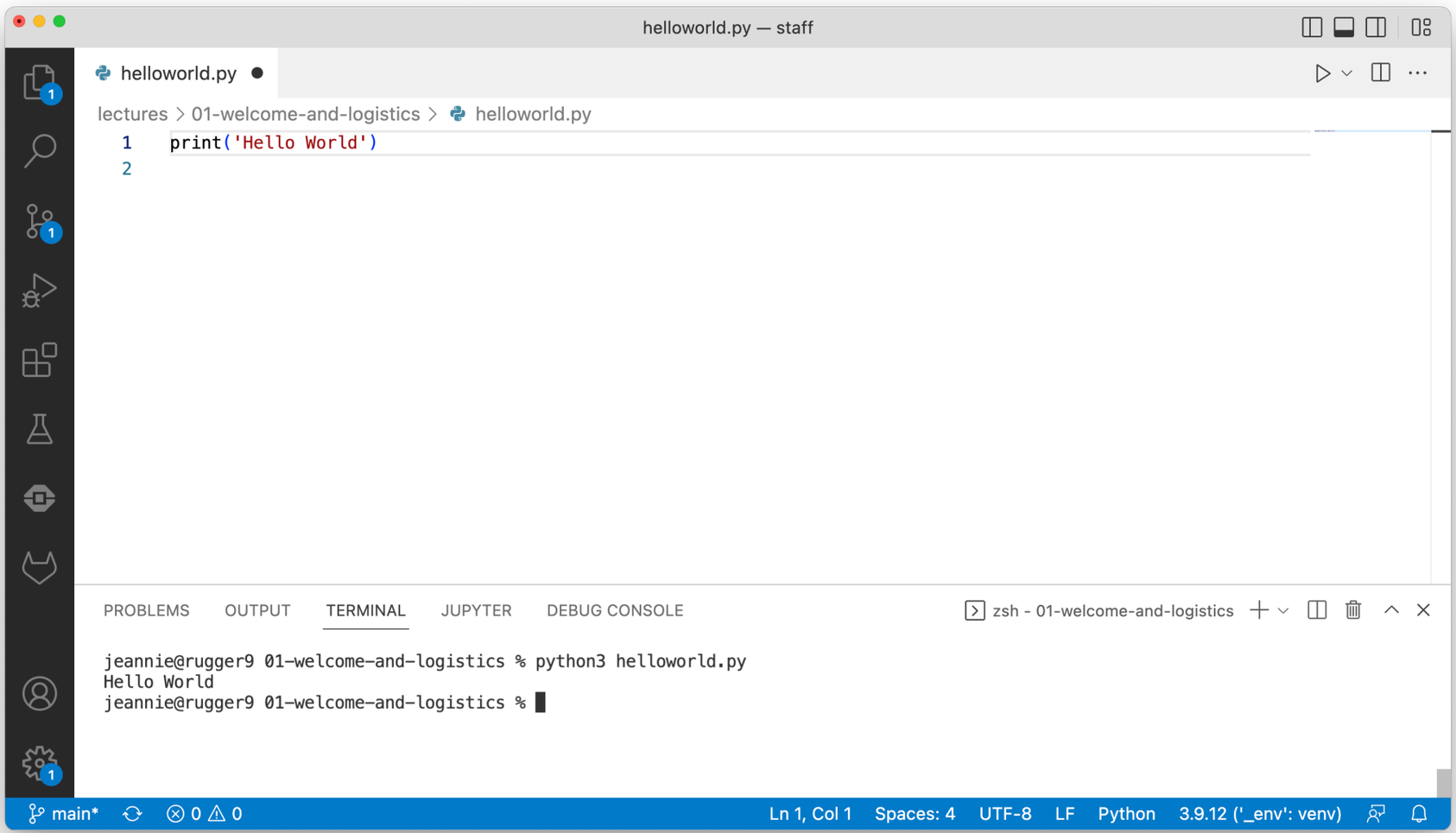
- How to succeed:
  - Read and **think about** labs as soon as they are released
  - Seek help! Use resources! We are all here to help you!
- Learning to program is all about **PRACTICE, PRACTICE, PRACTICE!**
  - Just like learning a musical instrument, learning to ski, or building muscle, it requires repetition and dedication
  - Can't passively absorb material
  - **Don't be afraid to fail and make mistakes**—in fact you are encouraged to do so!
  - No one learns anything without making mistakes and learning why and how to fix them

Setting up your Personal Machines

- We strongly encourage you to use the lab machines (Mac)
  - Already configured with everything
  - Better ergonomics
  - Community
  - Separate your workspace from leisure
- **Resources to setup your personal** (Windows/Mac) machine are also available
  - Come see us if you get stuck!
  - Useful if you are traveling or sick

Hello World!

- Our first program:
  - Create a file called **`helloworld.py`** in VS Code
- Execute a python3 program from terminal (either standalone or within VS Code)
  - Type **`python3 helloworld.py`** and enter



CS Colloquium Today

- Almost Every Friday
- Time: **2:35pm**, Location: **TCL123** (Wege Auditorium)
- Great way to engage with the CS community @ Williams
- Today: Thesis Proposals