PRINCETON UNIVERSITY

# COMPUTER SCIENCE 125

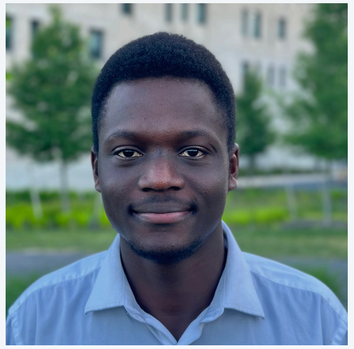
# The Art and Science of Computer Programming

## Summer 2024

Marcel Dall'Agnol

Sebastian Caldas

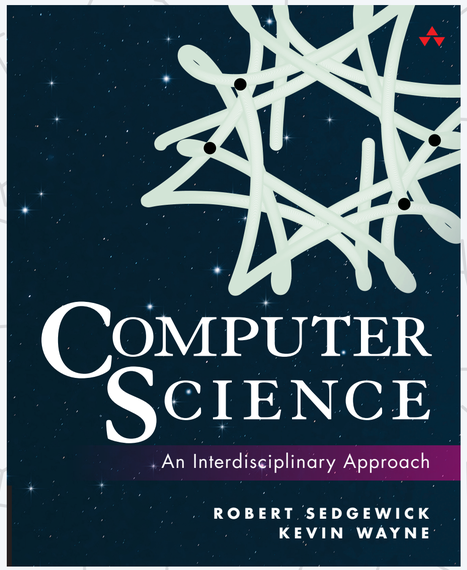
Ammaar Alam


Erik Lawani


*https://www.cs.princeton.edu/~cos125*

# Computer Science

ROBERT SEDGEWICK | KEVIN WAYNE

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## COS 125, SUMMER 2024

- *the power of technology*
- *course mechanics*
- *course resources*



Last updated on 7/1/24 10:02AM

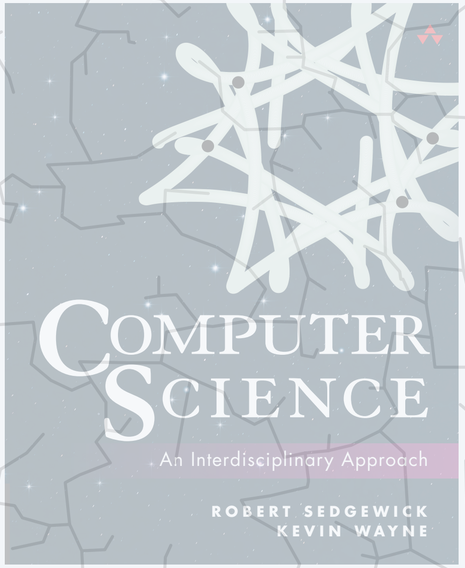
# COS 125 course objectives

Goal 1. Identify computational problems and the strategies used to solve them.

Goal 2. Reason about the steps required to solve such problems.

Goal 3. Write and debug code that implements the solution to computational problems.

| topic | purpose |
|---|---|
| **data types** | store information |
| **conditionals** | control the flow of a program |
| **loops** | repetition |
| **arrays** | processing huge amounts of data |
| **ethics** | using our tools responsibly |
| **input and output** | text, graphics, sound |
| **functions** | building larger programs |

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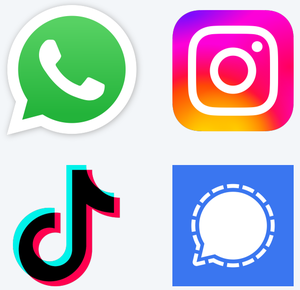
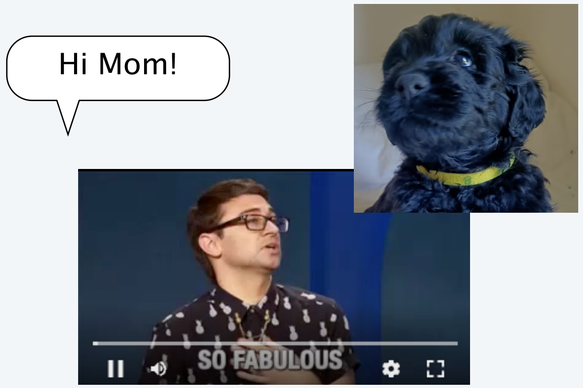
# Technology is transforming society

## Example



## What can we do with it?



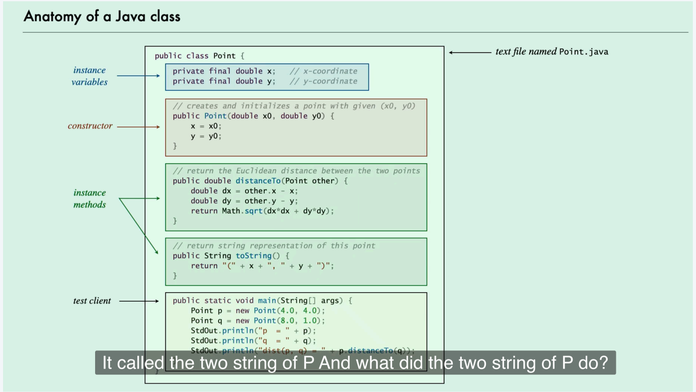

## Impact on society

- Stay connected
- Amplify voices
- Mobilize groups
- Distract
- Exposure to unattainable ideals

coursera

Khan Academy

edX




- Higher education at scale
- Lifelong learning
- Most of the offering is in English
- Retention rates can improve

# Technology is transforming society

## Example

## What can we do with it?

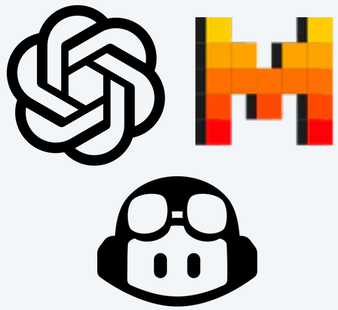
Alexa, please set a timer for 10 minutes.

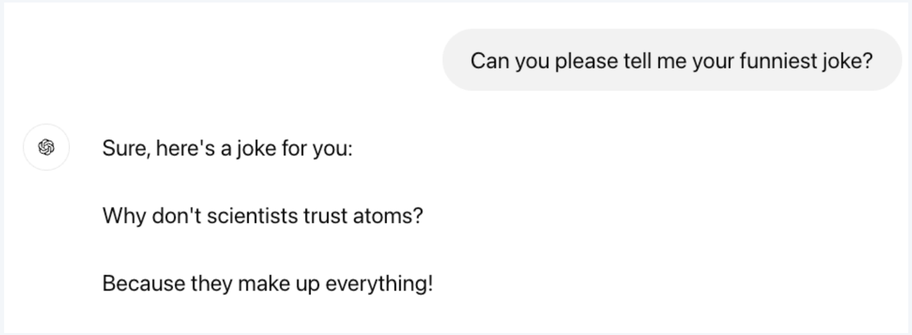
Siri, what's the weather forecast for tomorrow?

Hey Google, please turn on the lights.

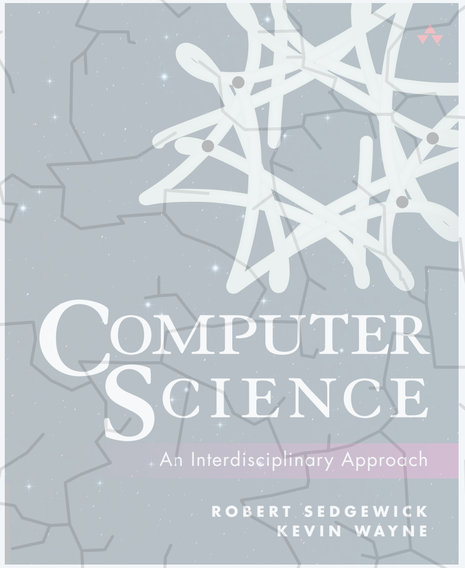
## Impact on society

- Support a wider range of ways to interact with technology and information
- May have trouble with people who stutter or code-switch between languages






- Increase efficiency
- Vertiginous change
- Bad jokes

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# COS 125, SUMMER 2024

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# Course elements

| | Objective | When | Where | Who |
|---|---|---|---|---|
| **Lectures** | Introduce new material | MW 1:30–2:50pm | McDonnell 105 | Marcel or Sebastian |

**We encourage you to participate!**

**Marcel Dall'Agnol**

**Sebastian Caldas**

# Course elements

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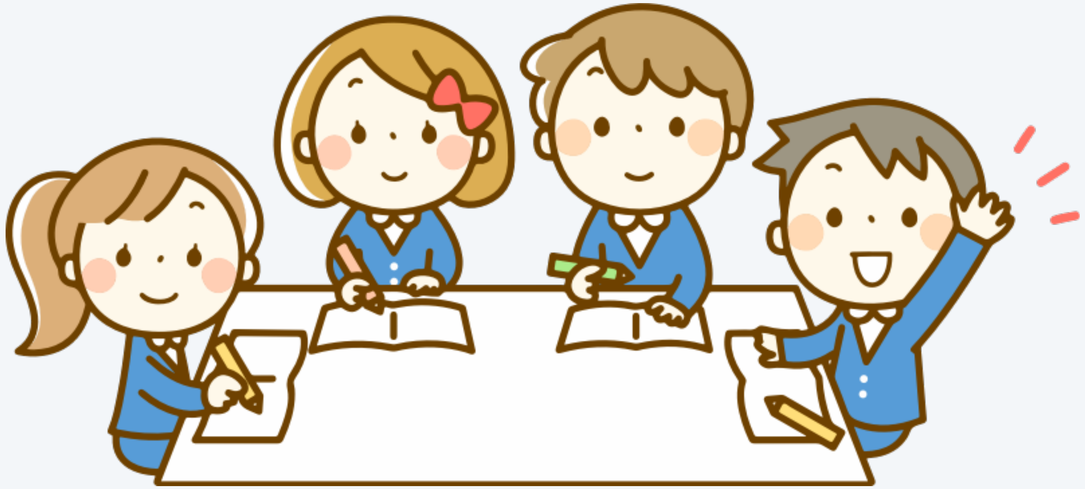

**This is a supportive environment to ask questions and make mistakes**

**Marcel Dall'Agnol**

**Sebastian Caldas**

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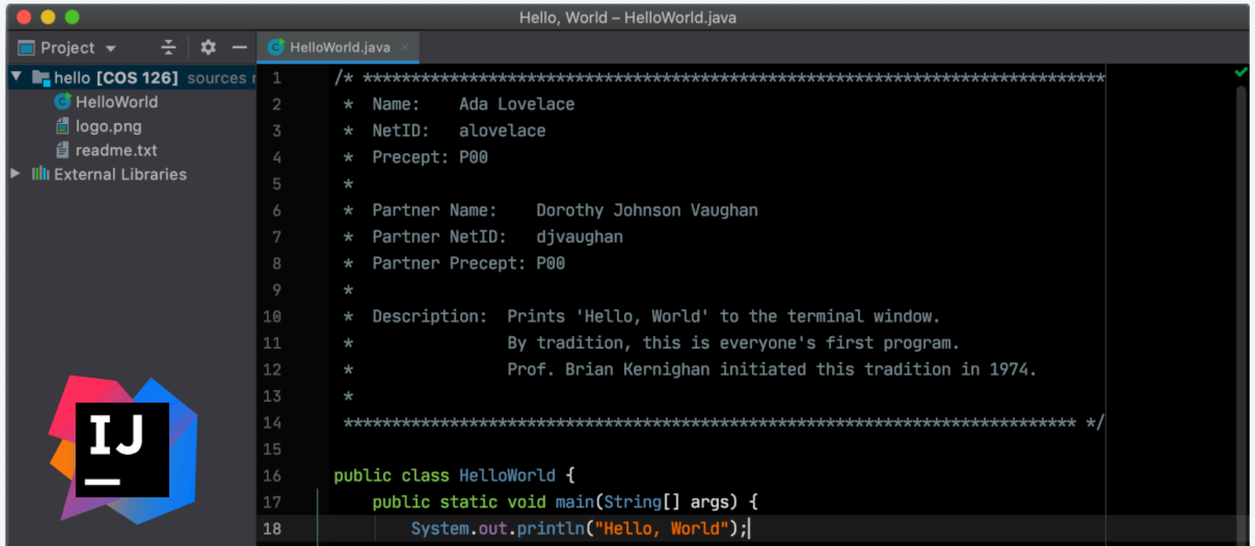
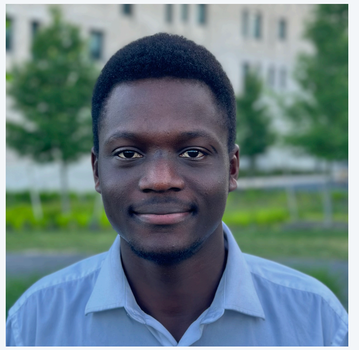
| **Labs** | Work on assignments with support from course staff | F 10:30am–1:00pm | | Ammaar and Erik |



**Ammaar Alam**



**Erik Lawani**

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| **Quizzes** | Practice the concepts discussed in class | Due on Fridays at 6pm | Website | You solve the problems on your own |
| **Programming Assignments** | Illustrate a programming or CS concept | Due on Sundays at 2pm | Website | You solve the problem from scratch, on your own computer |

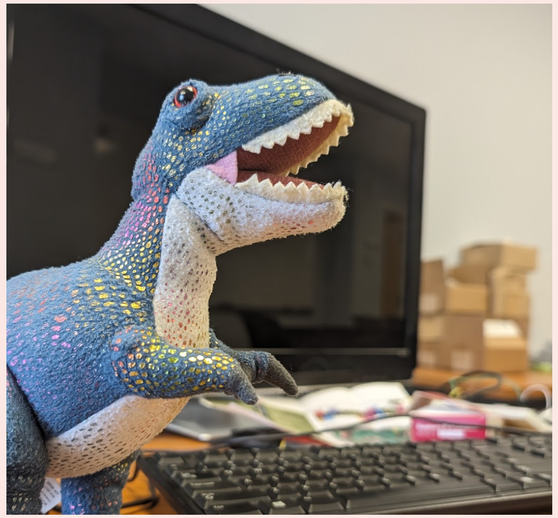
# Intro to COS 125: quiz 1

iClicker (required). To earn participation credit:

- Create iClicker Cloud account.
- Answer multiple choice questions during lecture.

*https://www.iclicker.com/*

**Which dinosaur is cuter?**



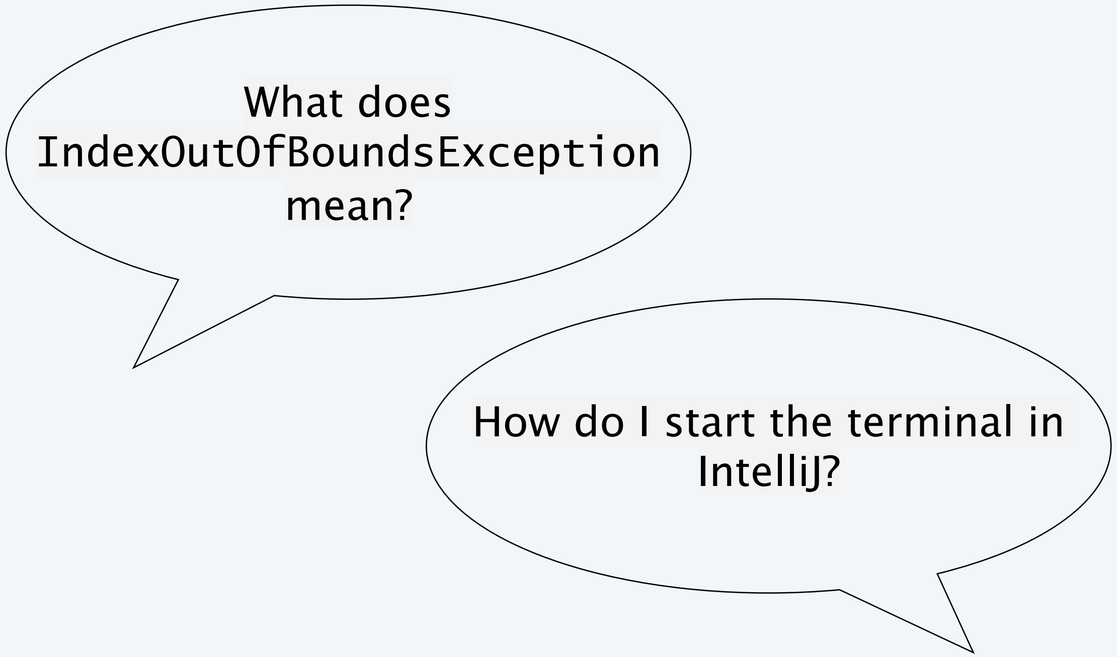
**A. Barney**

**B. Ryan**

# Collaboration Policy

## Executive Summary.

- Do discuss concepts with others.
- Do acknowledge any collaboration with others.
- Do partner with a classmate (when appropriate).
- Do not copy code from others.
- Do not share solutions to quiz questions.




```
Programming Assignment 4: Arrays



/*************************************************************************
 *  Describe whatever help, if any, that you received on this assignment.
 *     - Include help from people, including course staff, lab TAs,
 *       classmates, and friends. Attribute them by name and include the
 *       date(s) on which they helped you.
 *     - Do not include course materials (such as the course textbook,
 *       lectures, and class meetings).
 *     - Write "none" if you did not receive any help.
 *  Here is an example:
 *
 *      9/16/22 Grace Hopper     (faculty)
 *      9/16/22 John von Neumann (course fellow)
 *************************************************************************/

[write the dates and help received here]
```

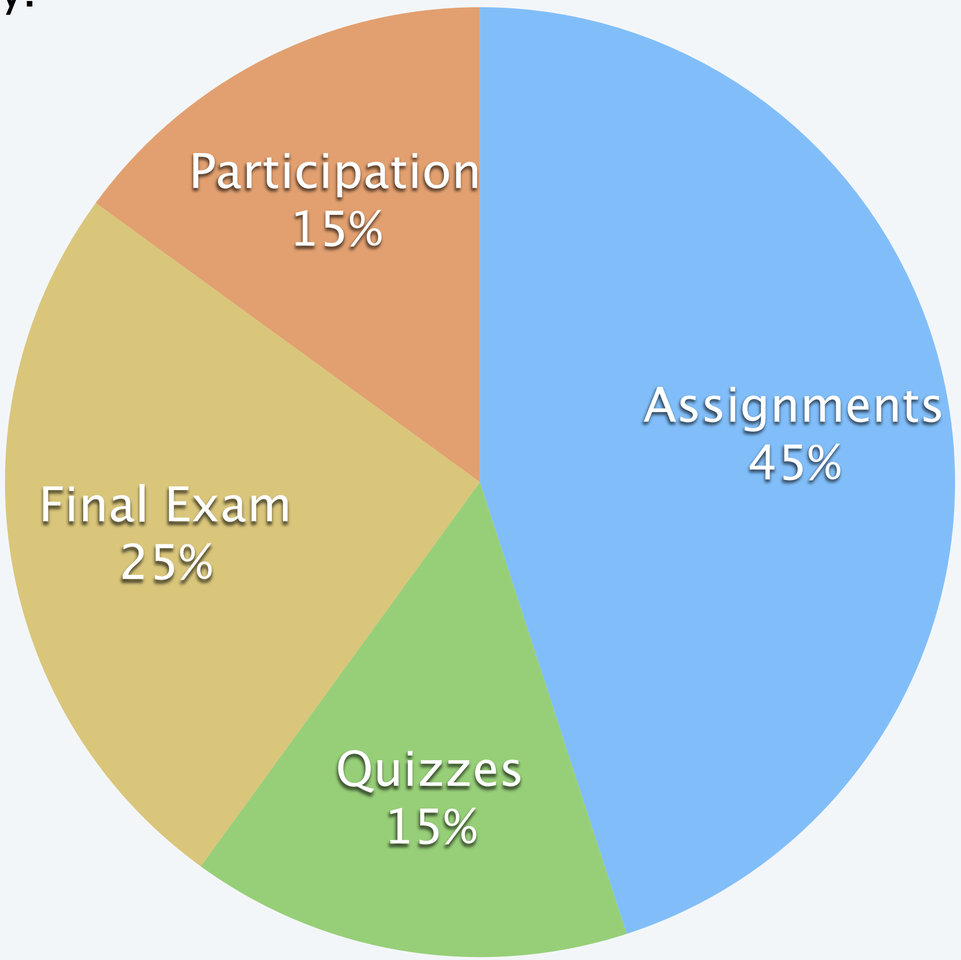
# Grading

Programming Assignments (45%). Six of them, assigned weekly.

Quizzes (15%). Six of them, assigned weekly.

Final Exam (25%). Date TBD.

Participation (15%). Attendance (lectures and precepts).

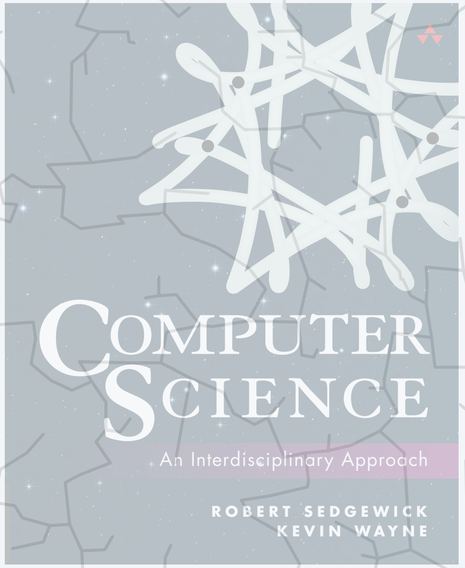


# A typical week (except this one)

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 30 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8<br>**Lecture** | 9<br>**Precept** | 10<br>**Lecture** | 11<br>**Precept** | 12<br>**Lab**<br>**Quiz (due 6pm)** | 13 |
| 14<br>**Assignment (due 2pm)** | 15 | 16 | 17 | 18 | 19 | 20 |

# This week (a unique week)

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 30 | 1 | 2<br>**Lecture** | 3<br>**Precept** | 4 | 5<br>**Lab**<br>**Quiz (due 6pm)** | 6 |
| 7<br>**Assignment (due 2pm)** | 8<br>**Lecture** | 9<br>**Precept** | 10<br>**Lecture** | 11<br>**Precept** | 12<br>**Lab**<br>**Quiz (due 6pm)** | 13 |
| 14<br>**Assignment (due 2pm)** | 15 | 16 | 17 | 18 | 19 | 20 |

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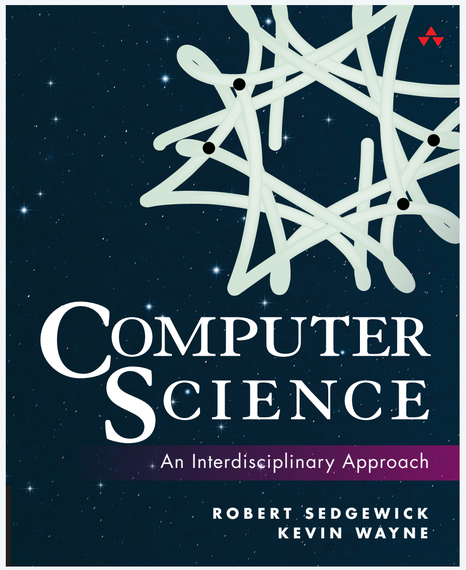
# Textbook

Readings. *Computer Science: An Interdisciplinary Approach* by

R. Sedgewick and K. Wayne, Addison-Wesley Professional, 2016.




ISBN 978-0134076423

# Web resources

Course website.

- Syllabus and course policies (please read).
- Lecture slides.
- Precept worksheets and projects.
- Quizzes and programming assignments.

*https://www.cs.princeton.edu/~cos125*

Booksite.

- Download code from book.
- Brief summary of content.

*https://introcs.cs.princeton.edu/java/home/*

# More resources

## Ed online discussion forum.

- Asynchronous questions.
- Mark posts private when necessary.
- Please use Ed, not email.

*https://edstem.org/us/courses/58733*

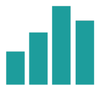
## Office hours.

- Longer discussions.
- See course website for schedule.

## Classmates.

- Discuss ideas.
- Partner on programming assignments.

# Even more resources

| resource | | purpose |
|---|---|---|
| | **IntelliJ** | Java IDE |
| | **TigerFile** | Assignment submissions |
| | **PrairieLearn** | Quizzes |
| | **CodePost** | Assignment feedback |
| | **Canvas** | Check grades |
|  | **Gradescope** | Final exam feedback |

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