CSE 121 Lesson 19:
Final Exam Review & Victory Lap!

Matt Wang
Spring 2024

TAs: Andy Anju Archit Arkita Autumn Christian
Hannah H Hannah S Heather Hibbah Janvi Jessie
Jonus Julia Luke Maria Mia Ritesh
Shayna Simon Trey Vidhi Vivian Gumball?

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Today’s playlist:
CSE 121 lecture beats 24sp
Announcements, Reminders

• R7 due June 6th – all assignments eligible!
• today is the last day for IPL + instructor office hours
• Final Exam: **Wednesday, June 5th from 2:30-4:20 in KNE 120**
• TA-led Review Session: **Monday, June 3rd from 4:30-6:50 in JHN 102**
• other exam reminders:
  • please look at seating charts and let me know ASAP if you’re not there!
  • review [Exam Resource Bank](#)

Lesson 19 - Spring 2024
Evaluations and Awards

• Course Evals are due **Sunday, June 2nd at 11:59 PM**
  • currently just 16% (36/219) – we can do better than that :’)

• CERSE survey – please see Dan Grossman’s email!
  • This is a different kind of feedback from course evals

• Bob Bandes TA Award nominations open!
Applications of CS

or “What can I do with what I learned?” – outside of just “write code”:

• Detect and prevent toxicity online & recognize disinformation
• Help deaf & hard-of-hearing people identify sounds
• Develop a programming language that celebrates the world’s languages
• Build battery-free robots & put them on insects (and... track murder hornets?)
• Computational knitting & carpentry
• Create an interactive atlas of millions of refugee experiences
• Fix Olympic badminton & identify cheating in chess
• and so much more!
... including your projects! (1/2)

- Computational Biology & Medicine (P2, P3)
  - fun fact: Matt did some DNA sequencing (P3+++ in grad school at UCLA!
  - at UW: Chris Thachuk, Linda Shapiro, Sara Mostafavi, Sui-In Lee; BIME & Med!
- Turtle (C0, C1)
  - fun fact: maps well to stitching & embroidery or laser cutting!
  - at UW: “Cultural-Centric Computational Embroidery”, CSE + iSchool, SIGCSE ’24
... including your projects! (2/2)

• Games & Graphics (C1, C3):
  • fun fact: Foldit (from UW) is a crowd-sourced game for protein folding!
  • at UW: many labs in CSE and iSchool’s GAMER group

• Social Computing (P1, C2):
  • at UW: Amy Zhang’s Social Futures Lab + so much of iSchool!
  • and many side quests (in lecture, section, PCM): accessibility (e.g. UW CREATE), weather forecasting, chatbots, software tools, and lots of math
# Future Courses

or “What can I do next?”

## Non-majors

<table>
<thead>
<tr>
<th>Course</th>
<th>Overview</th>
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<tbody>
<tr>
<td>CSE 154</td>
<td>Intro. to web programming (several languages)</td>
</tr>
<tr>
<td>CSE 160</td>
<td>Intro programming, data analysis (Python)</td>
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<tr>
<td>CSE 163</td>
<td>Intermediate programming, data analysis (Python)</td>
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<tr>
<td>CSE 180</td>
<td>Introduction to data science (Python)</td>
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<tr>
<td>CSE 373</td>
<td>Data structures and algorithms (in Java)</td>
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<tr>
<td>CSE 374</td>
<td>Low-level programming and tools (C/C++)</td>
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<tr>
<td>CSE 412</td>
<td>Intro to Data Visualization</td>
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<tr>
<td>CSE 416</td>
<td>Intro. to Machine Learning</td>
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## Majors

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<tr>
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<tbody>
<tr>
<td>CSE 311</td>
<td>Mathematical foundations</td>
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<tr>
<td>CSE 331</td>
<td>Software design/implementation</td>
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<tr>
<td>CSE 340</td>
<td>Interaction programming (mobile apps)</td>
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<tr>
<td>CSE 341</td>
<td>Programming languages (!!)</td>
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<tr>
<td>CSE 351</td>
<td>Low-level computer organization/abstraction</td>
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## Other tech-related majors:
- Informatics
- ACMS
- HCDE
- Electrical & Computer Engineering, …

More 12X!

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<tbody>
<tr>
<td>CSE 122</td>
<td>Introduction to Computer Programming II</td>
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<tr>
<td>CSE 123</td>
<td>Introduction to Computer Programming III</td>
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Frequently Asked Questions

• How can I get better at programming?
  • Practice!

• How can I learn to X?
  • Search online, read books, look at examples :)

• What should I work on next?
  • Anything you can think of! (Here are some ideas)
  • Beware: it’s hard to tell what’s easy and what’s hard.

• Should I learn another language? Which one?
  • That depends—what do you want to do?

• What’s the best programming language?
  • 😊 (take CSE 341 or CSE 413)
Aside: Cute Programming Language Logos
Summer Project: Tic Tac Toe (1/2)

Build your own Tic Tac Toe game (and “AI”)!  

1. How would you represent a Tic Tac Toe game in Java?  
   (hint: arrays will be very, very helpful!)
2. Write a method that tells you if a Tic Tac Toe game is won (or playable).
3. Write a method that gets input from the user and “makes” a move.
4. Wrap it up all up – into a nice two-player game!
Summer Project: Tic Tac Toe (2/2)

Wait, there’s more!

Make some “AI” that...
• just makes a random valid move (you should be able to beat this!)
• tries to make a “good” move (~ some if statements)
• never loses
  • Tic Tac Toe is a “solved game”: a perfect player will never lose.

Or, extend this idea to other grid-based games!
• similar-ish: connect four, checkers, battleship
• much harder: sudoku, chess, go, othello
Thank your **lovely** TAs!!!!!!
Thank you!

Ask Me (Almost) Anything!

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