CSCI 132:
Basic Data Structures and Algorithms

Syllabus and Logistics

Reese Pearsall & Iliana Castillon

Fall 2024

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- Code (a lot)
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- Learn a variety of **algorithms** for searching and sorting
- Analyze the complexity and runtime of the algorithms that we write

Reese Pearsall (pierce-all)

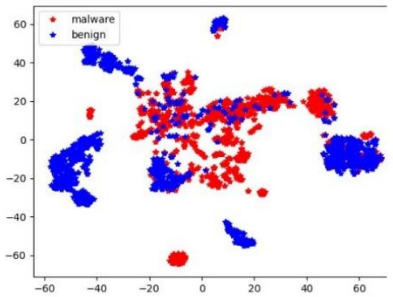
Third year Instructor @MSU
B.S & M.S @ MSU

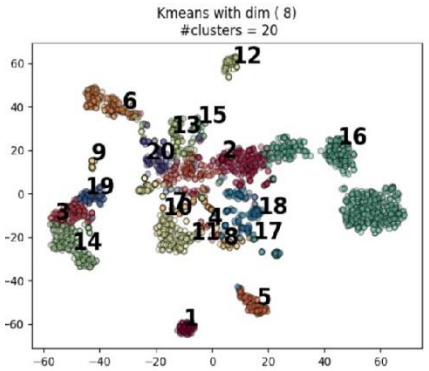
Interests
- Cybersecurity
- Malware analysis and detection
- Cybercrime
- Computer Science Education

Hometown
- Billings, MT

Teaching
- CSCI 132
- CSCI 466 (Networks)
- CSCI 476 (Cybersecurity)

Spirit Animal
- Capybara



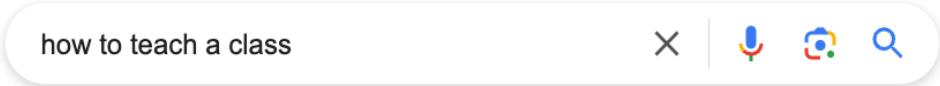


Experience
- Software Engineer and Tester, Techlink (Bozeman)
- Software Engineer, United States Air Force (Hill AFB, Utah)
- Cybersecurity Software Engineer, Hoplite Industries (Bozeman)
- Graduate Researcher, MSU (Bozeman)

Outside of academia
- Video games, New England Patriots, Fantasy Football, ~~TikTok~~, Garfield, Dr Pepper, Memes, *The Bachelor*, Naps

Iliana Castillon

First year Instructor @ MSU Google



B.S. & M.S @ Colorado State University

🐏

Experience

- Software Engineer, Arity (Chicago, IL)
- Software Engineer (V&V), Medtronic (San Diego, CA)
- Graduate Researcher (Fort Collins, CO)

Interests

- Affective computing
- ML
- CS Education

Other Interests

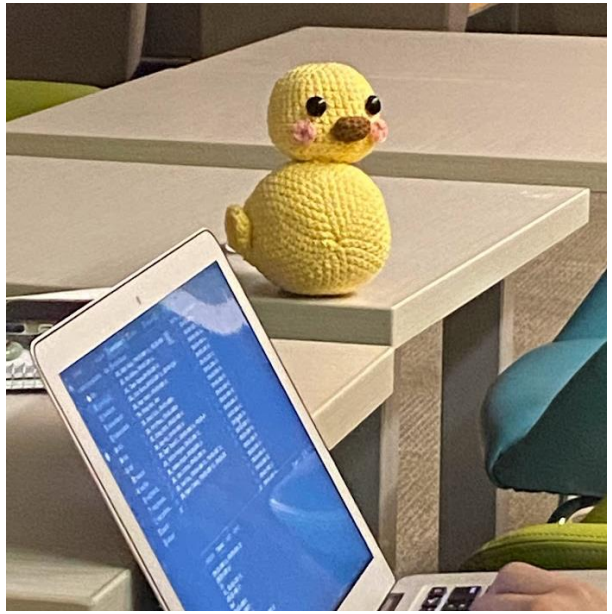
- Knitting & crocheting
- Skiing
- Being outside
- Getting yelled at by my cat ->

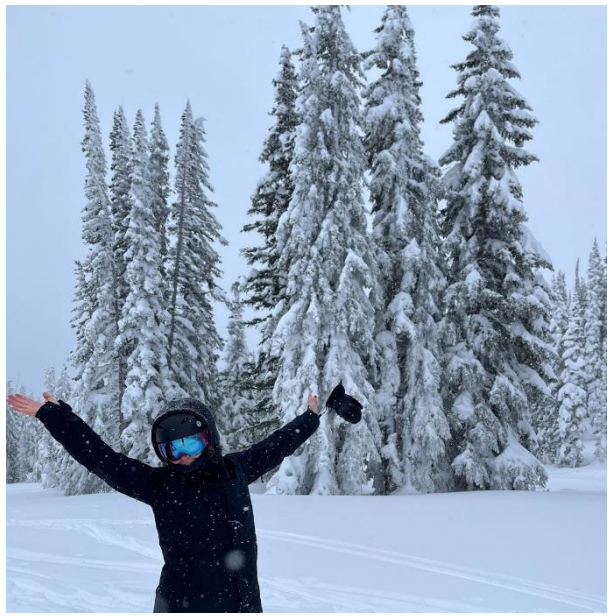
Hometown

- Carbondale, CO

Co-teaching

- This class (CSCI 132)
- CSCI 107
- CSCI 127



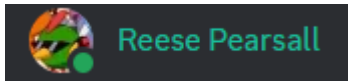


Contact

Email: reese.pearsall@montana.edu

Office Hours: Monday, Wednesday, Thursday, Friday 1:00 PM – 2:00 PM

Office: Barnard Hall 361

Discord: @reese_p 

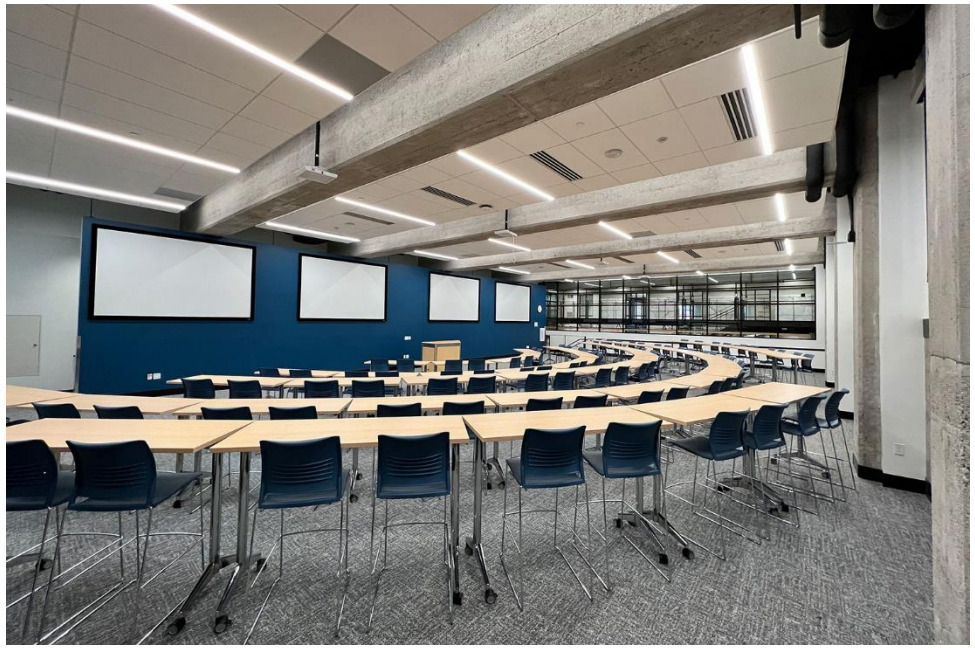
Email: iliana.castillon@montana.edu

Office Hours: Monday, Wednesday, Friday 11:00 AM – 12:00 PM

Office: Barnard Hall 351

Discord: @ilianana na

Course Logistics (Lecture)



Class Meetings

MWF: 3:10 – 4:00 PM

Romney Hall 008

- All lectures will be recorded and posted on the course website (coming to class is still a good idea)

- We will be doing lots of live coding during lecture, so it might be helpful if you bring your own laptop to class (if you would like to code along)

- Please be respectful and considerate of your classmates siting around you

Course Logistics (Lab)

- Section 001- Thursdays 10:00 - 11:50 AM
- Section 002- Thursdays 12:00 - 2:00 PM
- Section 003- Thursdays 2:10 - 4:00 PM
- Section 004- Thursdays 4:10 - 6:00 PM

Locations: Roberts 111

- You can go to lab and get help from your TA and lab assistants
- Lab attendance is **optional**
- Lab assignments will be posted a few days before Thursdays and can be completed from home.
- You can attend a different lab section earlier/later in the day if you would like

Course Logistics

You will be visiting this website a lot… be sure to bookmark it!

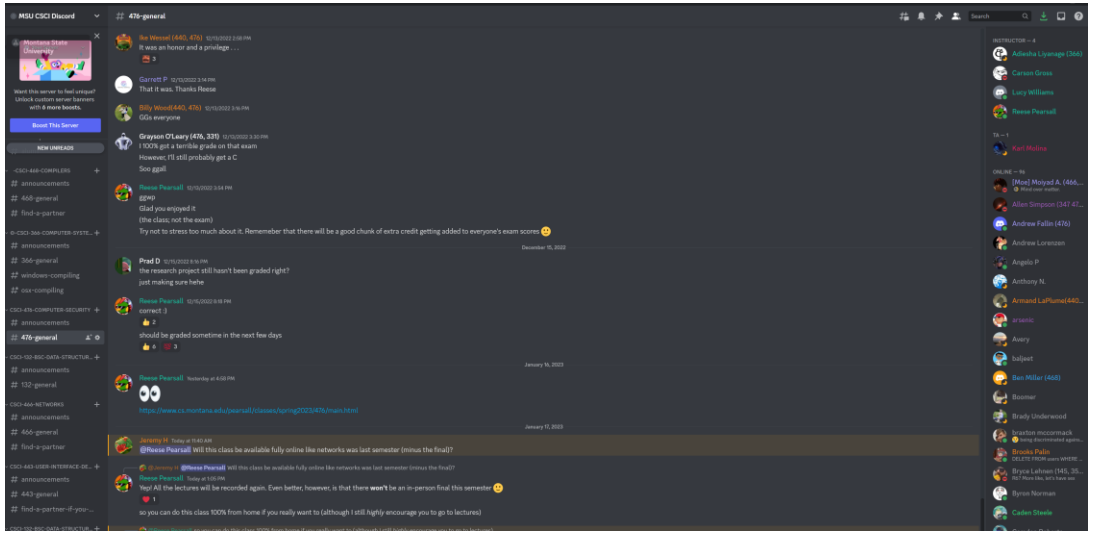
https://www.cs.montana.edu/pearsall/classes/fall2024/132/main.html

CSCI 132: Basic Data Structures and Algorithms

Fall 2024

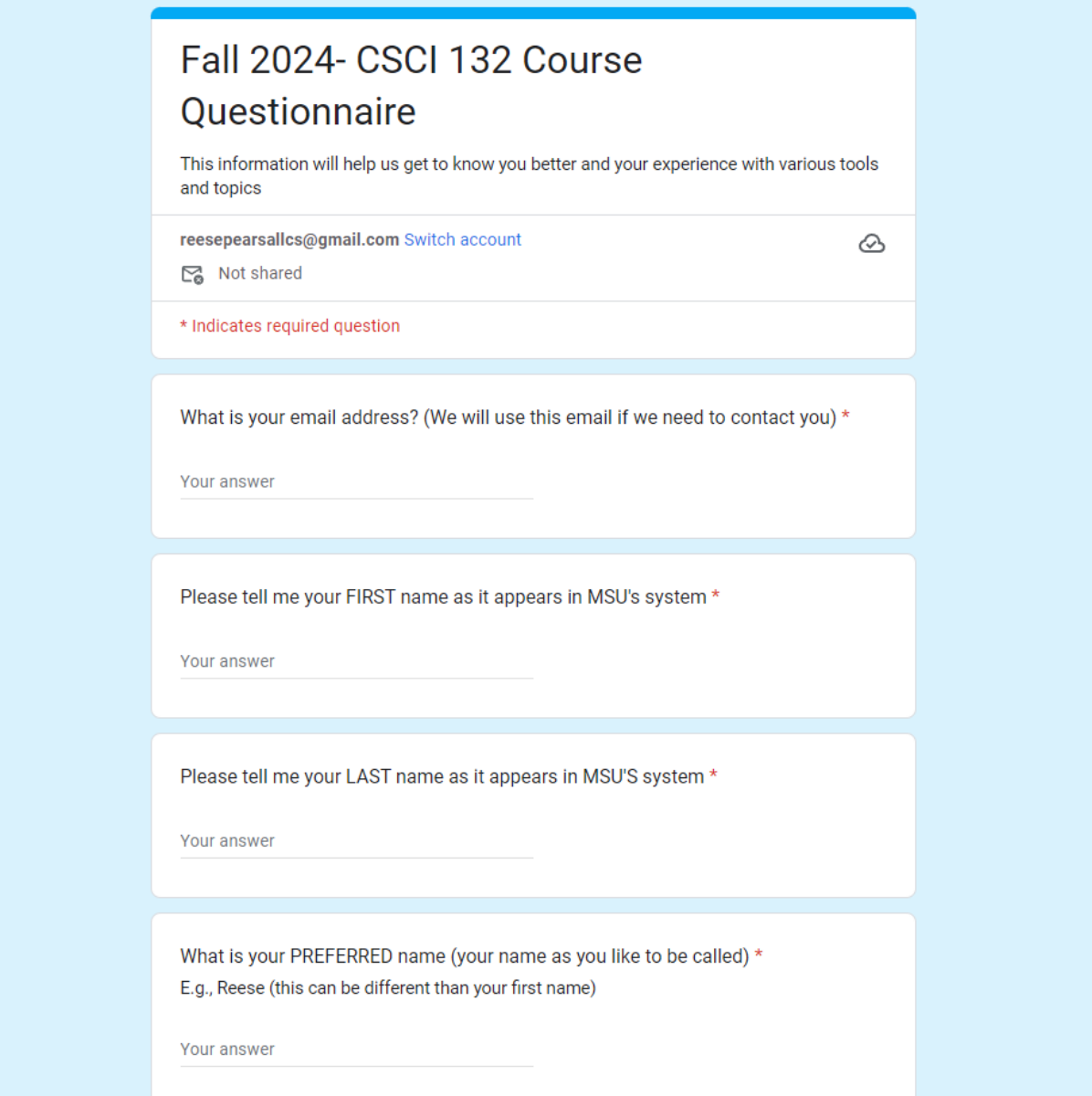
Date	Topic	Extra Notes	Class Content	Assignment
Unit 1: Java Introduction (Reese)				
Wednesday August 21st	Syllabus	Eclipse IDE Installation Tutorial		Please Fill out the Course Questionnaire!
Thursday August 22nd	No lab!			Get IDE Installed
Friday August 23rd	Python to Java (Variables, Data Types, Operations)			
Monday August 26th	Python to Java (OOP, Functions/Method, If Statements)			
Wednesday August 28th	Python to Java (Loops, Arrays)			
Thursday August 29th	Lab 1 (Basic Java)			
Friday August 30th	File I/O			
Monday September 2nd	NO CLASS			
Wednesday September 4th	More Java			
Thursday September 5th	Lab 2 (More Java)			
Friday September 6th	Program 1, References, Debugging			
Unit 2: Java Object Oriented Design (Iliana)				
Monday September 9th	Inheritance			
Wednesday September 11th	Interfaces			
Thursday September 12th	Lab 3 (Inheritance)			
Friday September 13th	Polymorphism, Static Methods			

You also will need to join our **Discord** server!



Course Questionnaire

Please take some time this week to fill out the course questionnaire ☺



Fall 2024- CSCI 132 Course Questionnaire

This information will help us get to know you better and your experience with various tools and topics

reesepearsallcs@gmail.com Switch account

Not shared

* Indicates required question

What is your email address? (We will use this email if we need to contact you) *

Your answer

Please tell me your FIRST name as it appears in MSU's system *

Your answer

Please tell me your LAST name as it appears in MSU'S system *

Your answer

What is your PREFERRED name (your name as you like to be called) *

E.g., Reese (this can be different than your first name)

Your answer

Prerequisites

- CSCI 127- Joy and Beauty of Data
- M151Q- Precalculus*

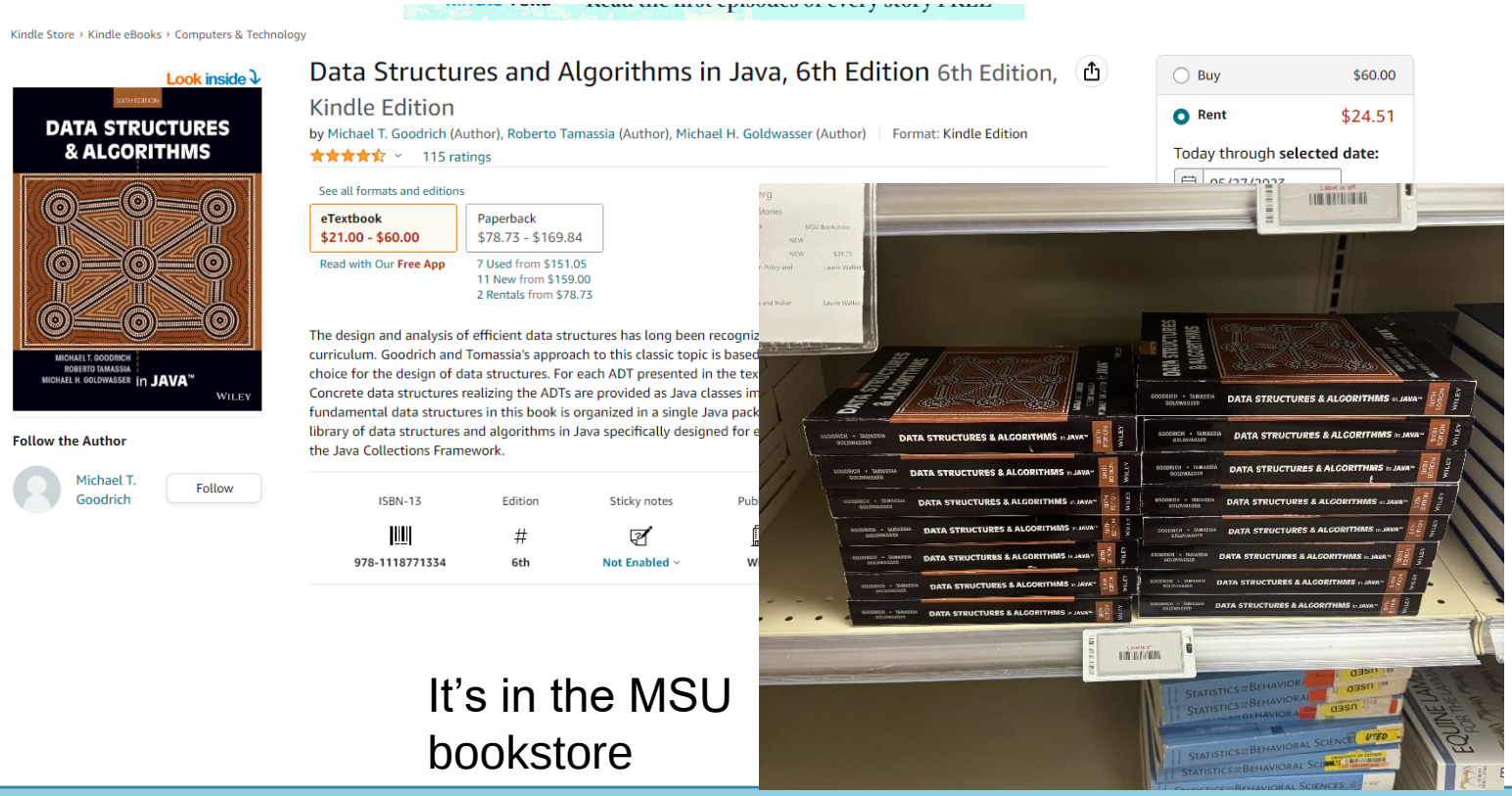
*(you will be fine if you have not completed M151Q)

If you failed CSCI 127, you should **not** be here

You should feel comfortable with basic programming constructs:
(functions, variables, loops, if statements, lists, etc)

Textbook

[Data Structures and Algorithms in Java, 6th Edition by Goodrich, Tamassia, and Goldwasser]



It's in the MSU bookstore

unfortunately, a very relatable meme

This textbook is **not** required
(but it does have tons of great stuff!!)

Grading

- 30% - Labs (12 @ ~3% each)
- 40% - Programs (5 @ 8% each)
- 15% - Midterm
- 15% - Final Exam

Grading

Labs (30%)

- Shorter, weekly assignments.
- Can generally be finished within 1-2.5 hours
- Due on Thursday nights @ 11:59 PM
- I will post the labs a few days ahead of time
- You should be able to finish within your 2hr lab time
- I will drop your lowest lab grade at the end of the semester
- Individual submissions

Grading

Programs (40%)

- Longer, more complicated programming assignments
- Will likely take 2+ hours to complete
- You will always have 2-3 weeks to complete them
- Much higher stakes, make sure you give yourself plenty of time to complete them
- You can get help from your TA during lab time or office hours
- You are allowed to work with 1 partner

Grading

Exams (Midterm and Final) (30%)

Midterm: Wednesday October 9th
Final: Monday December 9th

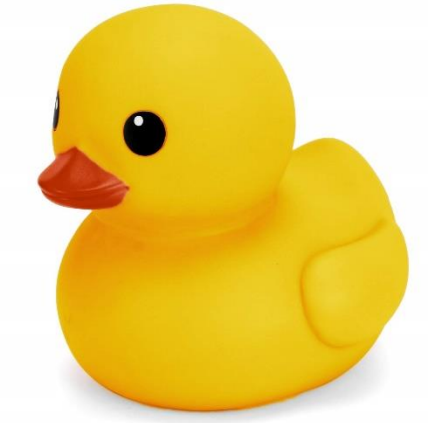
- Exams consist of short answer, multiple choice, true/false, and some small coding problems

- You are allowed to use your laptop and any notes

Extra Credit

Rubber Duck Extra Credit (1%)

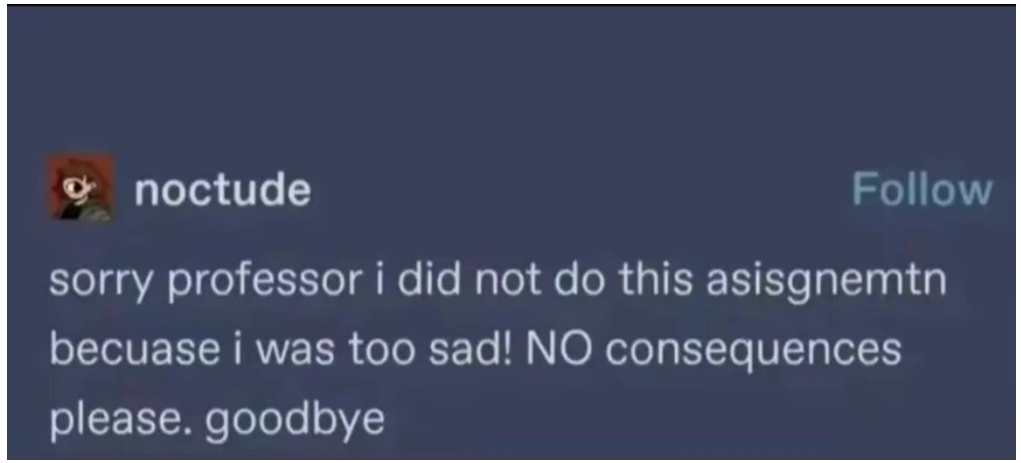
- I will give you a rubber duck to take care of during the semester (September 6th)
- If you still have the rubber duck by the end of the semester, and if it is still alive, I will give you extra credit



Late assignment policy

- If you submit late, but you are within < 24 of the original deadline, you will face a -25% penalty
- If you submit late, but you are within < 48 of the original deadline, you will face a -50% penalty

Any assignment submitted 48+ hours after the deadline will **not** be accepted



Grading Scale

- 93+: A
- 90+: A-
- 87+: B+
- 83+: B
- 80+: B-
- 77+: C+
- 73+: C
- 70+: C-
- 67+: D+
- 63: D
- 60: D-

At the end of the semester, if you are within 1% of the next letter grade, I will bump you up

I will not curve exams or final grades unless it is needed

IDE

You will need to download an IDE that you can write Java programs in

- Eclipse (I will use this one)
- Netbeans
- IntelliJ

I will post a video walking you through the installation process ☺

Plagiarism and cheating is very not cool

You are **not** allowed to submit something that is not your own, and you are **not** allowed to steal solutions from another person and modify it

I have a Chegg and Course Hero membership. **Don't try it**

Do not use any tools or AI that will write code for you

Using small snippets of code from the internet is acceptable *(but should not be needed).* If you do use a small snippet of code from the internet, you should leave a reference as a comment in your code

Collaboration Policy

All labs will be individual submissions.
For programs, you are allowed to work with **one** partner.

When it comes to labs, you *may*

- Share ideas with other students in the class.
- Work together on labs in the same physical location.
- Help other students troubleshoot problems.
- Give hints or provide textbook page numbers/slide numbers to students seeking help

You may *NOT*

- Share your code and solutions directly with other students.
- Submit solutions that you did not write.
- Modify another student's solution and claim it as your own.
- Share your report or solutions directly on Discord

Additional MSU Resources:

https://www.cs.montana.edu/pearsall/classes/msu_resources.html

Diversity Statement

Montana State University's campuses are committed to providing an environment that emphasizes the dignity and worth of every member of its community and that is free from harassment and discrimination based upon race, color, religion, national origin, creed, service in the uniformed services (as defined in state and federal law), veteran's status, sex, age, political ideas, marital or family status, pregnancy, physical or mental disability, genetic information, gender identity, gender expression, or sexual orientation. Such an environment is necessary to a healthy learning, working, and living atmosphere because discrimination and harassment undermine human dignity and the positive connection among all people at our University. Acts of discrimination, harassment, sexual misconduct, dating violence, domestic violence, stalking, and retaliation will be addressed consistent with this policy.

Inclusivity Statement

I support an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. We expect that students, faculty, administrators and staff at MSU will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors, and worldviews may be different from their own.

Counseling

In addition to eating right, taking breaks when you need them, and getting enough sleep, you may benefit from talking to a professional counselor if you think stress could be impacting your health. Here is a blurb and some links from MSU's Counseling & Psychological Services: MSU strives to create a culture of support and recognizes that your mental health and wellness are equally as important as your physical health. We want you to know that it's OK if you experience difficulty, and there are several resources on campus to help you succeed emotionally, personally, and academically:

- Counseling & Psychological Services: montana.edu/counseling
- Health Advancement: montana.edu/oha
- Insight Program (Substance Use): montana.edu/oha/insight
- Suicide Prevention: montana.edu/suicide-prevention
- Medical Services: montana.edu/health/medical.html
- WellTrack: montana.welltrack.com/register

Civil Rights

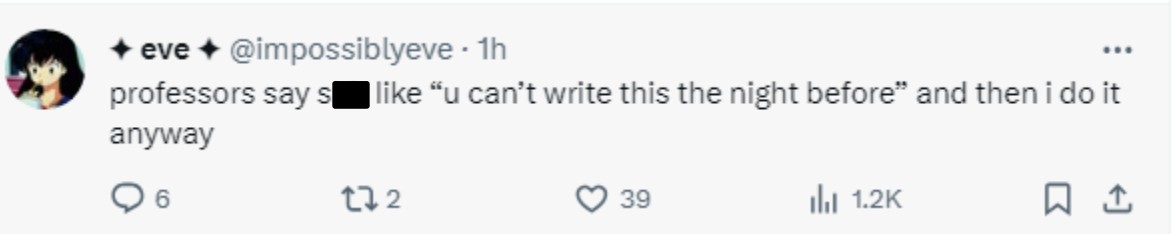
There should be no discrimination or harassment for anyone at MSU. If you notice anything that seems to violate that principle, the Office of Institutional Equity can help. As an employee of MSU, I am a mandatory reporter, which means if I learn of any discrimination or harassment at MSU, I am obligated by my contract to report it.

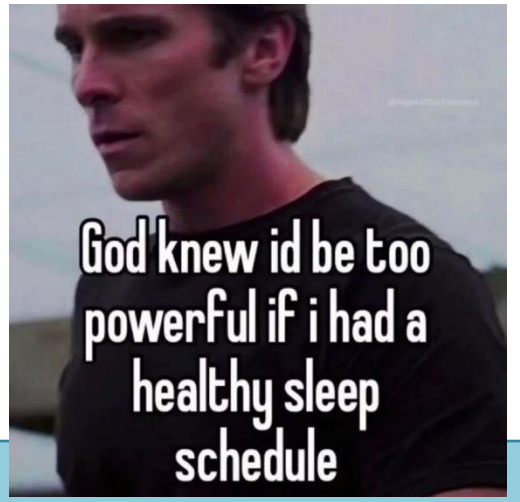
Hamilton Hall, Offices 114, 116, and 118

"Not everyone can become a great artist, but a great artist can come from anywhere"

How to do well in this class

- The first few weeks of this class move fast, and it can be easy to get behind.
  Get help when you need it
- Get started on assignments early (especially programs)!
- Come to class and office hours
- Take care of yourself





Questions?