# CSCI 132:
# Basic Data Structures and Algorithms

Lecture 1: Syllabus, and Logistics

Reese Pearsall

Spring 2023

# Our Goals for this Semester


- Code (a lot)
- Learn a new programming language (**Java**)
- Explore the endless possibilities of **Object-Oriented Programming** (OOP)
- Learn a variety of **Data Structures** that we can use in our programs
- Learn a variety of **algorithms** for searching and sorting
- Analyze the complexity and runtime of the algorithms that we write

# Reese Pearsall (pierce-all)

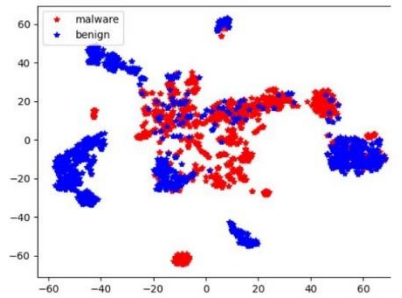
**First year Instructor @MSU**
**B.S & M.S @ MSU**

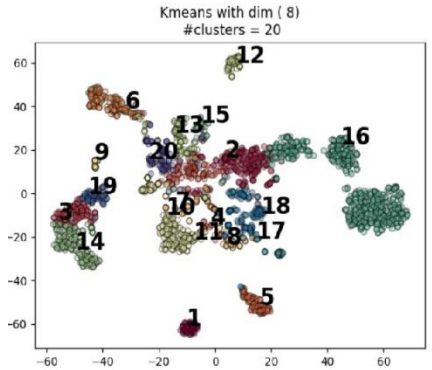
### Interests
- Cybersecurity
- Malware analysis and detection
- Cybercrime
- Computer Science Education

### Hometown
- Billings, MT

### Teaching
- CSCI 132
- CSCI 476

### Favorite Ice Cream
- Neapolitan & Strawberry




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

### Outside of academia
- Video games, New England Patriots, Fantasy Football, ~~TikTok~~, Movies, Memes, *The Bachelor*, Naps

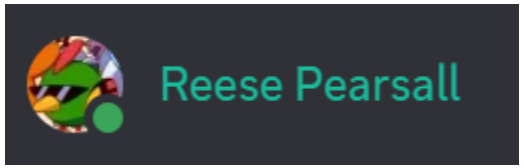
# Contact


**Email**: reese.pearsall@montana.edu (I will respond as soon as I can)

**Office Hours**: Monday Wednesday Friday 1:00 – 2:00 PM
Tuesdays 11:00 – 11:50 AM, 1:00 – 2:00 PM

**Office**: Barnard Hall 361

I am also very responsive on Discord! (Reese#7171)



# Course Logistics (Lecture)

## Class Meetings

MWF: 3:10 – 4:00 PM

Norm Asbjornson Hall 165

- All lectures will be recorded

- 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 002- Tuesdays 8:00 - 9:50 AM
- Section 003- Tuesdays 10:00 - 11:50 AM
- Section 004- Tuesdays 12:00 - 2:00 PM
- Section 005- Tuesdays 2:10 - 4:00 PM
- Section 006- Tuesdays 4:10 - 6:00 PM

**Locations: Roberts 111**

- You can go to lab and get help from your TA and lab assistants
- You *should* go to lab, but I will never track attendance
- Lab assignments will be posted a few days before Tuesdays and can be completed from home.
- Please try to attend the lab section that you registered for, but if you need to attend another lab section for a legitimate reason, that is fine

# Course Logistics

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

https://www.cs.montana.edu/pearsall/classes/spring2023/132/main.html

## CSCI 132: Basic Data Structures and Algorithms

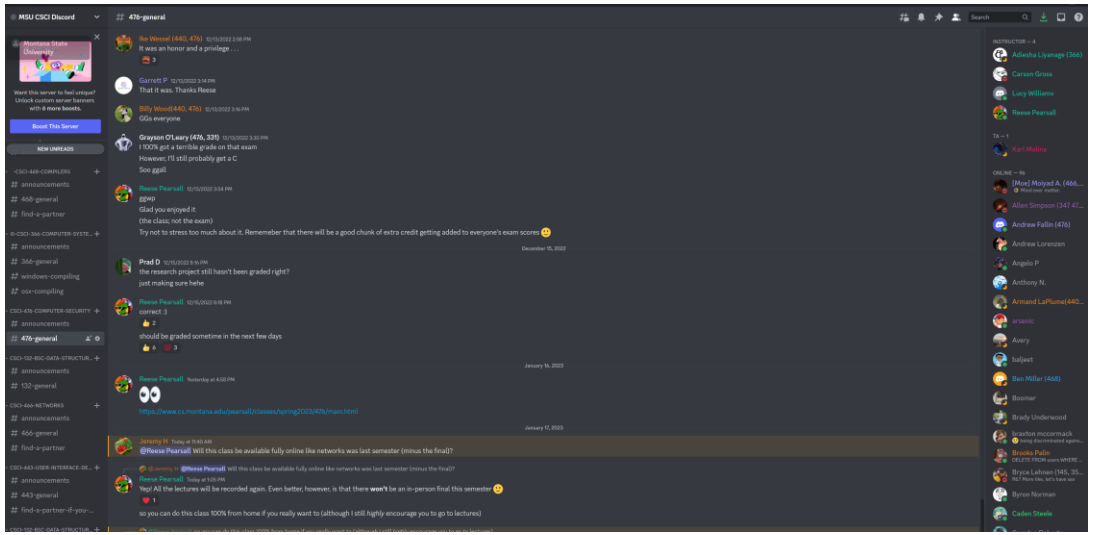
Spring 2023

Quick Links

-Syllabus

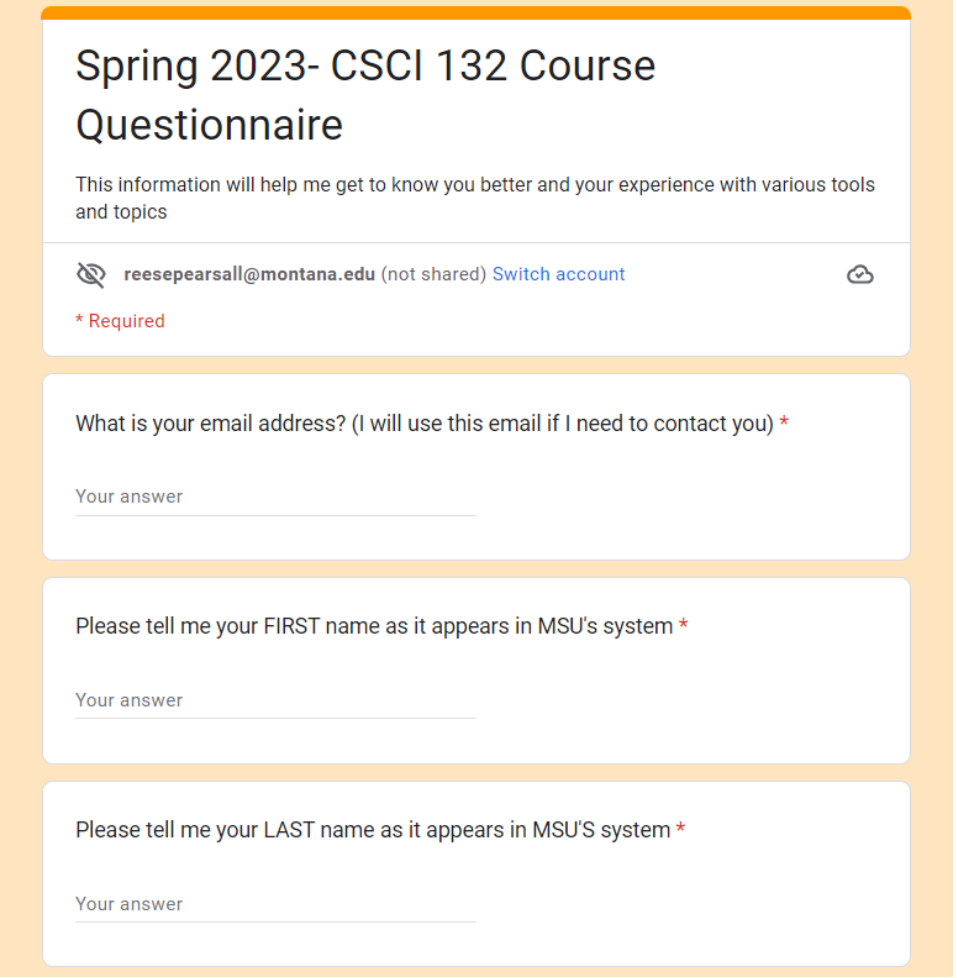
| Date | Topic | Reading | Slides + Lecture Recording | Assignment |
|---|---|---|---|---|
| Wednesday January 18th | Syllabus | | | Please fill out the course questionnaire |
| Friday January 20th | Computers and Objects | | | |
| Sunday January 22nd | | | | |
| Monday January 23rd | Python to Java | | | |
| Tuesday January 24th | Lab 1 (Basic Java) | | | |
| Wednesday January 25th | Python to Java | | | |
| Friday January 27th | Python to Java | | | |
| Sunday January 29th | | | | |
| Monday January 30th | OOP: References | | | |
| Tuesday January 31st | Lab 2 (Basic Java) | | | |
| Wednesday February 1st | OOP: Inheritance | | | |
| Friday February 3rd | OOP: Interfaces and Abstract Classes | | | |
| Sunday February 5th | | | | |

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



# Course Questionnaire

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



Spring 2023- CSCI 132 Course Questionnaire

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

reesepearsall@montana.edu (not shared) Switch account

* Required

What is your email address? (I will use this email if I 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

# Prerequisites

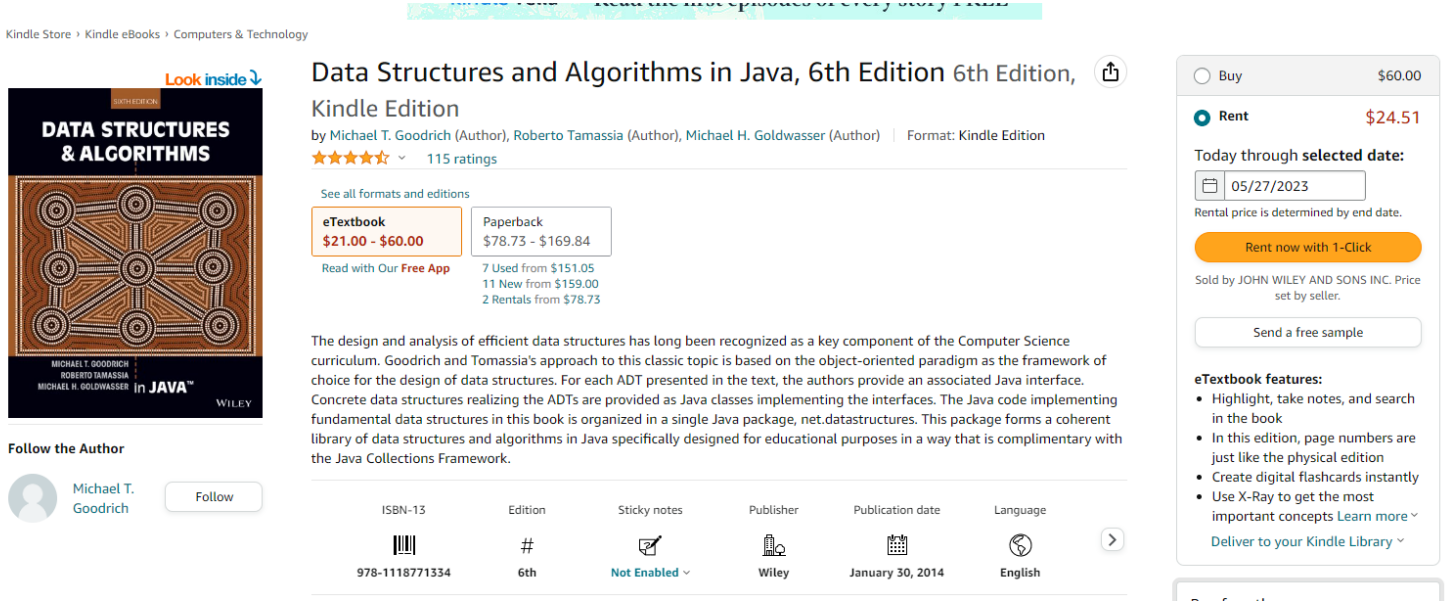
- CSCI 127- Joy and Beauty of Data
- M151Q- Precalculus*

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

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]





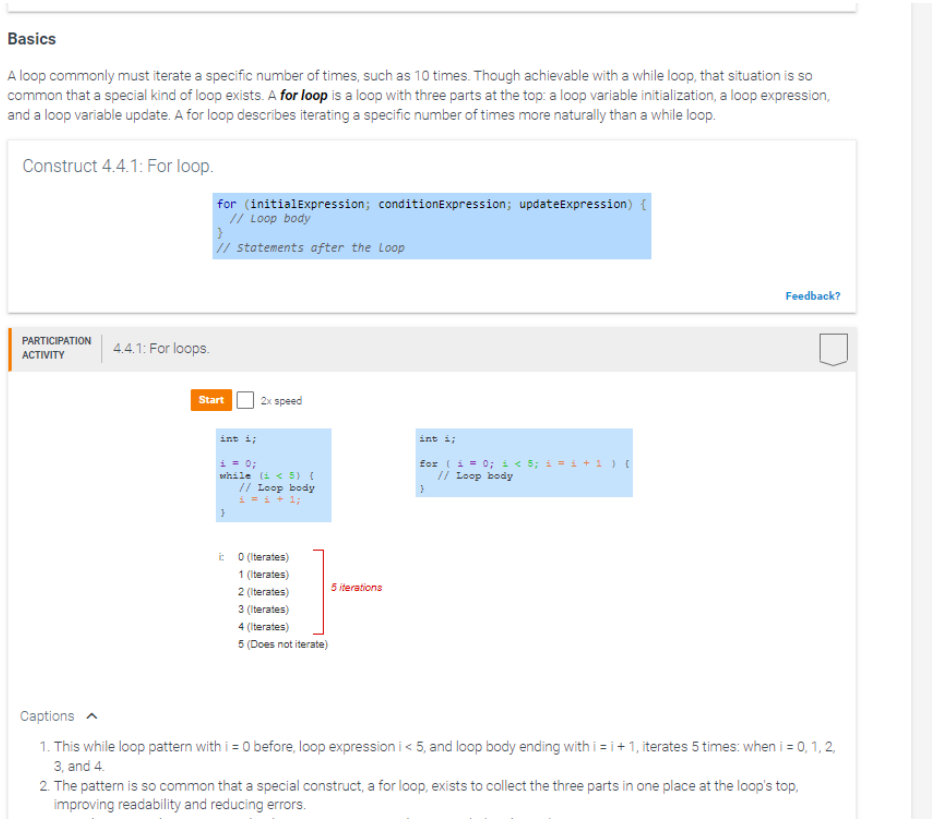
unfortunately, a very relatable meme

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

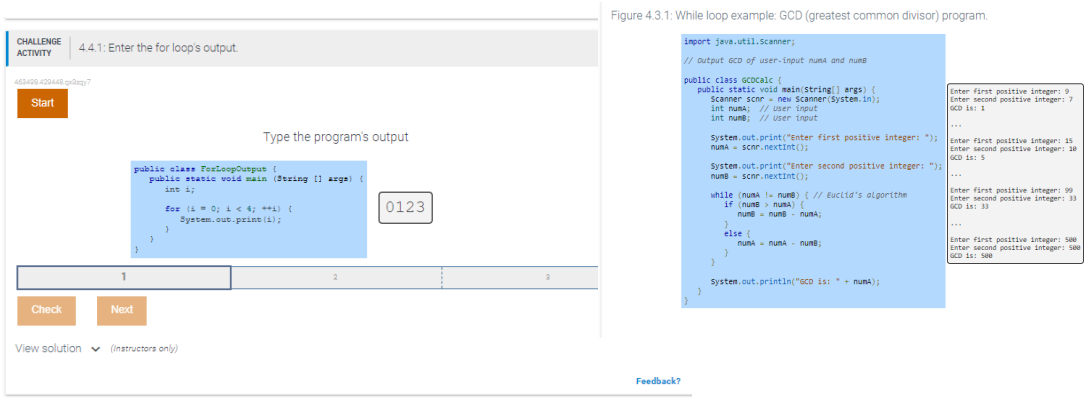
# Textbook

**Zybook** is a digital, interactive textbook

- Integrated Java Editor
- Helpful exercises and examples
- Helpful animations




1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code:
`MontanaStateUniviersityCSCI132Spring2023`
3. Subscribe ($58)




This textbook is **not** required
(but it has the reese stamp of approval™)

# Grading

- 40% - Labs (12 @ ~3% each)
- 40% - Programs
- 10% - Midterm
- 10% - Final Exam

# Grading

## Labs (40%)

- Shorter, weekly assignments.
- Can generally be finished within 1-2.5 hours
- Due on Tuesday 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
- Programs will usually be due on a Sunday at 11:59 PM
- 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, or from Reese, or on Discord
- You are allowed to work with 1 partner

# Grading

Exams (Midterm and Final) (20%)

Midterm: the Wednesday before spring break
Final: during finals week

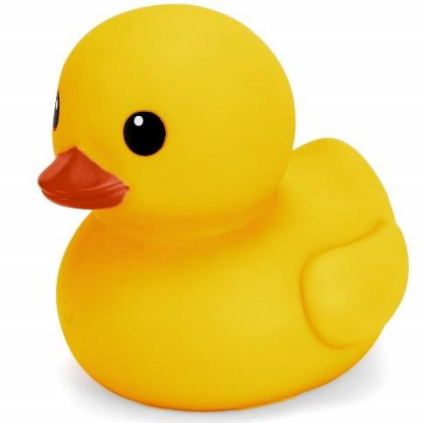
The exact logistics are TBD (I don't know if it will be entirely coding, or conceptual questions)

I will figure that out and make it very clear what you can expect on the exams beforehand ☺ (do not stress)

## Extra Credit

Rubber Duck Extra Credit (1%)

- I will give you a rubber duck to take care of during the semester
- 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



*There will likely be a couple other opportunities for extra credit*

# Late assignment policy

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

# 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

# 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

- **Try to have fun**

**I am here for you**, and I am willing to do whatever it takes to help you succeed!

# Questions?