Welcome to Introduction to Programming

CS 1112

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Spring 2024

Welcome to CS 1112!

In this course…
being kind, respectful, supportive, compassionate and mindful of others is *essential*.

Welcome to CS 1112!

Be an Active Participant in Your Learning!

Be Curious!

Ask Questions!

Announcements

- Check the course **Canvas** site for the Syllabus and Announcements
- Think you are already familiar with the fundamentals of programming? Consider taking the place-out test for CS 11xx!

- Waitlist
  - If you need CS 1112 – feel free to stay on the waitlist
  - Considering switching to CS 1110 or CS 1111? Please let us know – don't drop the course on your own unless you see an open lecture and lab spot (CS 1110) or open lecture spot for CS 1111.
- Note: being on a waitlist doesn't guarantee enrollment into a course
  - Your instructor cannot force your enrollment into a section that is already full
  - In rare circumstances, a dean or the registrar may be able to help

CS 111x place out and CS 1111 placement

- If you already know the material that we'll be covering, you may be able to place out of CS111x
- If you're not going to place-out, but know some programming, and want fewer weekly meetings, you could take CS1111, which meets only twice a week
- In either case, you can take the CS 111X Place-out Test
- After taking the online test, you'll be given 1 of 3 results:
  - Placed-out of CS111X, may move on to CS2100 if desired
  - Qualified for CS1111
  - Did not qualify for CS1111
- Don't open the test until you are ready to take it (have 60 minutes available).
- Use this link:
  - https://sherlock.cs.virginia.edu/?c=exam&e=339
- The test will be open through Tuesday night (11:59 PM on 1/23)

CS 1112 – Introduction to Programming

- Meeting Dates: January 17 – May 1, 2024
- Lecture / Location: **Sections 001 and 002**

Section	Days & Time	Location	Professor
001	M/W/F, 12:30-1:45pm	Olsson Hall 018	Nada Basit
002	M/W/F, 2:00-3:15pm	Olsson Hall 018	

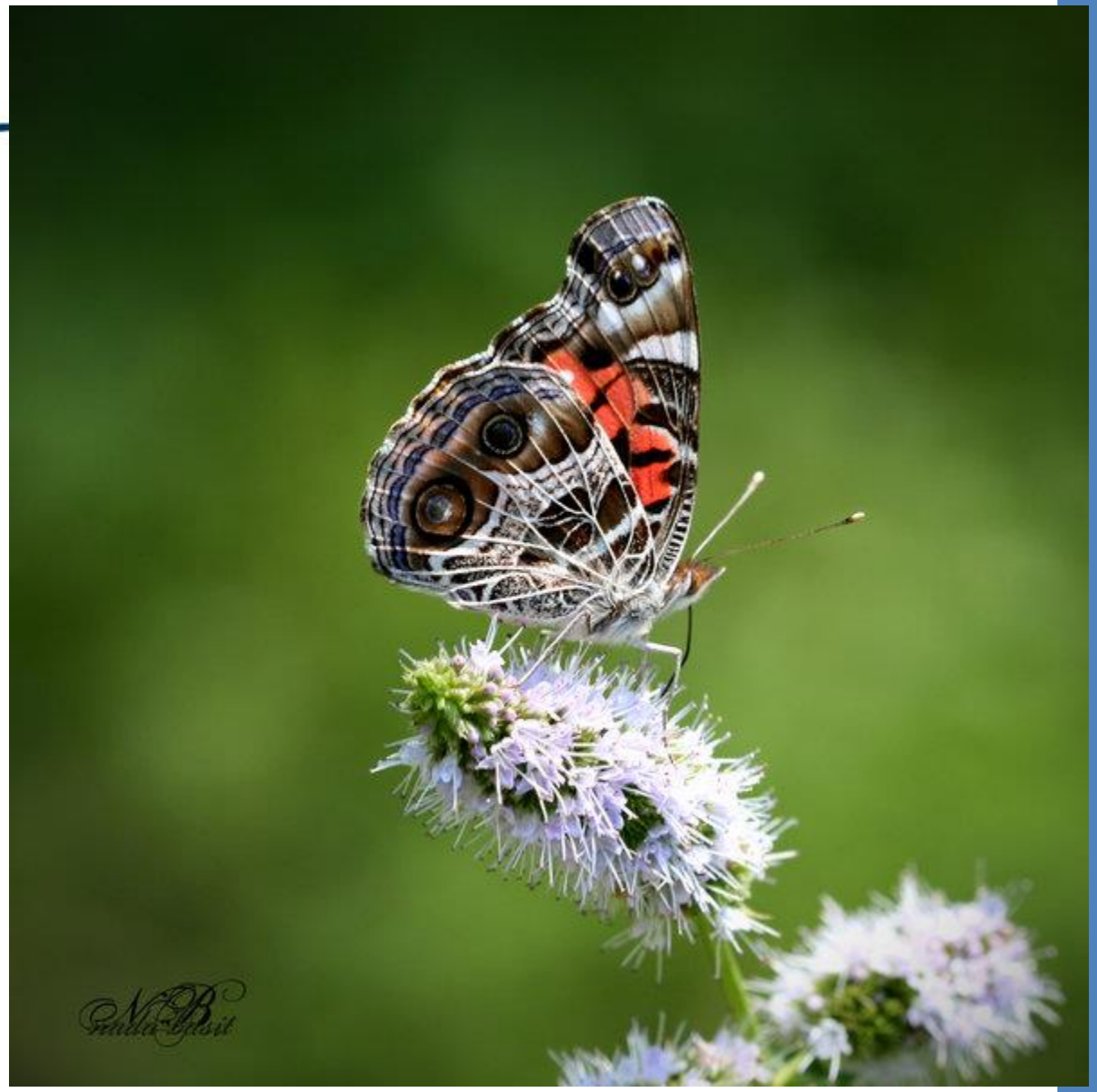
- Mode of instruction: In person
  - Lecture & Lab: *Course content* and *in-class "lab" activities* – *BRING YOUR LAPTOPS!*
  - Recommendation: *Bring a notebook and pen/pencil to class to take notes*
    - *Great way to summarize the material and becomes a great study aide*
  - Accessibility & Accommodations: *Happy to work with you to accommodate your needs; let's chat!*

Your Instructor

- **Dr. Nada Basit**
  - Office: Rice Hall 405
  - OH: Mon (10:30-12:00pm) and Tue (11:00-12:00pm) *in person*
  - basit@virginia.edu
    Best way to get in touch with me!
    (Always include "CS 1112" in email subject line)

Prof. Basit's Office Hours Challenge!

About Me
~Photography



~Photography

~My Background

- Education
  - PhD in Computer Science
  - Machine Learning + Biology/Genetics
    → Computational Mutagenesis
  - Graduate Certificate in Biometrics
- Areas of Interest
  - Artificial Intelligence (Machine Learning/Pattern Recognition/Data Mining)
  - Databases
  - Computational Biology
  - Computer Science Education
  - …and of course, TEACHING! ☺

I'd be happy to talk about any and all of these things!

Quick & Fun Survey Questions

Get to know your peers! ☺

PC vs. MAC?

Speaking of Laptops…

- This course requires students to have a laptop
- I realize that not everybody might have one (nor necessarily need on for their desired major / path…)
- If you do not have a laptop for any reason… ***not to worry!***
- The CS department's Systems staff has a notebook / laptop loaner program and will be able to loan you a notebook / laptop computer for the duration of the semester if you don't have one or if you cannot afford one.
  - Also available if your laptop is broken and under repair, we can arrange for you to receive a loaner laptop for a week or two until your own laptop is fixed

Interested? Link: https://www.cs.virginia.edu/wiki/doku.php?id=cs_laptop_loaner

I am happy to be your sponsor. Let me know.

Course Description

- If you take a moment to think about all the ways **computerized systems** penetrate our daily lives…
- Now think about how your day would go ***without*** devices, services, and conveniences that require some form of computer instruction…
- … the importance of writing precise and correct computer instruction (code) is self-evident.

- A first course in programming, with an emphasis on introducing **computing fundamentals** and an appreciation of **computational thinking**.
- For students with **no previous programming experience**.

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What Will We Be Learning?

- Programming in Python
  - Variables and Types: ints, floats, strings, booleans, lists, tuples, dictionaries
  - Control: functions, conditions, repetition (loops)
  - Files: reading, writing
  - Reading from the web
  - Using libraries
  - Regular expressions

Course Objectives/Goals

- By the end of the semester, students should be able to:
  - Understand the nature of the syntax and semantics of a programming language.
  - Analyze a problem and create a solution.
  - Produce a small working program that solves the problem given a set of requirements.
  - Understand and implement basic test strategies to test a program, given a set of requirements

  - Develop an appreciation for computational thinking
  - Understanding of basic object-oriented design and programming
  - Be able to effectively communicate with peers and instructors about your programming

Lecture & Lab Combined

- In-Person
- Learning the course content and practicing through hands-on activities/experiences
- Please bring your laptop
- ***Commit to be a daily, active participant!***
  - Sign the pledge (next class, once enrollment settles down a bit)

Course Schedule

- See the “Course Schedule” tab on the left navigation bar on Canvas
- Let’s look at Canvas together

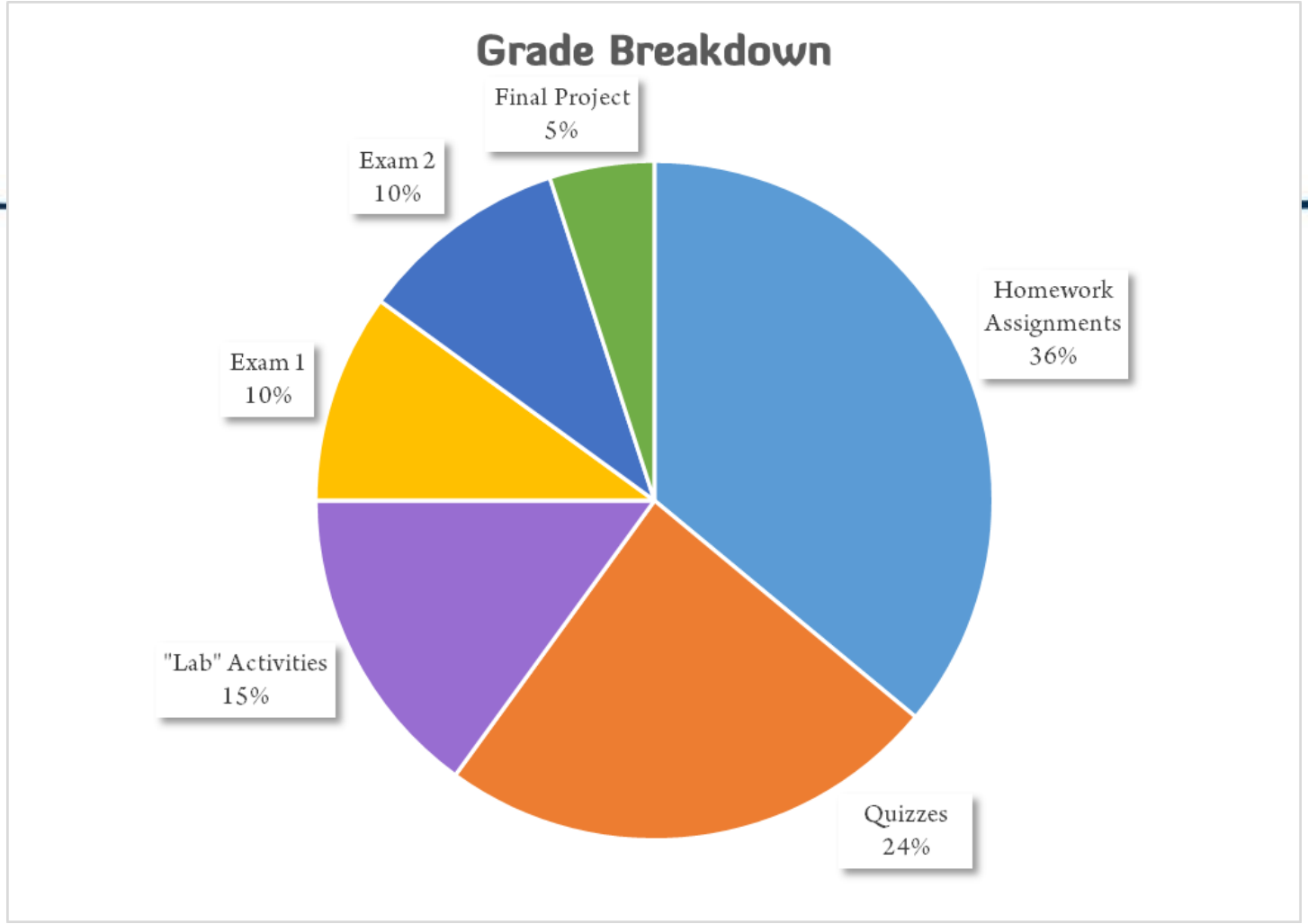
Peanut Butter & Jelly

Sandwiches!

Precise Instructions aka *Algorithms*

- Write down sufficient directions for making a PB & J sandwich!

GOAL



Letter grades will be assigned according to the following letter grade mapping:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Lower Bound	98.0	93.0	90.0	87.0	83.0	80.0	77.0	73.0	70.0	67.0	63.0	60.0	0

Homework Assignments

- **Approximately nine (9)** throughout the semester
- Use your programming assignments as a means to sharpen your skills and problem-solving abilities in order to do well on quizzes and the exams.
- Homework assignments are submitted online on **Gradescope**
- Submit by the deadline
  - Can submit up to 24 hours late, if necessary due to unexpected issues
  - Can submit multiple times on Gradescope
  - Last submission is the one that is graded
- Homework assignments are **due by 11:00pm on Wednesdays**

In-Class "Lab" Activities

- **On most days** there will be in-class activities – designed to be hands-on, ***collaborative***
- Give you the opportunity to review and reinforce your understanding of the material
- These activities are graded on a **completion basis**
- Submit by the end of class
  - Not necessarily based on correctness, but of course try your best to be correct!
  - As long as you try your best and we see you have made a ***sincere effort*** towards the goal/solution of the activity
- If you participate in at least 80% of the activities you will earn full credit!
- Be sure to **check-in with a TA** to show them your work *before leaving class!*

Quizzes

- **Approximately eight (8)** throughout the semester
- One of the primary ways that we will assess your mastery of the material in this course. It is also a good way to self-assess in preparation for the exams.
- 30-minute limit
  - Open-book, take-home, but no collaboration
- Released Friday and due by **11:00pm the following Monday**
  - Find any 30-minute window during this period to take the quiz
  - No late options
- We will **drop two (2) lowest quiz scores**

Academic Integrity Policies For Each Assignment Type

- Homework/Programming Assignments (PAs):
  - No collaboration; all work must be the result of individual academic effort
- Quizzes:
  - Open-book, take-home
  - No collaboration; all work must be the result of individual academic effort
- In-class “Lab” Activities:
  - Collaborative by nature
  - Group discussions and engagements are highly encouraged
- Final project:
  - Collaboration in small groups permitted within the stated collaboration policy
- Exams (1 and 2):
  - Closed-book, in-person (in class)
  - No collaboration; all work must be the result of individual academic effort

Quick & Fun Survey Questions

Get to know your peers! ☺

East coaster / West coaster / Not from the US?

Life Happens… What's the "**Late**" Policy?

- **Each type of assignment has a different late policy:**
  - **Quizzes:** Drop two lowest quiz scores
  - **Homeworks (PAs):** No homework assignment is dropped, can submit 24hrs late
  - **In-Class "Lab" Activities:** You're allowed to miss a generous 20% of activities!
  - **Exams:** No exams are dropped
  - **Final Project:** Project cannot be excused but you can choose presentation time

- Contact me if you experience any **unexpected / extenuating circumstances**, I will be happy to work with you! Please inform me **as soon as you are aware** of such a situation, preferably prior to the associated deadline / date of test

Illness?

- Regular attendance is highly encouraged
- However, your safety and comfort is most important!
- If you are not feeling well – please stay at home!
- Contact me and I'll help you
  - I will ensure that staying home DOES NOT impact your grade compared to being in-person!

Stay home and get some rest!

Syllabus Quiz

Don't forget to take the Syllabuzz Quizz!

- This quiz is *Mandatory!*
- This quiz is located on Canvas (see tab on left-hand side).
- Take this quiz ***individually***. Absolutely no collaboration permitted.
- Must get **100%** to stay in the course! *May take it as many times as needed.*
  - Review the detailed Syllabus
  - This quiz is ***open-book***
  - See score out of 12 points on Canvas Grades to confirm you've completed the quiz
- ***Opens:*** First day of class (open this evening!)
- ***Deadline:*** **January 31, 2024 @ 11:00pm**. *Take it early!*
  - *Most students should aim to finish the Syllabus Quiz by January 26, 2024*

Quick & Fun Survey Questions

Get to know your peers! ☺

Tea vs. Coffee?

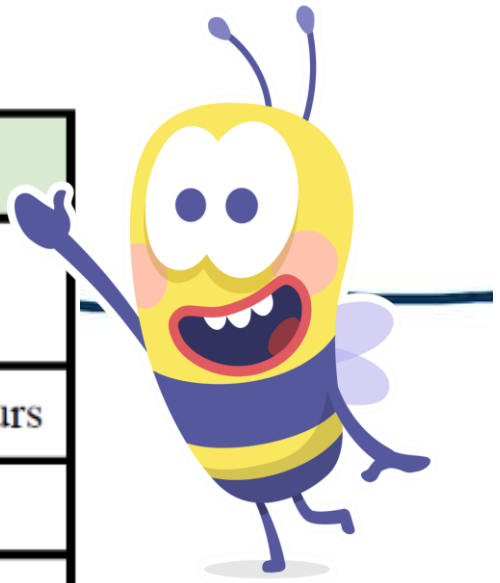
Quick & Fun Survey Questions

Get to know your peers! ☺

Android vs. Apple vs. Pixel?

Course Logistics

To Discuss:	*You should contact us via (in this order):*
Questions about course content / topics	In-class questions *(during lecture)*, Piazza, Appropriate Head TA(s), TA Office Hours
Questions about homework (general, *not code*)	Piazza, Homework Head TA(s), TA Office Hours
Questions about code conundrums	TA Office Hours, Professor Office Hours
Questions about grading (general)	Regrade requests through Gradescope (for PAs), Quiz Head TA(s), Homework Head TA(s), Piazza
Questions about in-class "lab" activities (general)	In-class Activities Head TA(s), Professor or TA Office Hours
Questions about TA Office Hours and attending	Office Hours Head TA
Questions about using Piazza or Piazza issues	Piazza Admin Head TA(s)
Conversations about mentoring, research, grad school, internships, résumés, student life, etc.	Professor Office Hours, schedule a one-on-one visit with your professor, TA Office Hours
Personal issues impacting coursework and/or progress (homework, exams, attendance, etc…)	Your Dean*, and/or private email to your professor *(* see **Student Support Team** section)*



How To Get Help?

Bee Sure To Review This Table!

The Course Staff Is Looking Forward To Working With You ☺

Your Teaching Assistants

- ~20 Undergraduate TAs
  - Some of these students are **Head TAs** and can be **contacted directly (via email)** for various reasons
  - Each **lecture** will have several TAs present to help with in-class “lab” activities

  - Where to find the Head TA contact information?

Head TA Role / Point-of-Contact
Quiz and Quiz Grading
Quiz and Quiz Grading
Homework and Homework Grading
Homework and Homework Grading
In-Class "Lab" Activities
Office Hours
Course Admin.
Piazza Admin.
Piazza Admin.

*If you have a general question about any of these areas, **contact** the appropriate Head TA by email.*

Head TAs / Points-of-Contact

It's a big class… How to get your questions answered fastest?

Contacting Us

- The best way to contact us is via **email**
  - However, you **MUST** include "**CS 1112**" somewhere in your ***email subject line***
  - We all receive a lot of email, so this helps us organize our emails and more efficiently get back to you
- You are most welcome (and encouraged!) to ask me questions **during lecture**, but also after class, too.

- ***Always email your instructor (do not use Piazza) for personal issues, emergencies, etc.***

Tools: Piazza

- We will use **Piazza** in the following way:
  - Website: https://piazza.com/ [Linked through Collab]
  - Piazza is a great tool for asking questions about **course content**, **policies**, or getting help on **homework** assignments
  - While you are waiting for an answer, see if there's an answer you can provide to someone else's question. We're all in this together! CS is a team sport! ☺
  - TAs will monitor and answer questions throughout the semester
  - Not a means to help you debug your code! (See more below)

It is very important to remember the following:

- **Do not post** complete or partial code solutions (for Homework) on Piazza when seeking answers to your question unless it is in a **PRIVATE** post
- **Do not post** complete or partial quiz solutions (code or short-answer) when seeking answers to your question unless it is in a **PRIVATE** post

Tools: Gradescope

- We will use **Gradescope** in the following way:
  - Website: https://www.gradescope.com/
  - Homework assignments will be **submitted**
    - Most programming assignments are autograded
    - Some aspects of programming assignments may be manually graded

Quick & Fun Survey Questions

Get to know your peers! ☺

Marvel Universe vs. DC Universe (Both?)

Quick & Fun Survey Questions

Get to know your peers! ☺

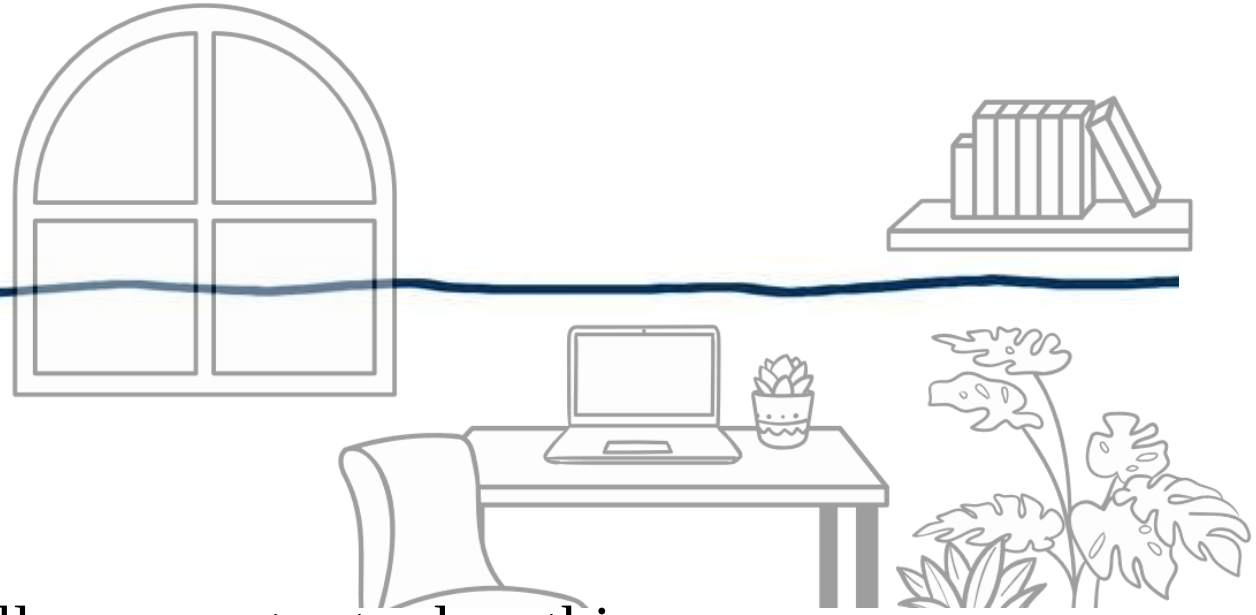
Cat / Dog / Animal Lover ☺

Quick & Fun Survey Questions

Get to know your peers! ☺

Mountain view vs. Ocean view?

Computer Science?



- Science… and an Art!
- What is a computer?
- Programming is mostly about how to tell a computer to do a thing
  - i.e., “What commands can I use for repetition in this language?”
  - i.e., “What commands can I supply so that it will accomplish a task or goal?”
  - …
- Computer Science is mostly above analyzing what we can tell a computer to do and what we can guarantee about the results
  - i.e., “Is this process guaranteed to produce the correct answer?”
  - i.e., “How efficient is this algorithm?”
  - …

Quick & Fun Survey Questions

Get to know your peers! ☺

Considering a major in ENGR vs non-ENGR major?

Quick & Fun Survey Questions

Get to know your peers! ☺

Cake vs. Pie?

INTRODUCTIONS:

1. Name
2. Major you are considering
3. One thing about CS 1112 you are excited about
4. A fun fact about yourself

Get To Know Your Peers & Paper Airplanes!

Get into groups of **four**

Introduce yourselves (Share the items above)

Pair-up; one person describes how to build a paper airplane, the other builds it!