CS 1112: Introduction To Programming

Python Basics; Hello World; Printing; Comments (Python & PyCharm!)

Dr. Nada Basit // basit[*at*]Virginia[*dot*]edu

Welcome to CS 1112!

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

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Welcome to CS 1112!

Be an Active Participant in Your Learning!
Be Curious!
Ask Questions!

Place-out? Waitlist?

- Place-out Test for CS 11xx
  - Think you are already familiar with the fundamentals of programming? Consider taking the place-out test for CS 11xx!
    - Register HERE: https://app.smartsheet.com/b/form/942a0be0fe4c4687822e8485f4c558cc
    - Info about test: https://uvacsadvising.org/placeout.html#taking-the-place-out-test
    - The test will be open through January 19. Register by Jan. 11
- Waitlist
  - If you need CS 1112 – feel free to stay on the waitlist
  - **Don't forget to sign-up!** *(So that I know you are active and attending!)*
  - Considering *switching* to CS 111x? Please let me know.
- 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 1112 – Introduction to Programming

- Meeting Dates: January 12 – April 28, 2026

- 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!*

Reminder of my Contact Information

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

hello

**Prof. Basit's
Office Hours Challenge!**

* All office hours (Prof and TA) will begin on Jan. 20.

TA Introductions ☺

Student perception of TAs:

In Reality…

Wait… we have to introduce ourselves?!
☺

Student Introductions ☺

- Two days ago, a post was made on **Piazza** encouraging you to introduce yourselves.

- This is a mini-assignment that is **worth 5 points.**

- The goals for this assignment:
  1. Give you the opportunity to introduce yourself and get to know your classmates
  2. Introduce you to this semester's Q&A platform – Piazza
  3. Give you experience navigating to the Piazza website, finding a post, reading it, and responding to it

  Have fun and be creative with your responses!

- Deadline: submit by **11:00pm** on **January 26, 2026**

Syllabus Quiz ("Quiz 0")

Don't forget to take the Syllabus Quiz!

- 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

- *Where?:* *"Assignments" tab >* *"Syllabus Quiz (Required)";* **or** *"Quizzes" tab*

- *Deadline:* **January 28** @ **11:00pm**. (Just after the add deadline). *Take it early!*
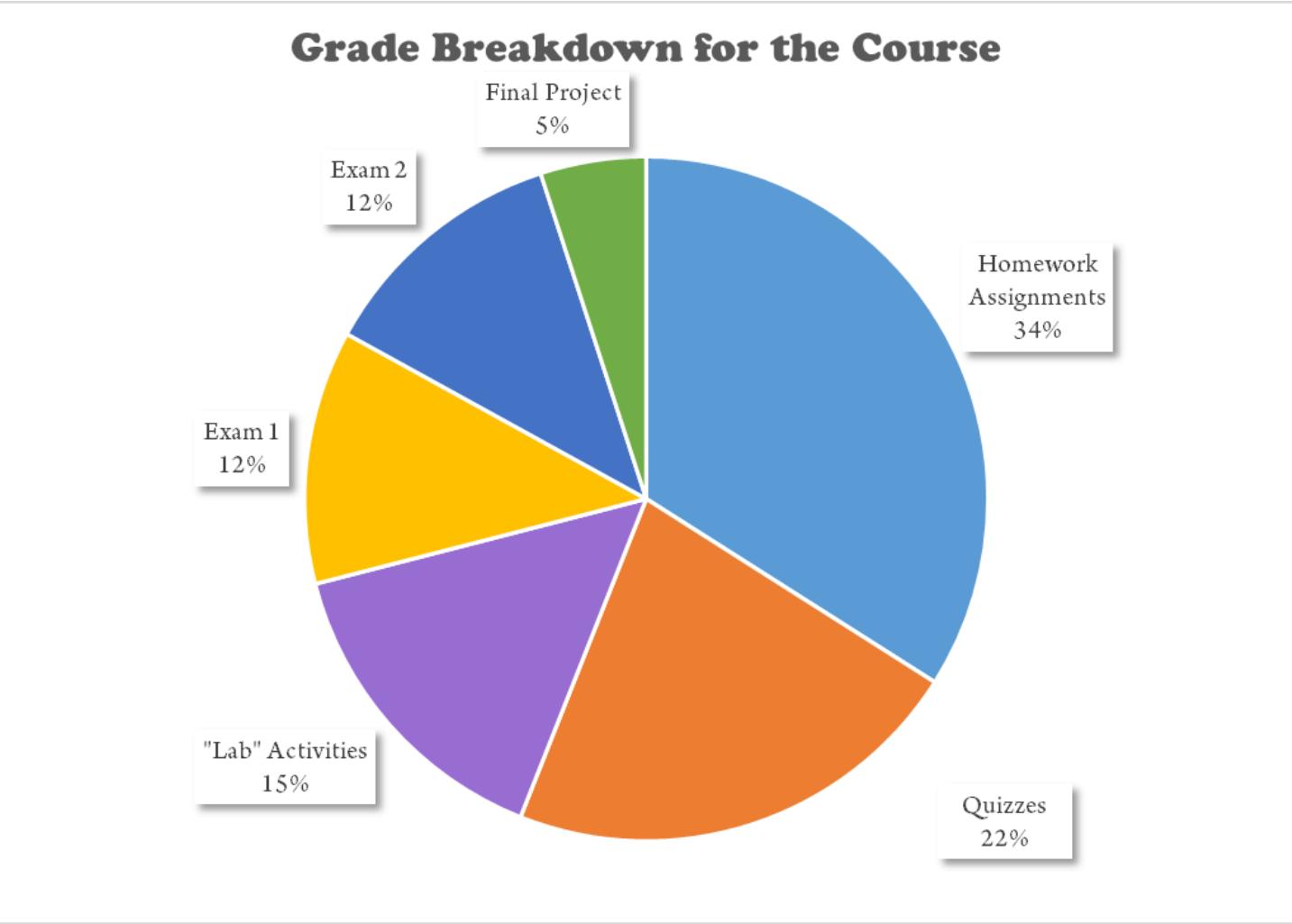 - *Most students should aim to finish the Syllabus Quiz by January 23, 2026*

About the Course

Course Schedule

- See the "**Course Schedule**" tab on the left navigation bar on Canvas
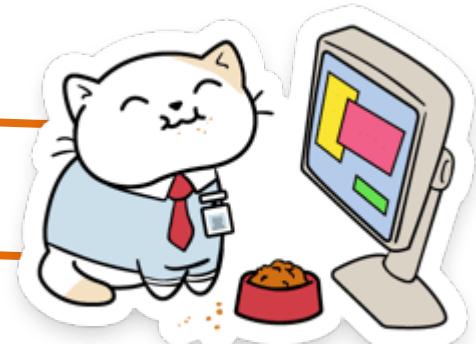
- Let's look at Canvas together

Course Schedule

Grade Breakdown for the Course

Final Project
5%

Exam 2
12%

Homework
Assignments
34%

Exam 1
12%

"Lab" Activities
15%

Quizzes
22%

Letter grades will be assigned according to the following letter grade mapping:
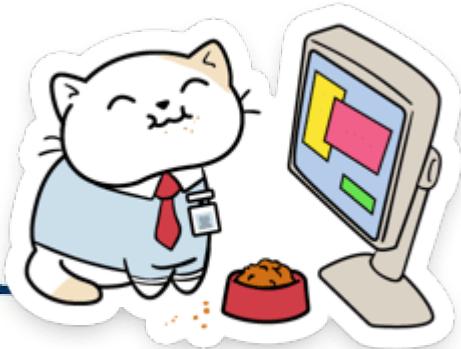
Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Lower Bound	98.0	93.0	90.0	87.0	83.0	80.0	77.0	73.0	70.0	67.0	63.0	60.0	0

Homework Assignments

- **Approximately eight (8)** 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

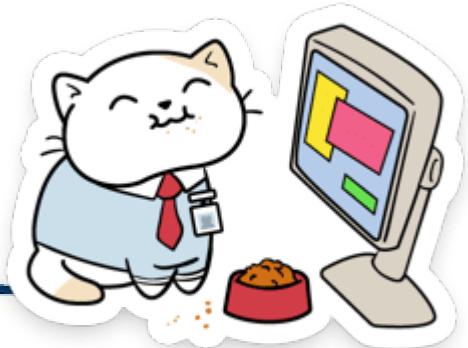- Homework assignments are **due by 11:00pm on Wednesdays**

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 activities, 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!*

In-Class "Lab" Activities (2)

- **Note:** We will **not accept** these lab activities for "grading" after the end of class.

As mentioned, based on our generous policy
All students can miss up to 20% of in-class "lab" activities"
throughout the semester <u>without penalty</u>. So please don't ask
to make up an in-class activity. It's built into the system!

Life Happens! These activities can be missed for <u>ANY</u> reason
including:
- Sickness
- Personal/family circumstances
- Religious obligations
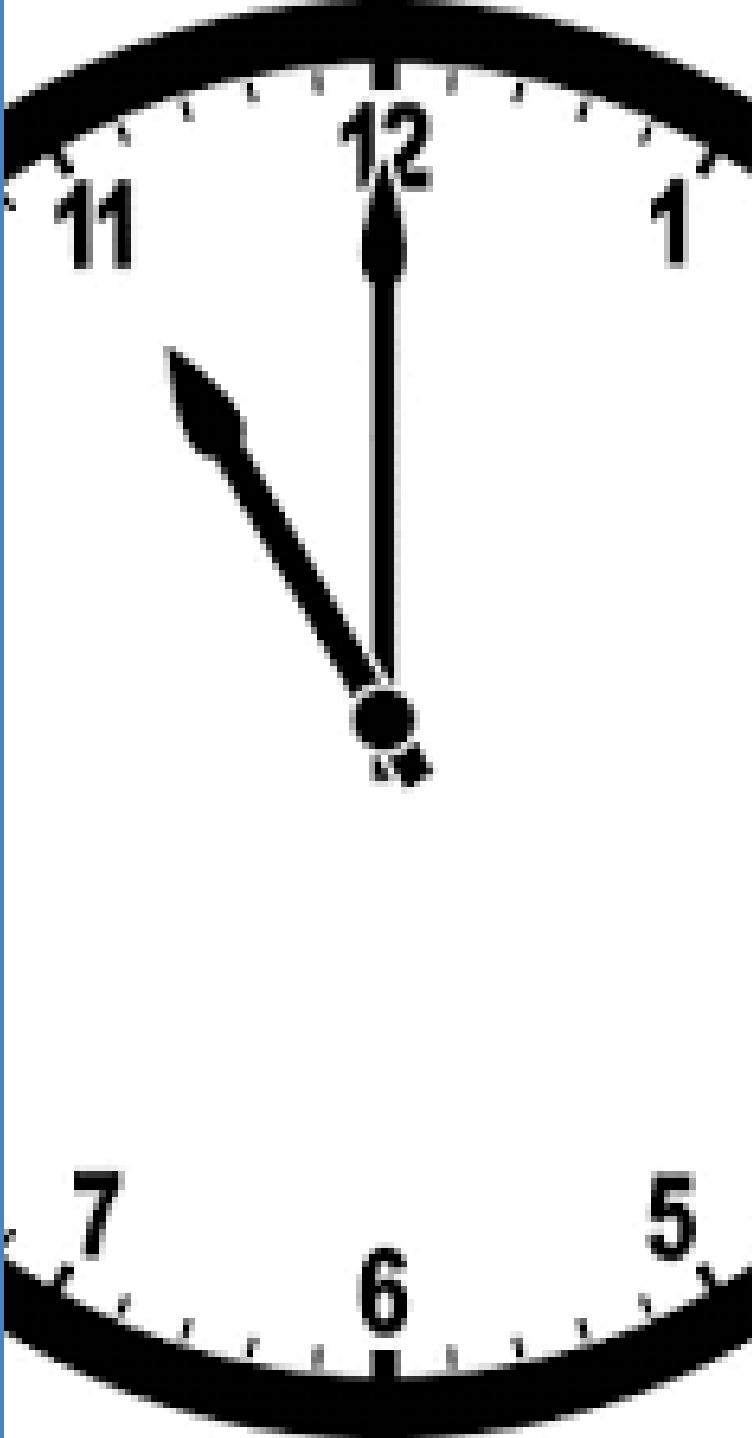- Travel   … anything!

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

CS 1112
Magic Hour:
11:00pm ☺

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
  For these such occasions…
  - I will ensure that staying home DOES NOT impact your grade compared to being in-person!

Stay home and get some rest!

Quick & Fun Survey Questions
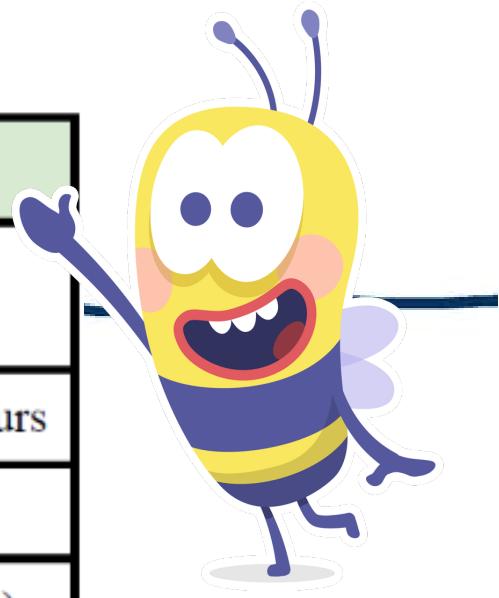
Get to know your peers! ☺

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

Course Admin
Homework and Homework Grading
Quiz and Quiz Grading
In-Class "Lab" Activities
Office Hours
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…
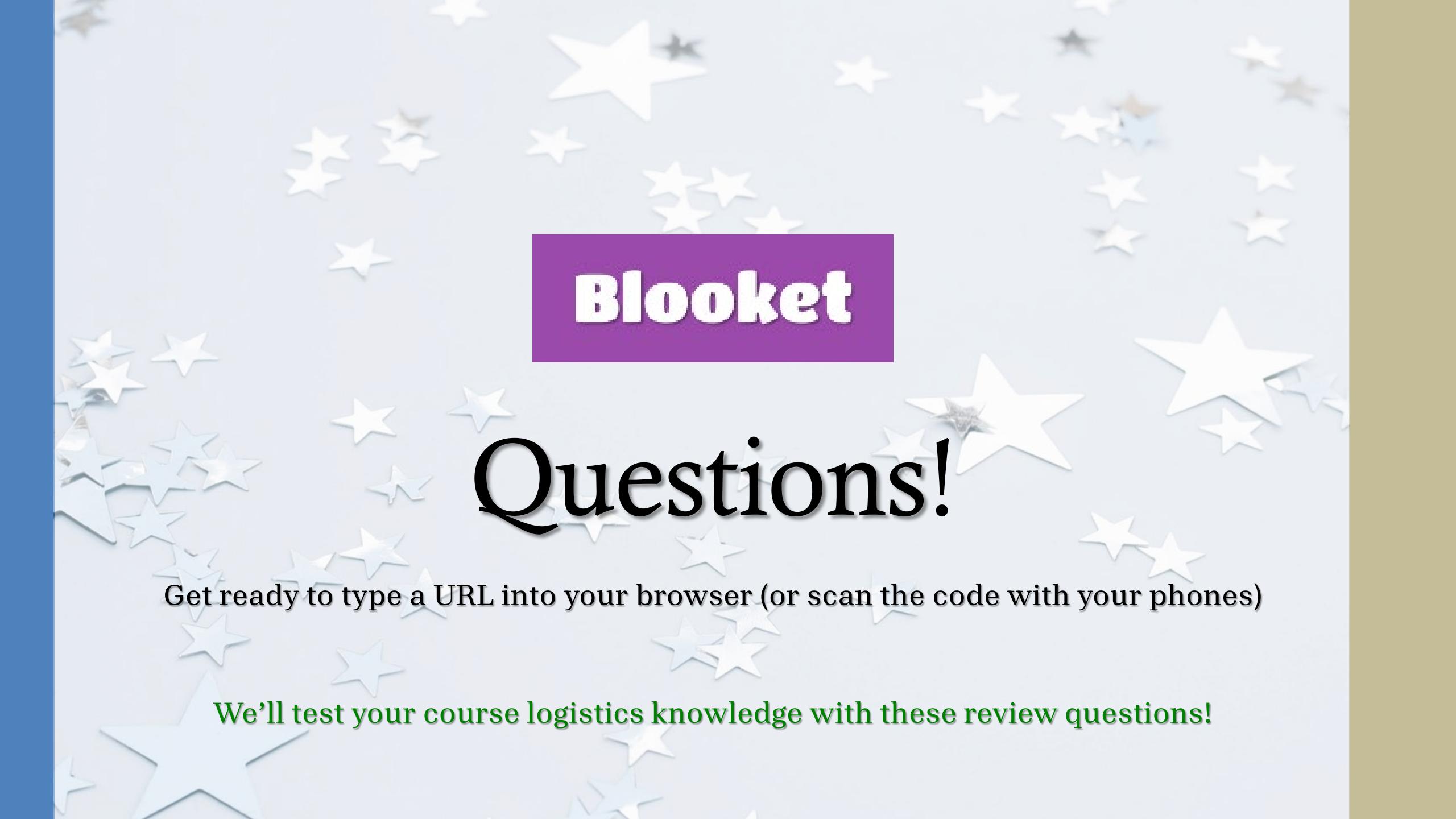How to get your questions answered fastest?

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.

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Quick & Fun Survey Questions

Get to know your peers! ☺

Marvel Universe vs. DC Universe (Both?)

Blooket

Questions!

Get ready to type a URL into your browser (or scan the code with your phones)

We'll test your course logistics knowledge with these review questions!

Quick & Fun Survey Questions

Get to know your peers! ☺

Cat / Dog / Animal Lover ☺

INTRODUCTIONS around the room:
1. Name
2. Major you are considering
3. One thing about CS 1112 you are excited about
4. A fun fact about yourself
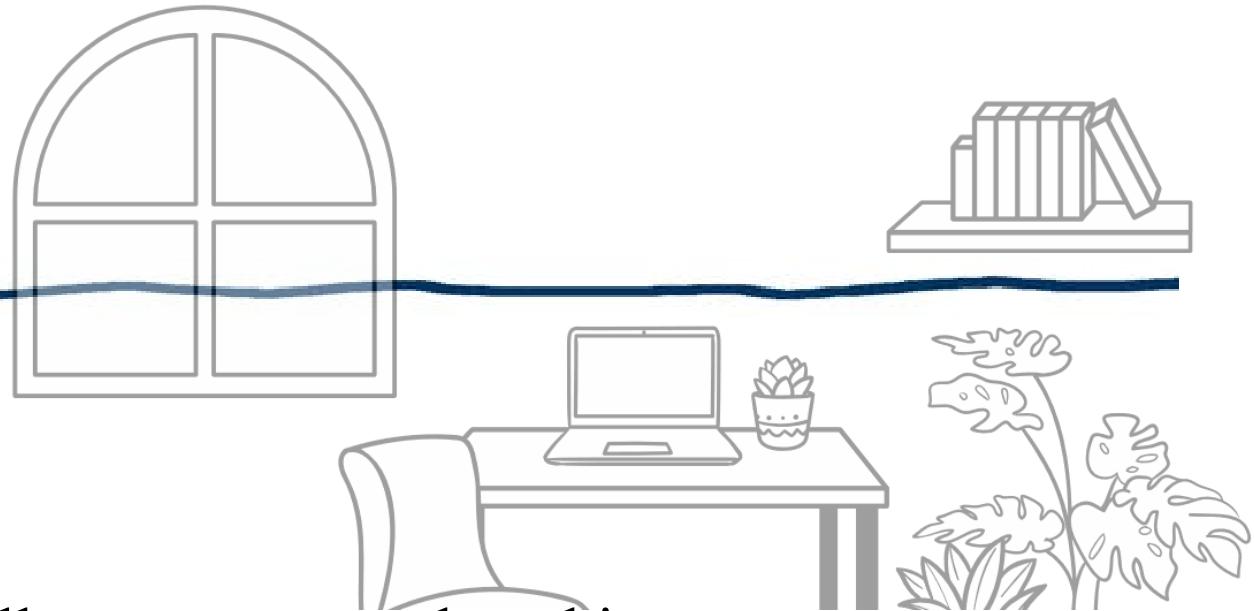
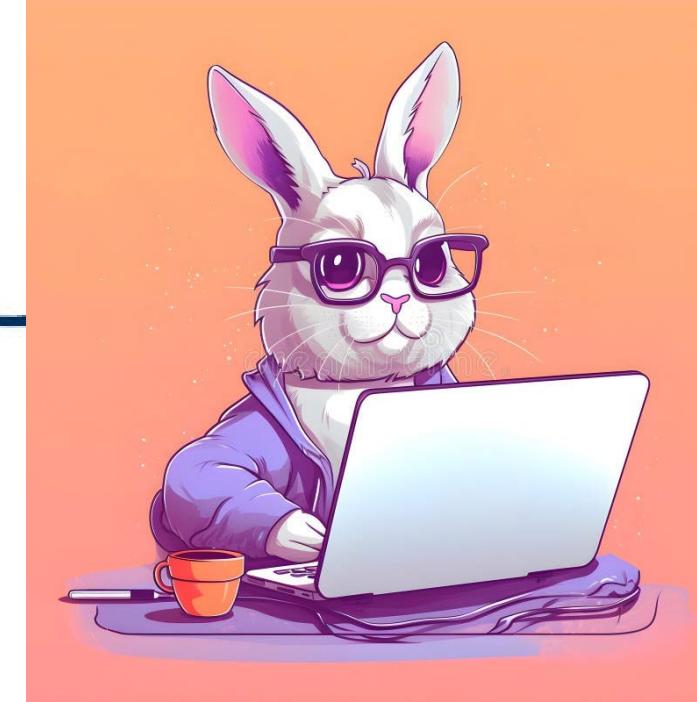# Get To Know Your Peers & Paper Airplanes!

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!

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?"
  - …

CS 1112 Pledge!

Taking this pledge is mandatory for our class to have a community of trust

★ We will do this soon (probably next week)
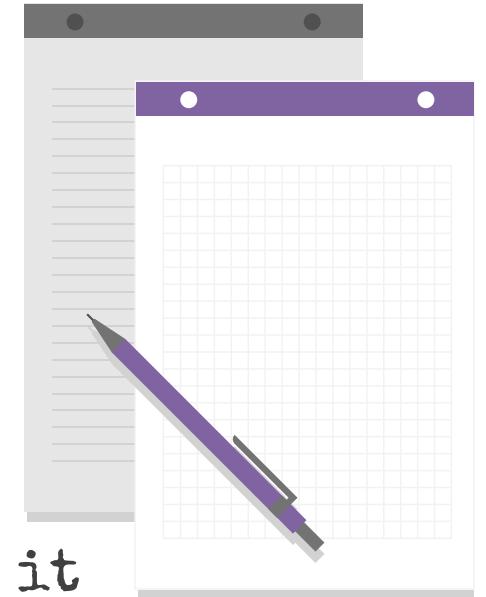
Image © https://www.dreamstime.com/ Computer Rabbit

"Important Documents" folder on Canvas

- Let's take a look…

A Little Bit of Housekeeping…

Create a folder somewhere where you can easily find it (Desktop, Documents, …) and name it "CS 1112"

Put everything related to this course inside this folder – you will have many artifacts by the end of the semester!

Quick & Fun Survey Questions

Get to know your peers! ☺

Mountain view vs. Ocean view?

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?

PYTHON DEMONSTRATION

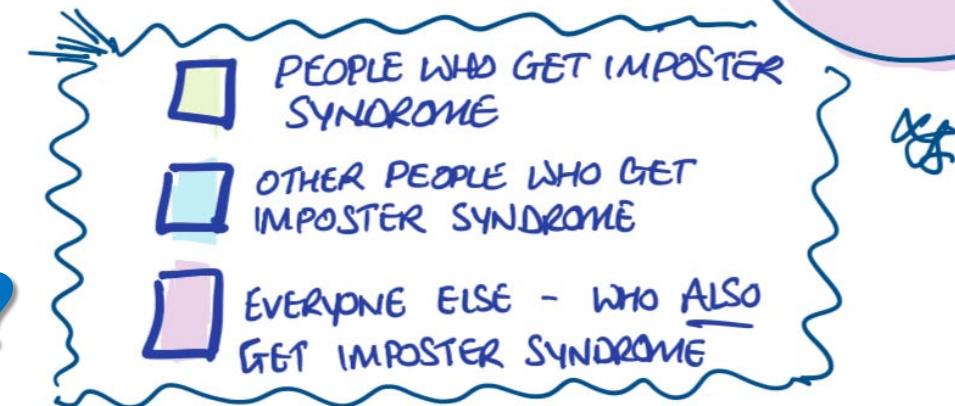Introducing Basics of Python (*start file, if time:* `hello_world.py`)

PyCharm environment (brief)

Simple Printing and Commenting

- Ever Think You Are An Imposter?

- Wonder whether UVA made the right decision?

EVERYONE FEELS LIKE AN IMPOSTER ATLEAST SOME OF THE TIME

PIE CHART

☐ PEOPLE WHO GET IMPOSTER SYNDROME

☐ OTHER PEOPLE WHO GET IMPOSTER SYNDROME

☐ EVERYONE ELSE – WHO ALSO GET IMPOSTER SYNDROME

Well, we think UVA made the right decision! ☺ Watch this video this weekend to be sure: Click HERE!! The video is about 20 minutes long. Watching it will be a great investment in your education, should help your test performance, and improve your job interviewing prowess!

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By contrast: Hello World in Java

```java
import java.io.*;

public class HelloWorld {
    public static void main (String[] args) {
        System.out.println("Hello World!");
    }
}
```

This is a simple yet complete Java program. It does one thing: Prints "**Hello World!**"
Output:
Hello World!

By contrast: Hello World in Java (with Comments)

```java
/* Below is an import statement
 * it is used if you want to use code from other packages
 */
/* Java.io.* is all of Java's input/output stuff */
import java.io.*;

public class HelloWorld { // Class declaration (common single-line comment)
  /**
   * The main method of the program.
   * This is a Java doc comment, note the " /** "
   * @param args - variable for the input array of Strings
   */
  public static void main (String[] args) {
    /* This is how you print to the console */
    System.out.println("Hello World!");
  }
}
```

(This is a multi-line comment, note the " /* ")

What is System.out.println() ???

Installing Python and PyCharm!

Reminder:

Follow the installation guide corresponding to your computer's operating system (Windows or Mac).

On Canvas: Files > Installation Documents > MacOS_Installation.zip

            Files > Installation Documents > WindowsOS_Installation.zip

Notes/Reminders…

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
  - Understand basic object-oriented design and programming
  - Effectively communicate with peers and instructors about your programming

CS Laptop Loaner Program

- 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. Please let me know.

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