Summer 2022 - Async

Today's Goals

1. What is the course about?
2. Are you in the right course?
3. What are the instructional and workload expectations?
4. A little bit of Computer Science
5. Homework

Hi, I'm Kris.

Meet the **Real MVPs**

- Your COMP110 UTA Team
- Team: https://22ss2.comp110.com/resources/team.html

Meet the **Real MVPs**

- Your COMP110 UTA Team
- This course would be **impossible** for all of us, if not for them.
- THE absolute best UTA team at Carolina. You will 💙 them.
- This team can do it all: they'll help teach you concepts you're struggling with, guide review sessions, study guides, generate lecture ideas, and build exercises.
- Drop-in, zoom office hours will be available to you for over 20 hours a week.
- Small group tutoring for conceptual help will be open most days from noon to 1pm.

Course Objectives

- You will learn the **fundamentals of programming** in the application area of **data science**
  - These concepts are universal and apply to nearly all programming languages
  - You will leave knowing what it feels like to be a programmer
  - You will know how to write programs to analyze and visualize real-world data sets
- You will gain practice with **computational thinking**
  - **Thinking algorithmically** while breaking down problems step-by-step
  - Thinking at varying levels of **abstraction** by describing problems & solutions abstractly and precisely
- You will understand what **computer science** and **responsible computing** are all about

Zero Programming Experience Expected

- This course assumes *no* prior programming experience
  - But some experience is OK

- COMP110 is a ***rigorous*** introduction to programming.
  - 1.5 hours of lessons/challenge questions per day
  - ~3 to 5 hours of programming exercise practice / day

The Instructional Format of COMP110.SS2

- Will components of COMP110 be held **synchronously**? *Kind of!*
  - Today
  - 3x quiz dates are from 9:45am EST to 11:15am EST
  - Final exam

- Will most of COMP110 be taught **asynchronously**? Yes!
  - Lessons teaching new concepts, tutorials guiding through construction, and such.

What will you *do* in COMP110?

- **Prepare** - Actively Watch Assigned Videos, Review Notes, Read Assigned Papers
  - Like assigned readings in other courses except mostly video
  - You should take notes and actively follow along with coding and diagramming examples

- **Participate** - Follow-along in Lecture, Respond to Lesson and Reading Questions
  - Practice reading, diagramming, and writing code
  - Reflect on big questions in computer science and society

- **Practice**
  - Environment Diagrams: Pen-and-paper evaluation of code just like the computer does
  - Programming Exercises: Small programming problems to practice fundamentals
  - More open-ended and creative programs than exercises

- **Demonstrate Mastery**
  - Quizzes: 3x timed quizzes
  - Final Exam

Quiz Dates

Quizzes are ***synchronous***, during the section's “lecture” time. You are only permitted to be absent for *one quiz*.

- 6/28 from 9:45am EST to 11:15am EST
- 7/5 from 9:45am EST to 11:15am EST
- 7/12 from 9:45am EST to 11:15am EST
- 7/25 from 8am EST to 11am EST

For full policies, see syllabus.

Staffing Hours (Find on Course.Care)

- 1-on-1 Help in Office Hours
  - Monday - Friday: 2pm to 6pm EST
  - Saturday: 11am to 1pm and 3pm to 5pm EST
  -
- Tutoring (Group Study)
  - Tuesday - Friday: 12pm to 1pm EST

- Async Lesson Q&A - For questions about the day’s lesson material
  - Most weekdays - 9:45am to 11:15am

How do *you* believe programming will be valuable toward achieving *your* personal goals?

Why are you in this course?

Think for a **minute**, introduce yourself to your neighbor(s) and **discuss**, then we'll **share**.

Computer Scientists are ***Toolsmiths***

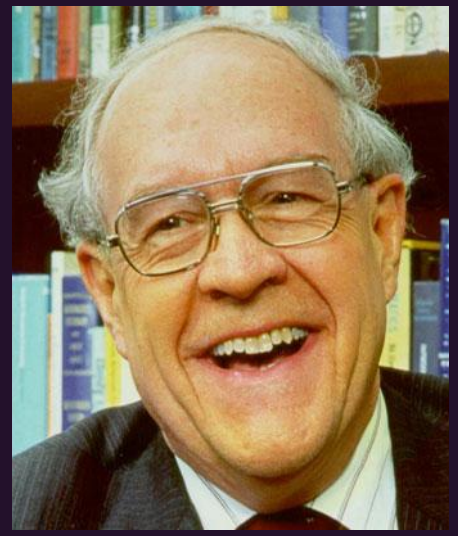
“The *programmer*, like the poet, works only slightly removed **from** ***pure thought-stuff.***

(S)he builds castles in the air, from air, *creating* ***by exertion of the imagination.***

Few media of creation are so *flexible*, so *easy to polish* and *rework*, so *readily capable* […]”

Fred Brooks

Baller / O.G. / Founder of UNC CS Department



“Think…

Type…

Magic Happens.”

Prof. Gary Bishop

Dr. Grace Hopper

"**Humans** are **allergic to change**.

They love to say,
'We've always done it this way.'

I try to fight that.

That's why I have a clock on my wall that ***runs counter-clockwise***."

Programming is a Practiced Skill

- Like playing an instrument, painting, writing cursive letters, dancing, singing, sports, wood working, quilting, and so on....

Time spent *individually practicing* is the key to success.

- This is *very different* from courses that are knowledge-based!

- The team and I want you to succeed in learning how to program, so we structure everything we do toward helping you practice individually.

How-to Work on Programming Exercises and Projects

- Start early. Start early. START EARLY!

- Read the instructions closely and follow them step-by-step:
  - They are written to help guide you through the assignment!
  - Do not skip around or try to move past a step before completing.

- Have open:
  - Lecture notes and slides for related topics
  - *Instructions for the assignment!*

- When you get stuck:
  - Stare at your code for a while. Look it dead in its eyes.
  - Take a break, take a walk, do something else.
  - See us in office hours!

- *START EARLY!!!*

The Struggle

- Programming is weird and different from almost everything you've ever done before.
- If you are feeling the "struggle" of working through problem sets – you are doing COMP110 right.
- Struggling through problem sets is expected. ***Everyone*** goes through it in the beginning.
- **Coming to *your own* understanding of concepts, independent of friends in the course, is THE ONLY way to do well.**

Collaboration Policy & Honor Code

We take honor code violations very seriously.
Understand the policy details on the syllabus.

Collaboration Policy – **Graded Assignments**

- No collaboration with anyone in or out of the course is allowed on exercises, quizzes, or exams.

- **The only permitted collaborators on exercises and projects are UTAs while they are working in their official capacity as a UTA.**

- What is collaboration?
  - Posting screenshots to GroupMe or any other communication channel
  - Looking at/sharing, or letting someone else look at/share, your screen.
  - Talking about your code in a step-by-step fashion
  - Copying or sharing code with anyone else or from community websites like StackOverflow, Chegg, GitHub, or CourseHero
  - Asking for help from peers on GroupMe or any other group chat

Things to know about autograding…

- You can resubmit to the autograder without penalty before the due date

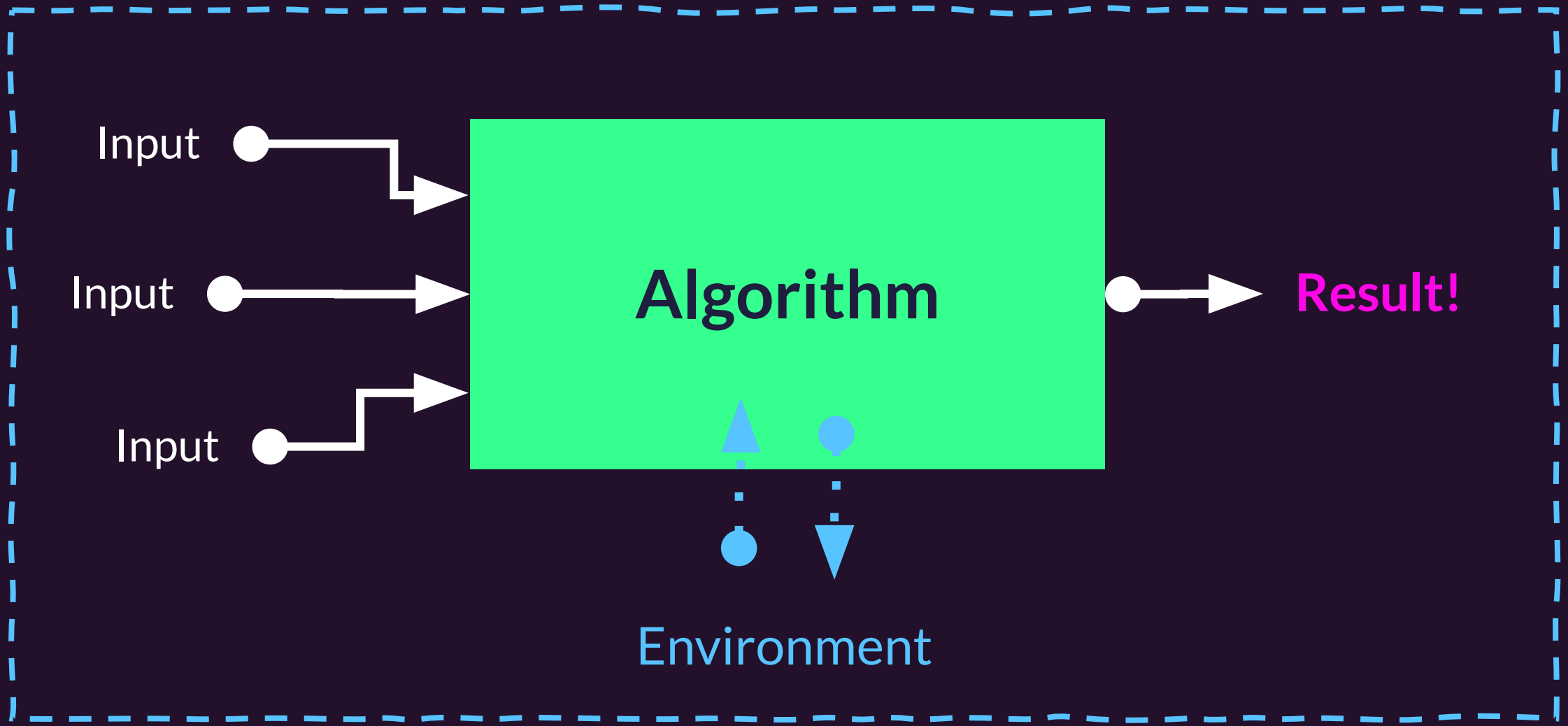
- If you do not get full credit - stop and think about what might be causing a test to fail. **Try again!**

- Be careful to avoid a frustrating loop of "tweak one small thing, resubmit, tweak one small thing, resubmit, ..."
  1. See if you can reproduce the error
  2. If you find yourself stuck in this loop, stop by office hours.

& now for some...

Computer Science !

The Fundamental Pattern



The Fundamental Pattern

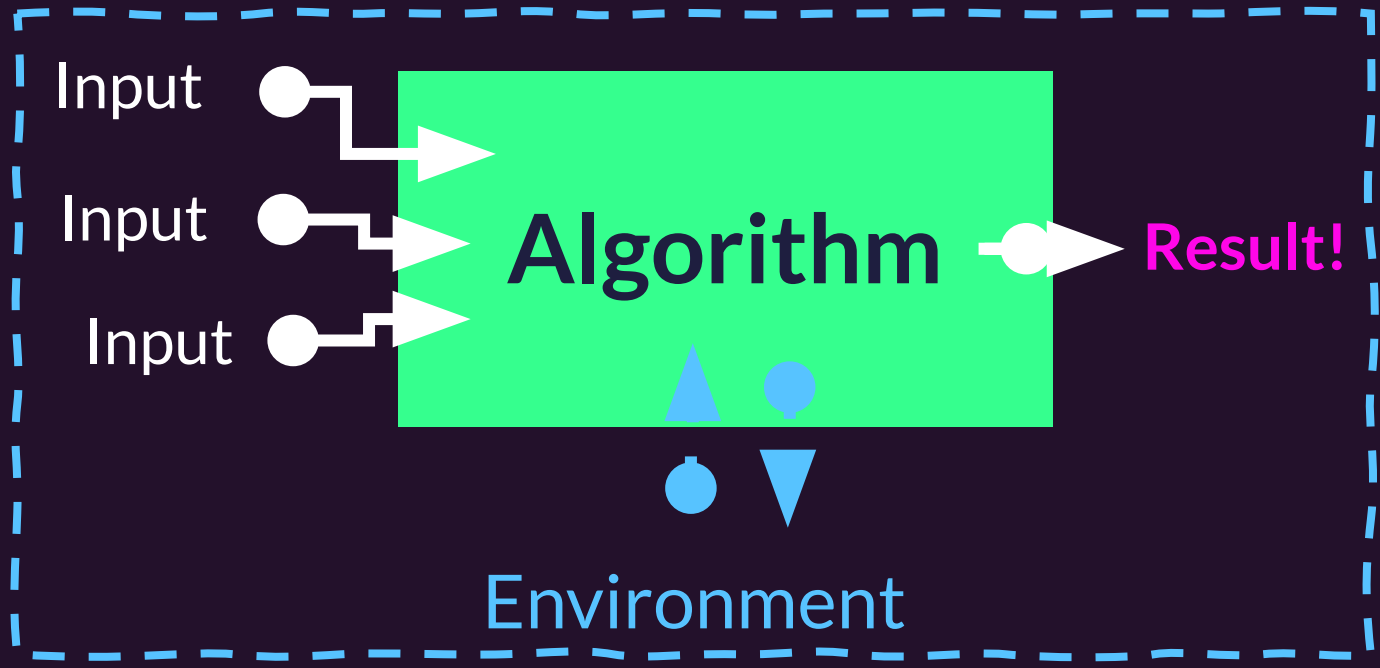
From the scale of **single lines of code** to **complete programs**, this pattern of thinking is pervasive

Input is data given to an algorithm

An **algorithm** is a series of steps

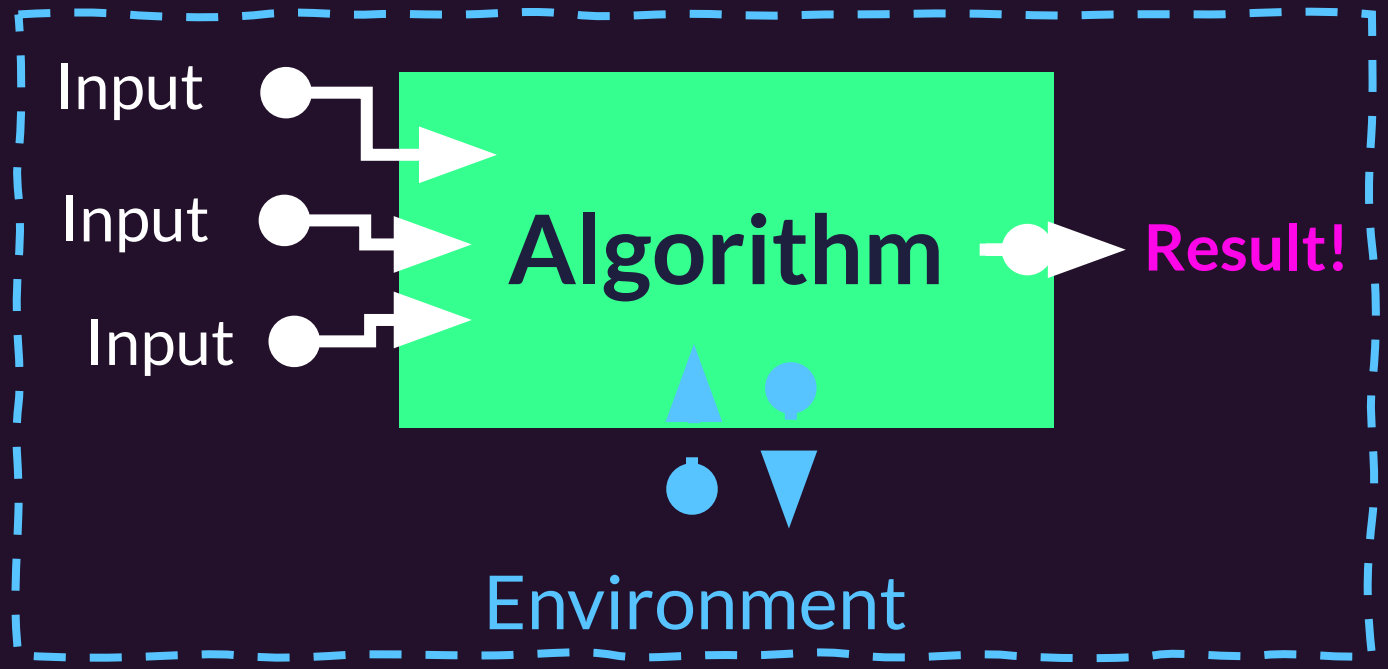
An algorithm **returns** some **result**

An algorithm *may* be influenced by its **environment** and it *may* produce side-effects which influence its environment.

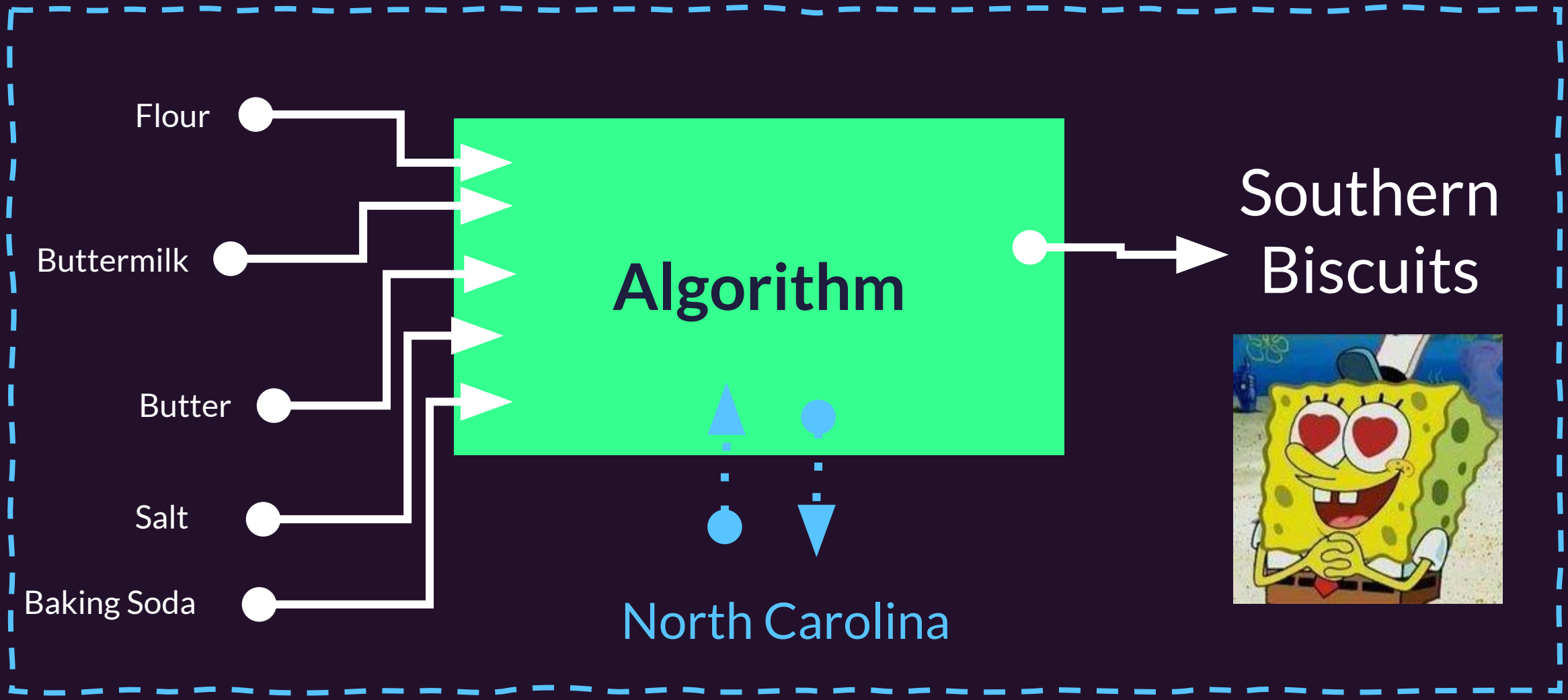


Critical thinking...

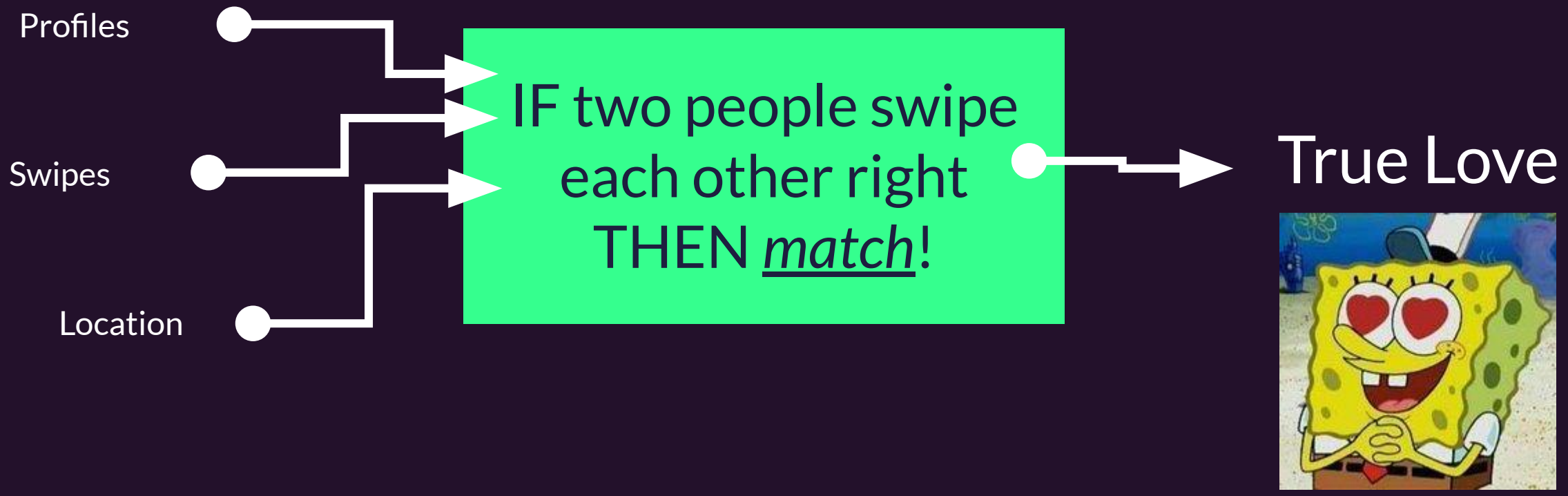
- Think about where this pattern exists in a field you're interested in?
- What are the inputs?
- What is the algorithm?
- What is the intended result?
- Do conditions of an "environment" influence the algorithm?
- Does the algorithm produce any side-effects on the "environment"?



The Fundamental Pattern



The Fundamental Pattern - Tinder



What's next?

Course Web Page: 21ss2.comp110.com

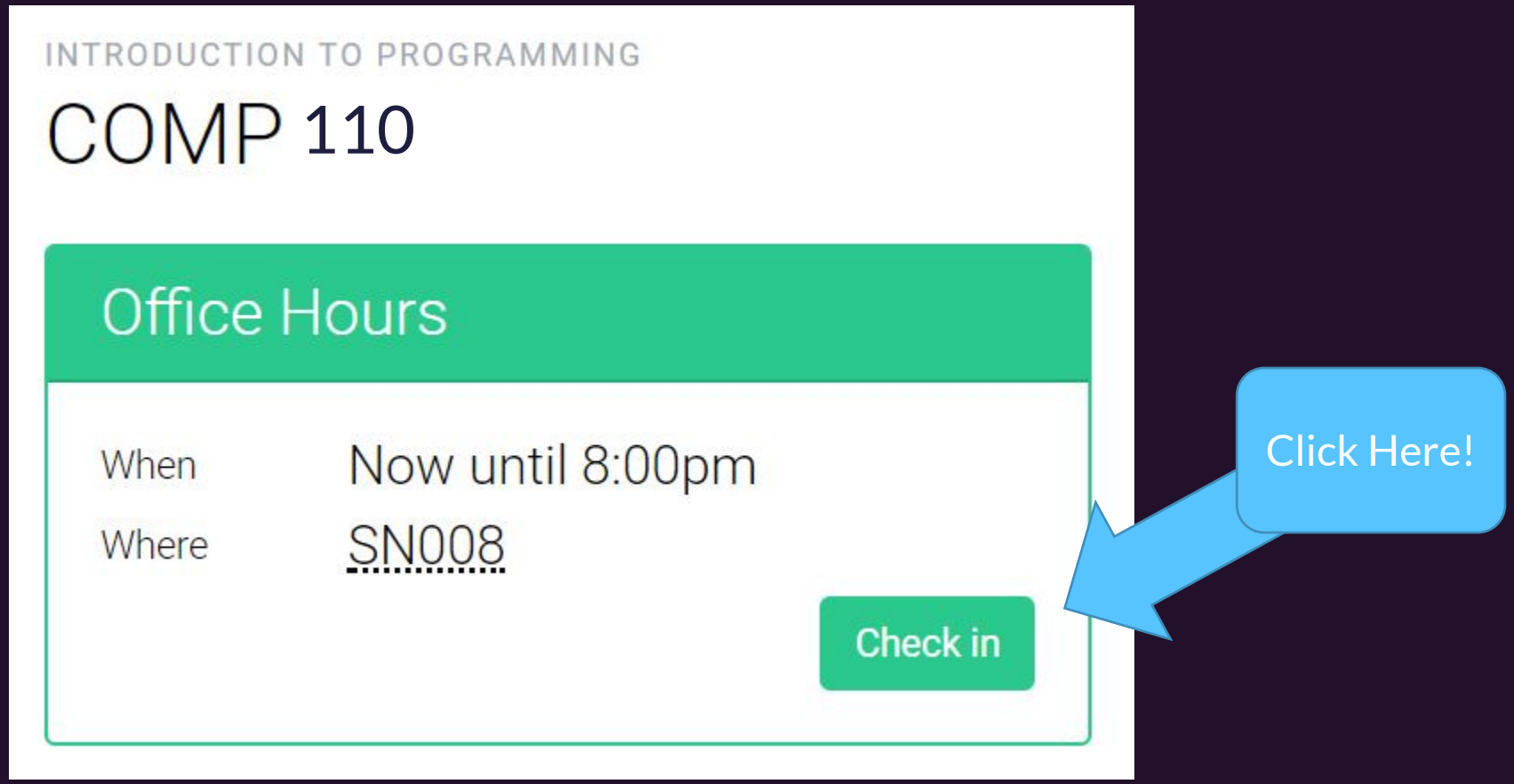
- Course Itinerary
  - Lessons
  - Videos
  - Exercises
- Logistics
  - Syllabus
  - Course Setup
- Support
  - 1-on-1 Office Hours
  - Tutoring

Homework

- Read Syllabus and Support on Course Page
- Respond to Lesson 01 (LS01) Gradescope Questions
- **Update your computer's operating system!**
    - Instructions are posted under the Logistics section.
- Install required course software.
    - Instructions are posted under the Logistics Section
- Work on Exercise 00 - Hello World

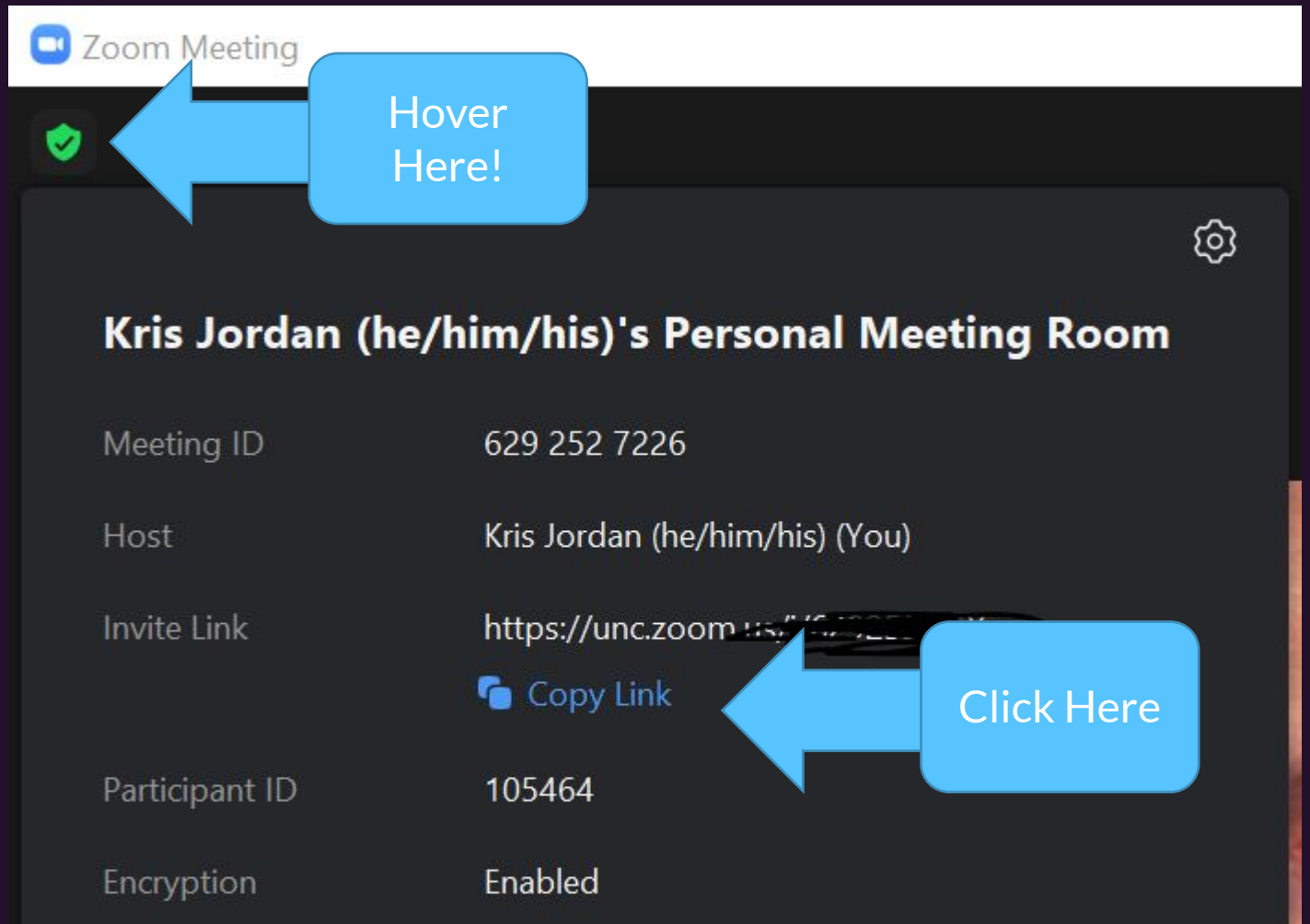
Office Hours Check-in Process

Click on "Get Help" on the course home page

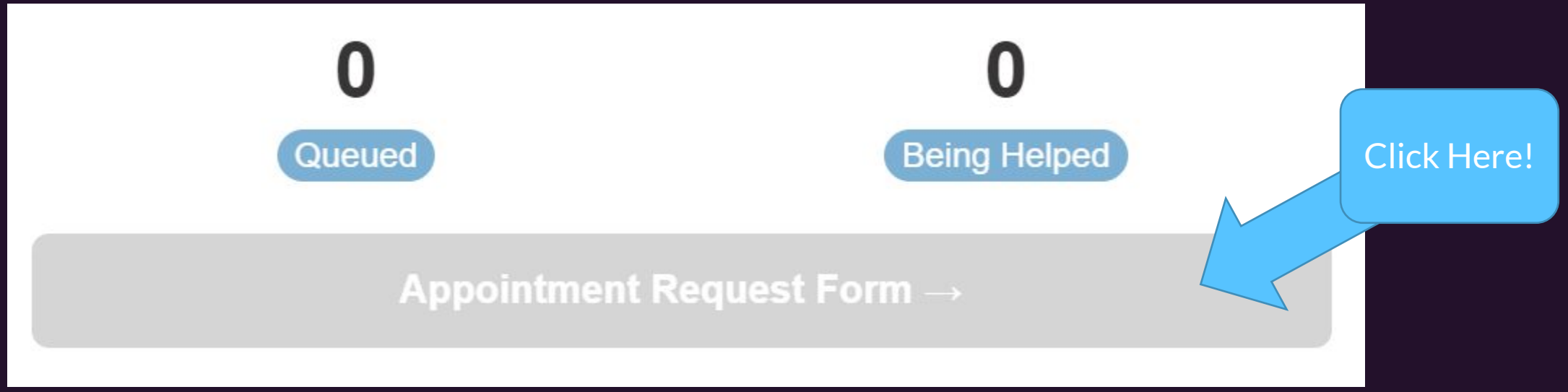


Office Hours Check-in Process

Start a Zoom Meeting and Copy your Zoom URL

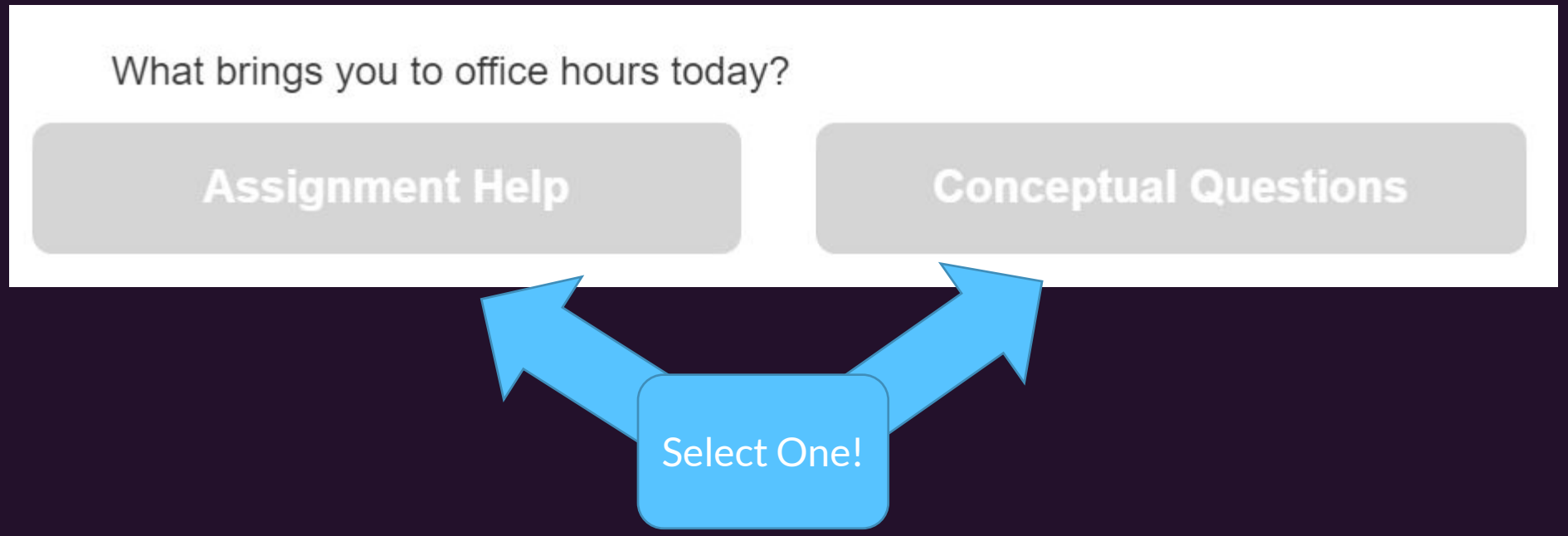


Office Hours Check-in Process



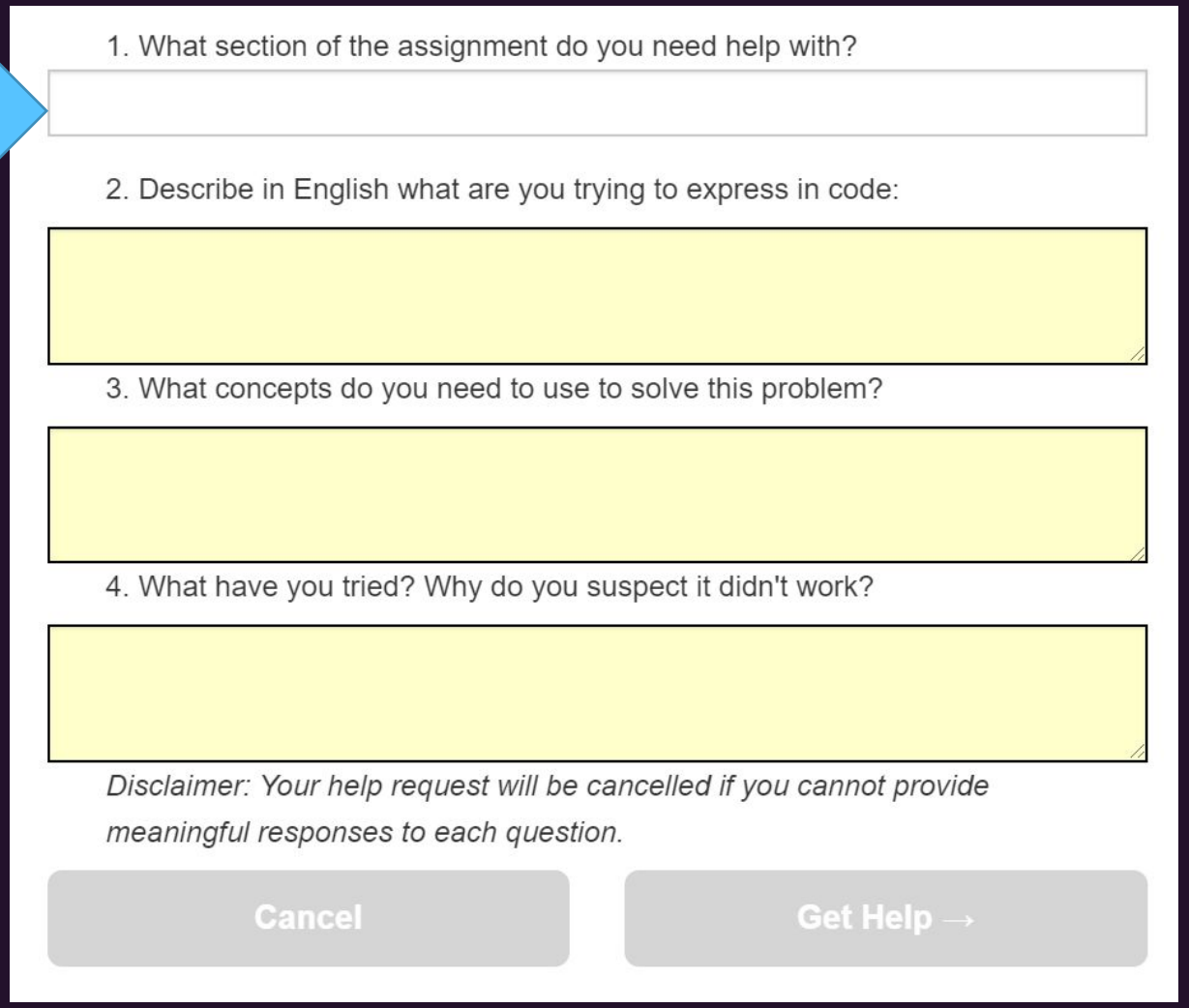
You can see how many people are currently waiting to be helped and currently being helped ahead of you.

Office Hours Check-in Process



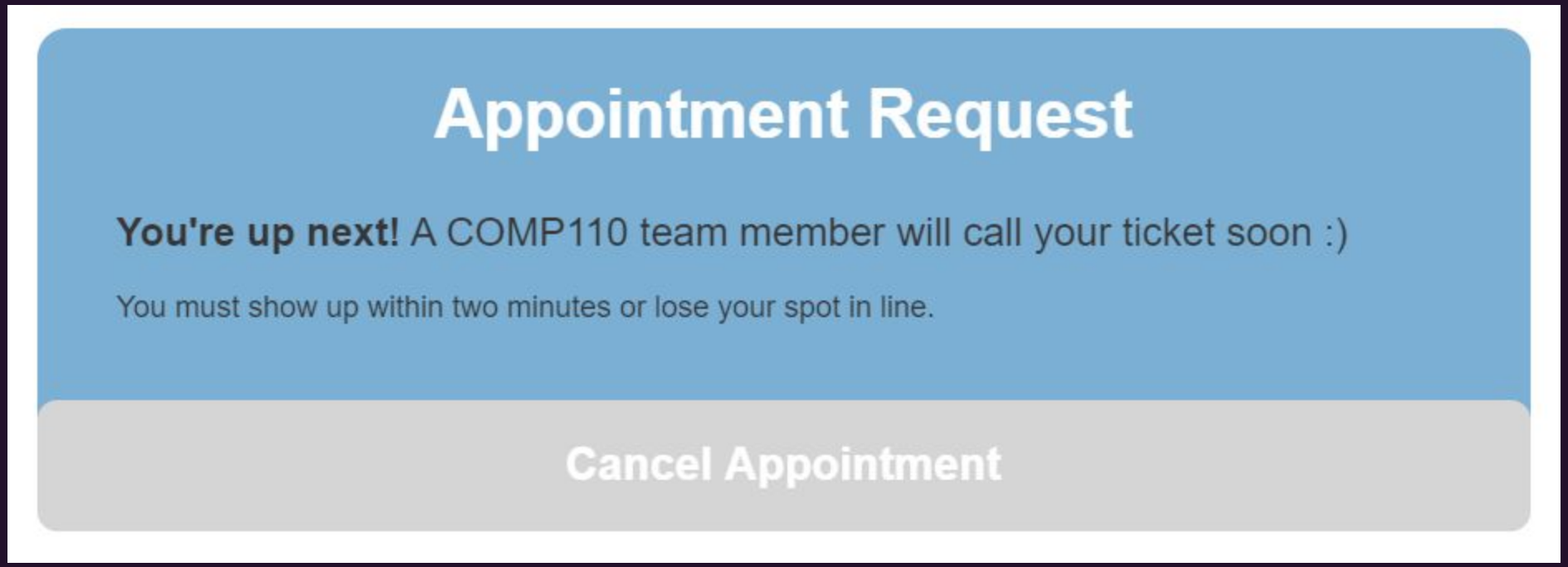
Office Hours Check-in Process

Fill In



IMPORTANT: You must demonstrate **effort and thought** in these fields. If you do not, the TAs are instructed to **cancel** your request so you can try again.

Office Hours Check-in Process



Office Hours Check-in Process

Kris is ready for you!

Come on in to SN008! You must show up within two minutes or lose your spot in line.

Cancel Appointment

Questions?

Connecting on Social Media

- YouTube: Where lectures are! ***Subscribe!***
- Twitter: **@KrisJordan**
- Insta: **@therealkrisjordan**
- Finsta: **@ada_dog_omg**

We'd love **feedback** throughout the term.

- We welcome feedback on all aspects of the course
  - From as simple as "your mic was too quiet"
  - To suggestions on how to improve the videos, etc.
- Feedback form is linked in the footer of the course site
- **Please give us feedback while we have time to act on it!**
- I'll also take class wide feedback through the semester.

Our Fall Goal: **Positive Vibes**!

- Fall 2021 is set to be a great, optimistic, high-energy return to form!
  - ... unlike the 18 months behind us.

- Please bring positive energy and spread love among peers in this course, when interacting with the COMP110 TA team, and **I**.

- If you have negative experiences you need to air and that need to be heard, please direct those toward my **Grievances Form**:
  - https://21f.comp110.com/resources/syllabus.html#feedback
  - Also linked to in the footer of every page on the course site.

- If you share your grievances through this form, **I** will receive them directly. If you would like a response, **I** will follow-up with you directly. You can also submit anonymously.
  - For the general mental health of your peers and your TAs, please don't burden them with grievances over experiences they do not have any ability to change or make right. Lobby them with me.
  - If a peer in COMP110 is burdening you, or a group, with grievances beyond your control. Please encourage them to channel their energy in this direction rather than yours.