Welcome to COGS 18:
Introduction to Python

COGS 18

Jason Fleischer, PhD
UC San Diego
Department of Cognitive Science
✉jfleischer@ucsd.edu

Reminder: This is being recorded

TAs

IAs

Shivani Bhakta

Note: CodingLabs begin Week 1; Office Hours begin Week 2

Remote and (maybe) in-person Learning

1. Lectures will be recorded/podcast and simultaneous Zoom.
2. Attendance will be neither required nor incentivized.
    a. BUT in-person is a great way to be an active learner!
    b. Active learning is better learning!
3. Exams will be take-home.

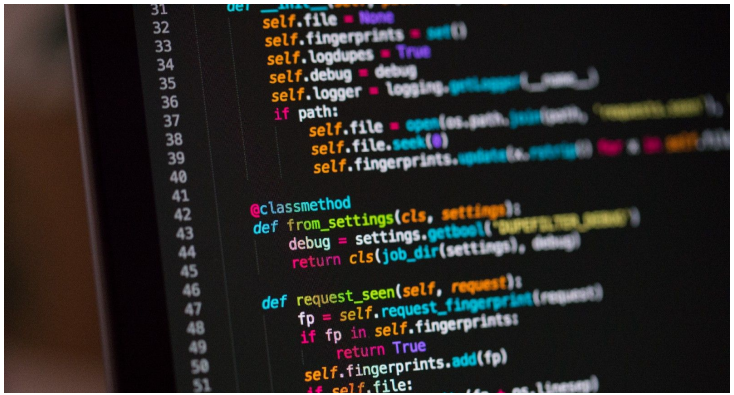
The (dreaded) waitlist

1. I do not handle the waitlist - our staff (cogsadvising@ucsd.edu) do
2. I do not have access to the waitlist nor the system that enrolls students from the waitlist.
3. Typically ~3-5 students from each section are enrolled by our staff
4. The waitlist clears at the end of week 2.

If you email me about the waitlist or your specific circumstance/need to take this course this quarter, I will point you to cogsadvising@ucsd.edu.

Let's chat: Teaching & Learning Programming

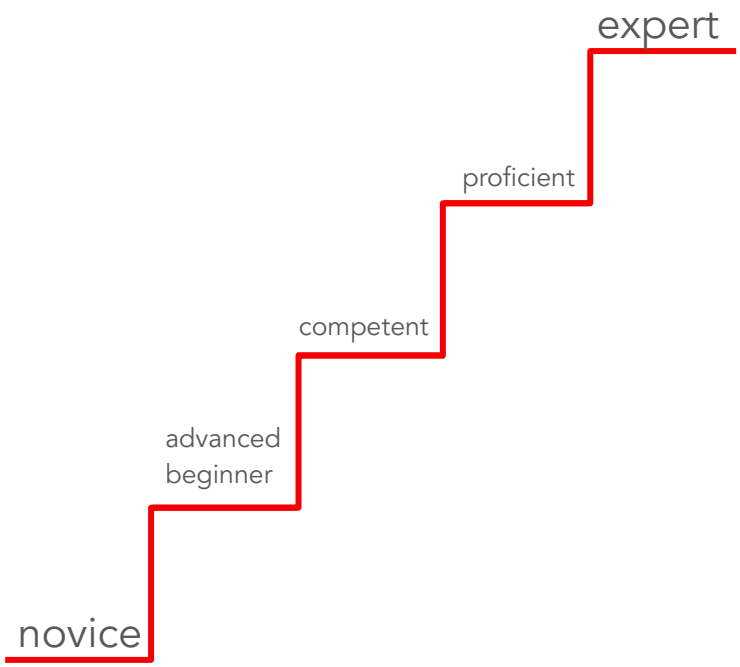
Intro Programming courses are often thought of as difficult and are courses with the highest dropout rates



….yet, the only thing that is slightly predictive of success in an intro programming course is…*how successful the student thinks they will be*

Things that do NOT predict success:

- gender
- age
- personality
- math ability

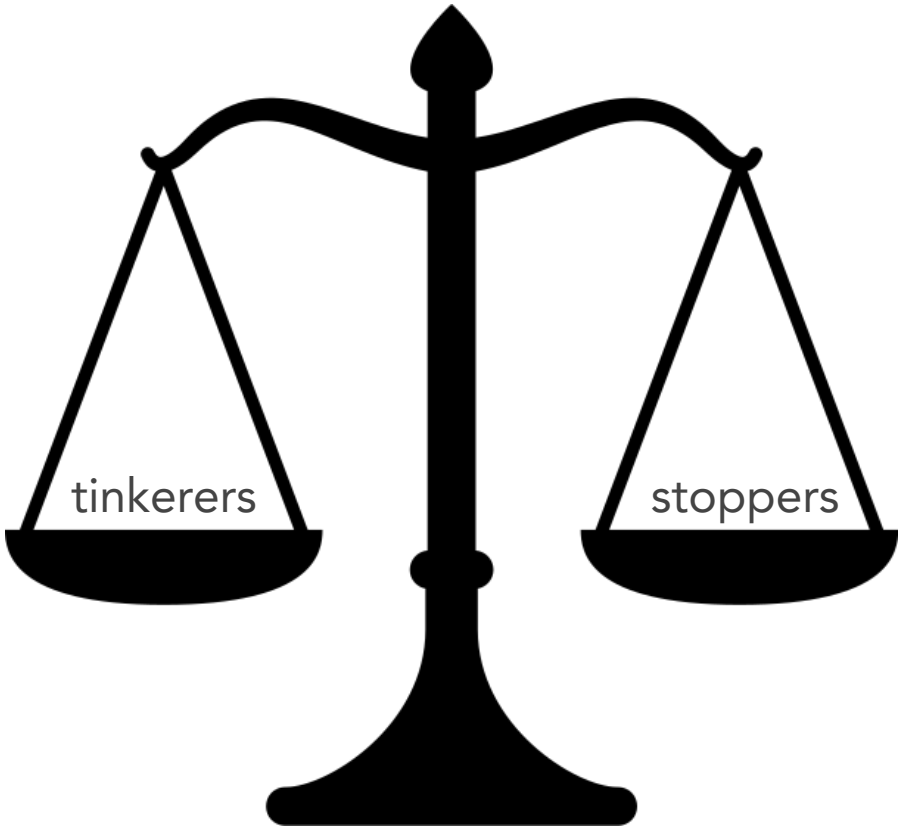


My goal is to have you all be able to program at an introductory level

It's generally accepted that it takes people 10 years to move from novice to expert programmer. But, there are lots of steps in between! We're working to move you further away from novice (& in the direction of expert) than you are right now.

Mixed Messages: We tell people learning to program will be tough and frustrating but that if you're not having fun, you're doing it wrong.

Building Blocks: Too often, we also tell people to "just try things out" without explaining basic concepts. Other courses aren't taught this way...



Be a mover: Make forward progress. Strike a balance between just stopping and tinkering forever.

If you’re not moving forward, consider the 2-hour rule.

If you’re trying to figure something out and struggling to move forward at all, consider the 2-hour rule. If you’re stuck, work on the problem for an hour. If you’re still stuck, walk away & take a 30 min break. Then, try again for another 30 minutes or so. If you’re still completely stuck, stop and contact us (come to office hours, post on Campuswire). If you’re not even sure what your question is, include what information that you do have have - what you’re stuck on, what you’ve tried, error messages you’ve received, etc.

Why Python?

simple(r) syntax

widely-used

Jupyter Notebooks

"It's not the best language for anything, but it's the second best for everything"
-Brad Voytek

COGS 18: How this course is going to work

To avoid the common pitfalls of intro programming courses, we're going to take the following approach:

1. First 2/3 of course: basic concepts
2. In-class practice (no stakes)
    a. Zoom poll questions for comprehension
    b. time to apply what was just explained
3. Coding Labs (low stakes)
    a. Notebooks provided
    b. Staff/classmates there to help
    c. Checked for effort, not correctness
4. Assignments (mid stakes)
    a. Completed individually (*can* work together)
    b. Programmatically graded
5. Midterms (high stakes)
    a. Completed totally individually

COGS 18: How You'll Be Evaluated

	% of Grade	Requirement
Coding Labs	16%	Participate In 8 Coding Labs
Assignments	40%	Complete 5 assignments
Midterms	25%	2 midterms
Final	19%	Complete final project or final exam

CodingLabs: apply concepts discussed in lecture using coding labs (16%). Practice makes progress.

Attempt for full credit (2% each)

- Have to make a concerted effort to complete labs
- Coding Labs will be submitted on datahub
- Answers will be sent out the following week
- Can work with others

You should attend the section to which you're assigned. You *can* attend a different section. However, if one section becomes too crowded each week, we'll revisit this policy.

(5) Assignments (40%) : Jupyter notebooks that are completed individually & graded programmatically.

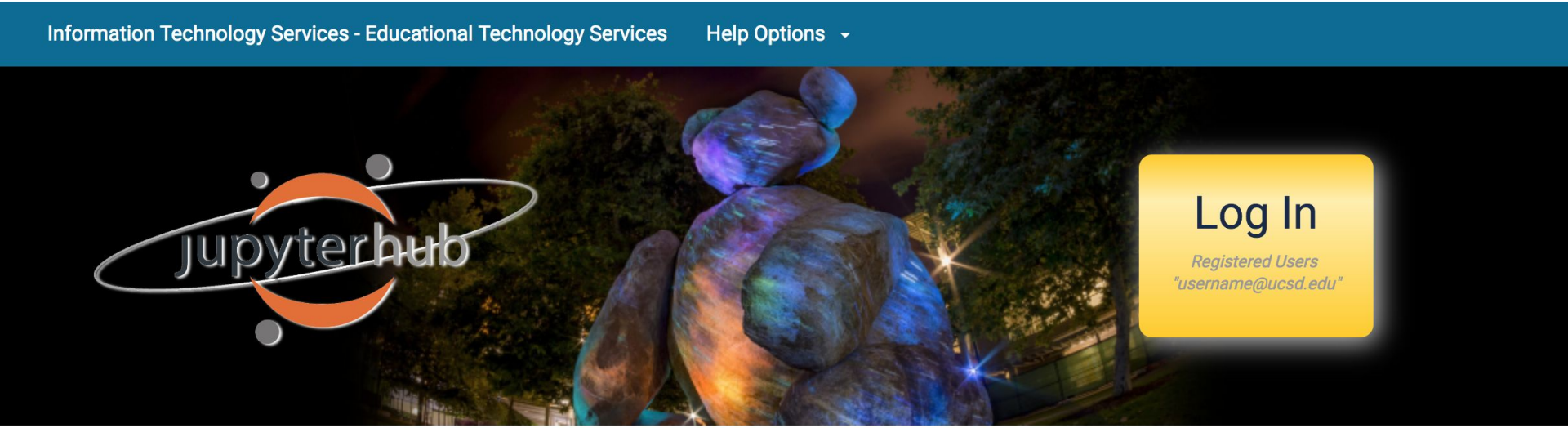
Assignments always be due @ 11:59PM.

Assignment	Week	Median Time Spent (hours)
A1	wk3	2
A2	wk5	4
A3	wk6	4
A4	wk8	5
A5	wk10	5

Assignment Submission @ Datahub: https://datahub.ucsd.edu

DATA SCIENCE / MACHINE LEARNING PLATFORM

UC San Diego



UC San Diego Jupyterhub (Data Science) Platform

In technical classes, Piazza is a particularly helpful resource

There are rules:

1. No duplicates.
2. Please tag with Assignment. Include Assignment & Question numbers in Summary line.
3. Posts must include your question, what you've tried so far, and resources used.
4. Public posts are best.
5. Helping one another is encouraged.
6. No assignment code in public posts.
7. We're not robots.

Sign up:

(2) Midterms (25%): will be open-book but completed individually.

Exams are open-book/open Google but completed on your own. Each will include a combination of types of questions. There will be a flexible time window when these exams can be taken/submitted.

(1) Final Project or Exam (19%): will be completed individually and submitted electronically on the day of the final.

It will be up to you which you do. The project will help you learn more and has the opportunity for EC and an A+ in the course, but takes longer. The exam takes less time, but the highest grade you can earn in the course is an A and must be completed on your own. You do not have to show up anywhere on the day of the actual final.

All exam and due dates are all listed on the course syllabus and are in Canvas

COURSE SCHEDULE

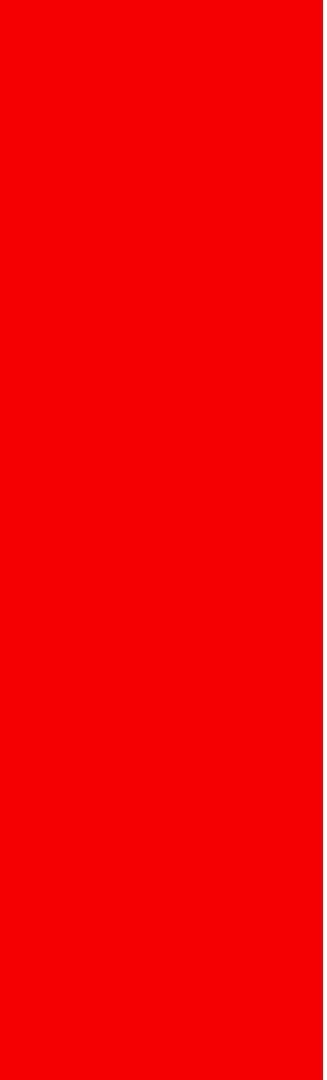
Date	Week	Lecture	Day	Topic	Assignment/Exam (11:59 PM)	CodingLab (11:59 PM)
1/3	1	1	M	Introduction		
1/5	1	2	W	Tooling & Integrity		CL1: Tooling & Integrity
1/7	1	3	F	Variables		
1/10	2	4	M	Operators		
1/12	2	5	W	Functions I		CL2: Programming I
1/14	2	6	F	Functions II		
1/17	3	–	M	**No Class**	A1: Getting-Started	
1/19	3	7	W	Conditionals		CL3: Functions
1/21	3	8	F	Debugging		
1/24	4	9	M	Collections [*]		
1/26	4	–	W	Review		CL4: Programming II
1/28	4	10	F	Loops I	**E1**	
1/31	5	11	M	Loops II	A2: Ciphers	
2/2	5	12	W	Dictionaries		CL5: Loops

Your point of contact for COGS 18 will be the course website: https://cogs18.github.io

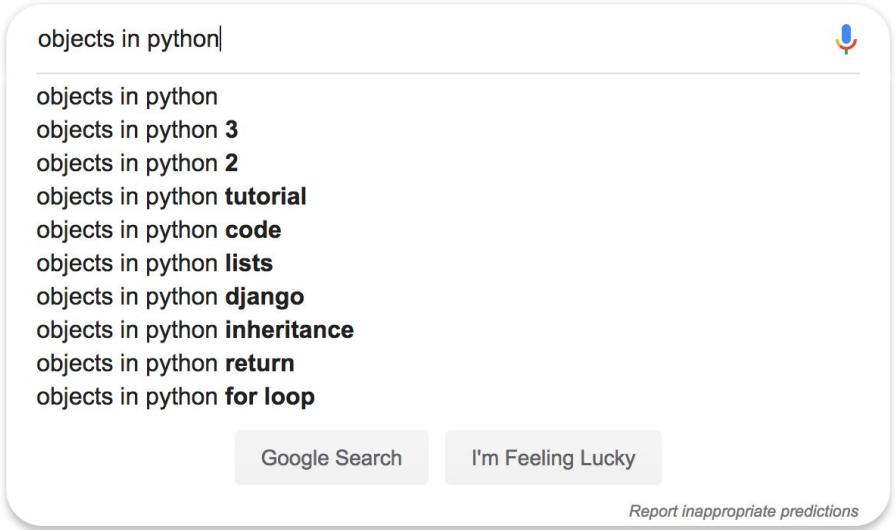
Course Website	https://cogs18.github.io	syllabus, Coding Lab Answers (& lecture notes)
Campuswire	https://campuswire.com/p/G9193CB28 (course code on canvas)	questions, discussion, regrades
Canvas	https://canvas.ucsd.edu/courses/33580	grades, lecture videos, zoom links
Datahub	https://datahub.ucsd.edu/	coding labs, assignments, exams, (& lecture notes)
Lecture Slides	Link also on Canvas	Syncing to get most recent lecture slides
Daily Lecture Survey	Link also on Canvas	Daily feedback after lecture (extra credit toward final exam/project)
Anonymous Feedback	Submit via Google Form	if I ever offend you, use an example you hate, or to provide general feedback

Any questions about course logistics?

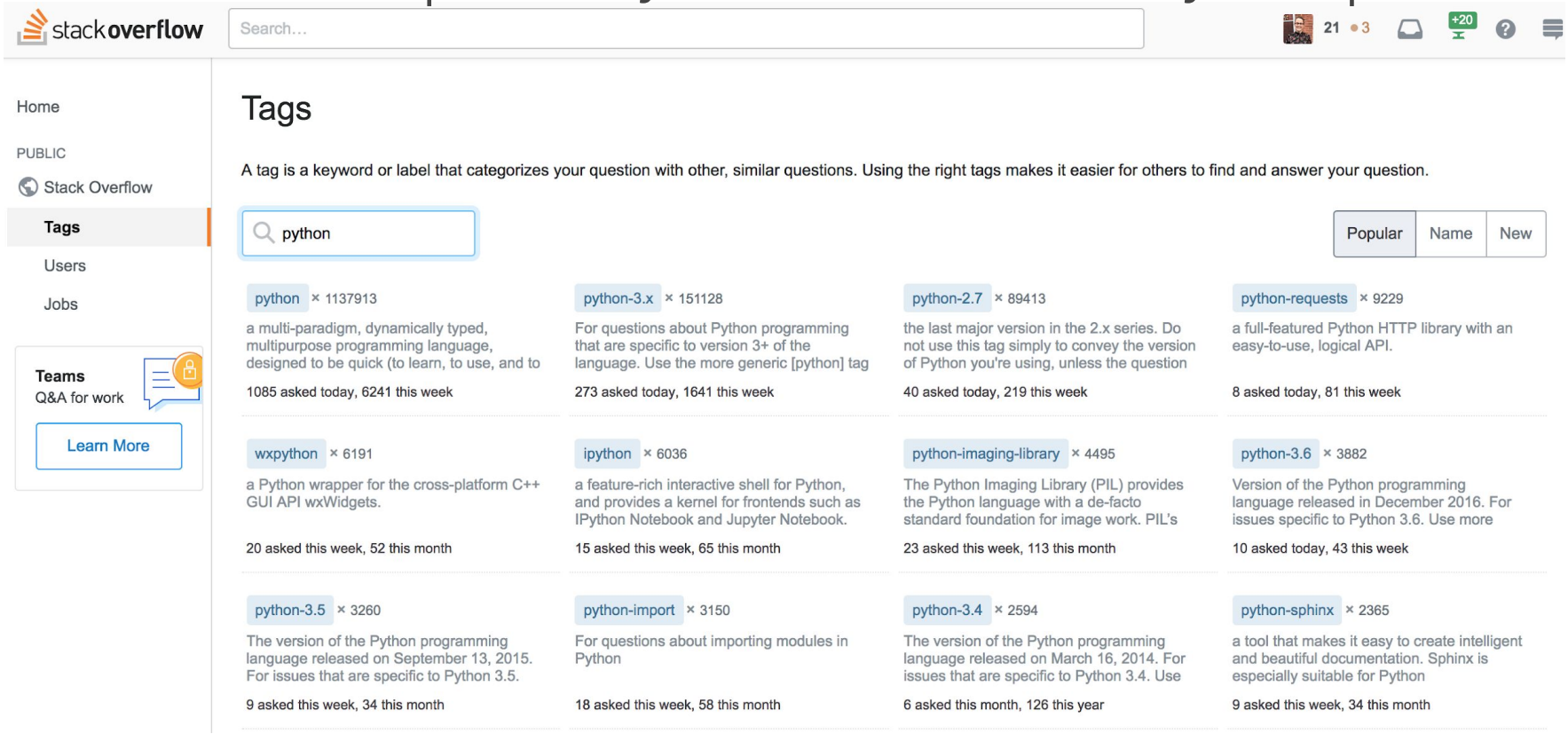
Where to turn for help and practice when learning to program?



Including “in python” in your Google search can be magic



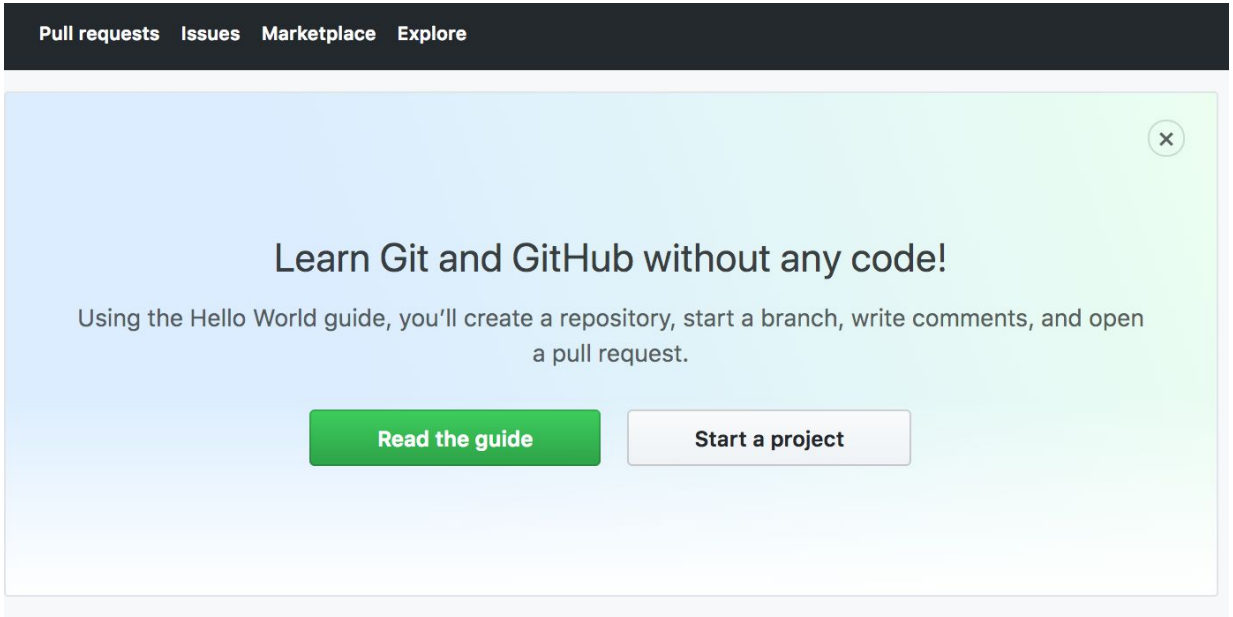
StackOverflow probably has the answer to your question



https://stackoverflow.com

GitHub: programmers' social media platform

Code is shared on GitHub. In the beginning, it may be intimidating, but I encourage you to familiarize yourself with the platform and share code you write on GitHub.



https://github.com/

There are also COGS18-specific avenues when looking for help

Questions in CodingLabs, coming to office hours, talking to your classmates, or reaching out for help on Campuswire are all options for you. You're encouraged to help one another on Campuswire!

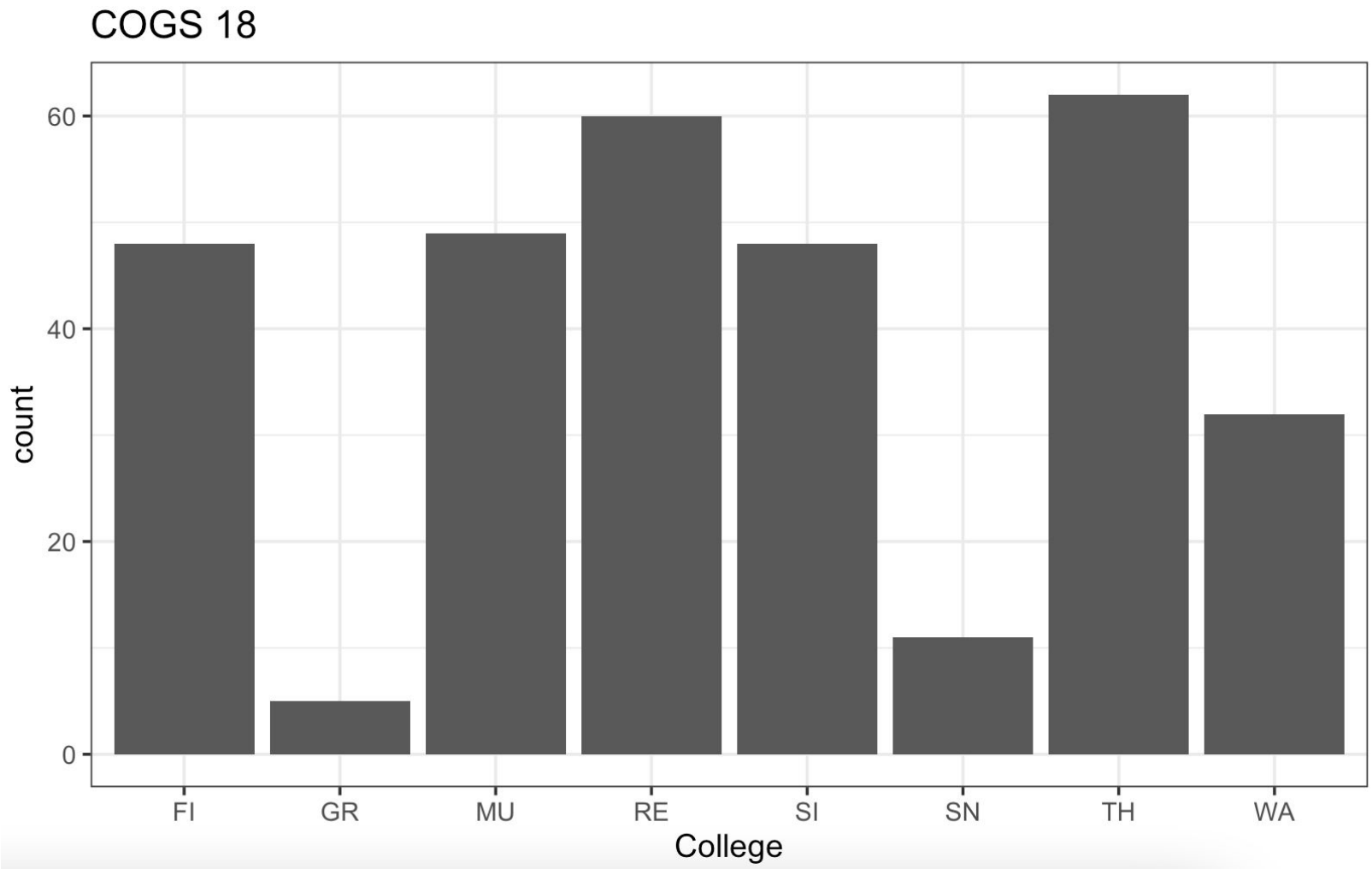
A message for first-gen students, transfer students, and those who don't have older siblings/friends who have attended UCSD/university

If you are struggling, come to office hours. Ask questions on Campuswire. Reach out to me to ask for better approaches. Your classmates ARE doing this. And, you're not alone.

If you need a bit longer on something b/c you fell sick, a family thing came up, work called you in for an extra shift, etc., ask for an extension. Your classmates ARE doing this.

Today I used a PDF slideshow, but every other day of class, lecture notes will be presented in a Jupyter notebook


hello
my name is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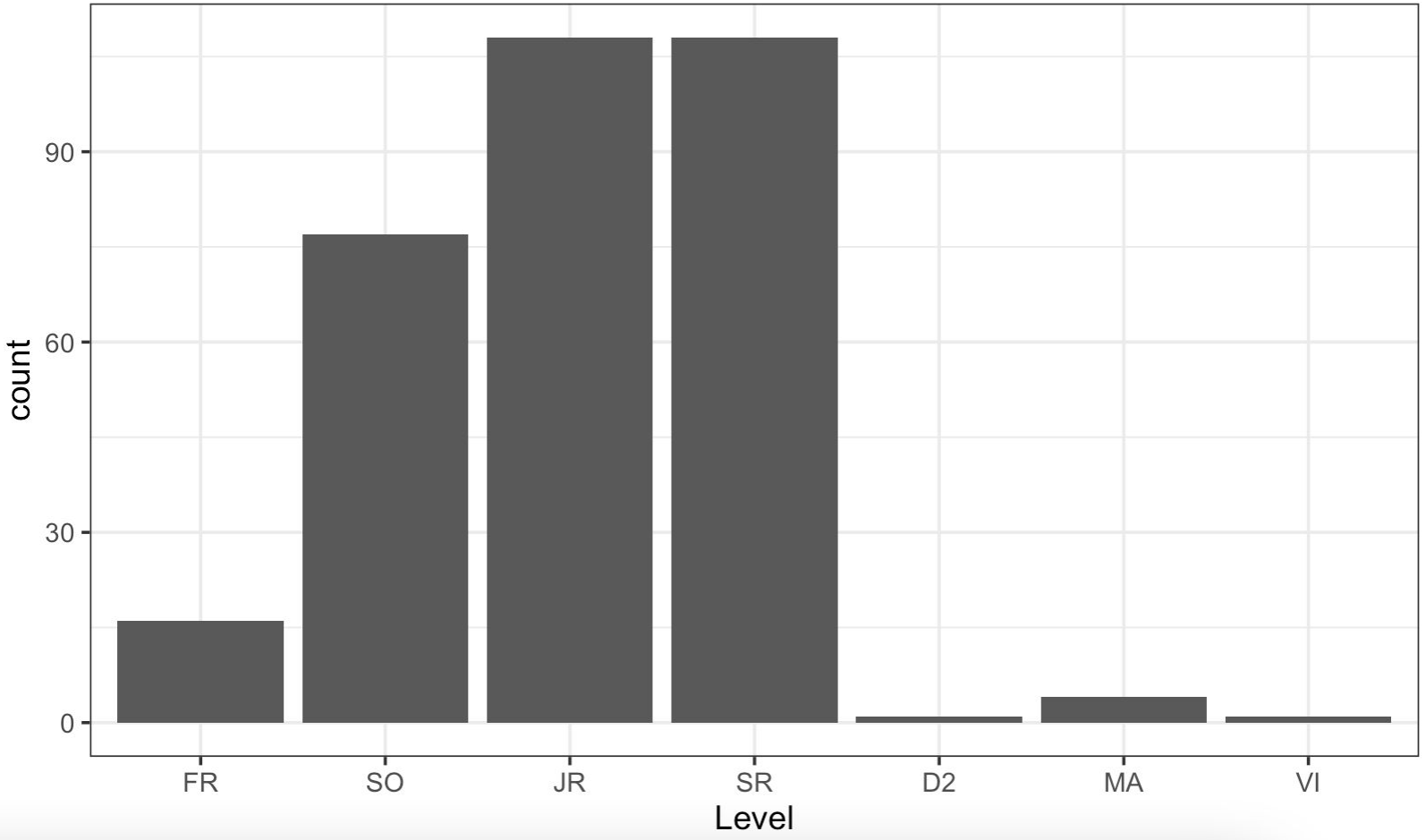

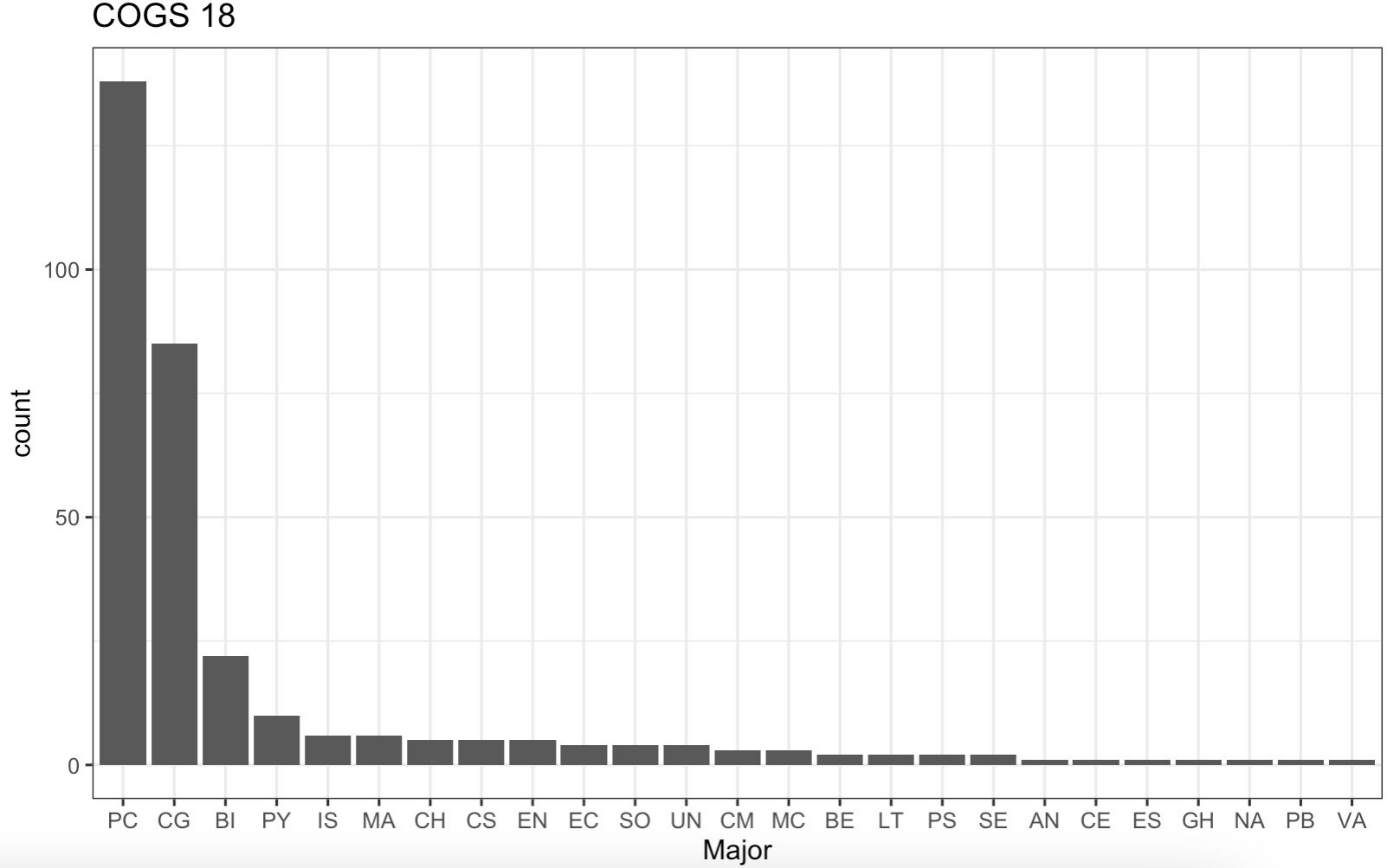
COGS 18
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PC CG BI PY IS MA CH CS EN EC SO UN CM MC BE LT PS SE AN CE ES GH NA PB VA
Major

I'm excited to have you all in COGS 18 this quarter & I'd love to learn more about you: Link to Survey (link also on Canvas)

…and reminder for daily lecture survey

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