Welcome to CS 42!

Why?

Full name T. 9/4

What?

CS 42:
Principles & Practice
of Computer Science

CS 42:
Principles (& Practice)
of Computer Science

The Principles in CS 42

Theory of computation & Machines (~4 weeks)

What is a computer?

no code!

Functional programming (~ 4 weeks)

There is no difference between functions and variables.

no loops!

no assignments!

Problem-solving techniques (~ 3 weeks)

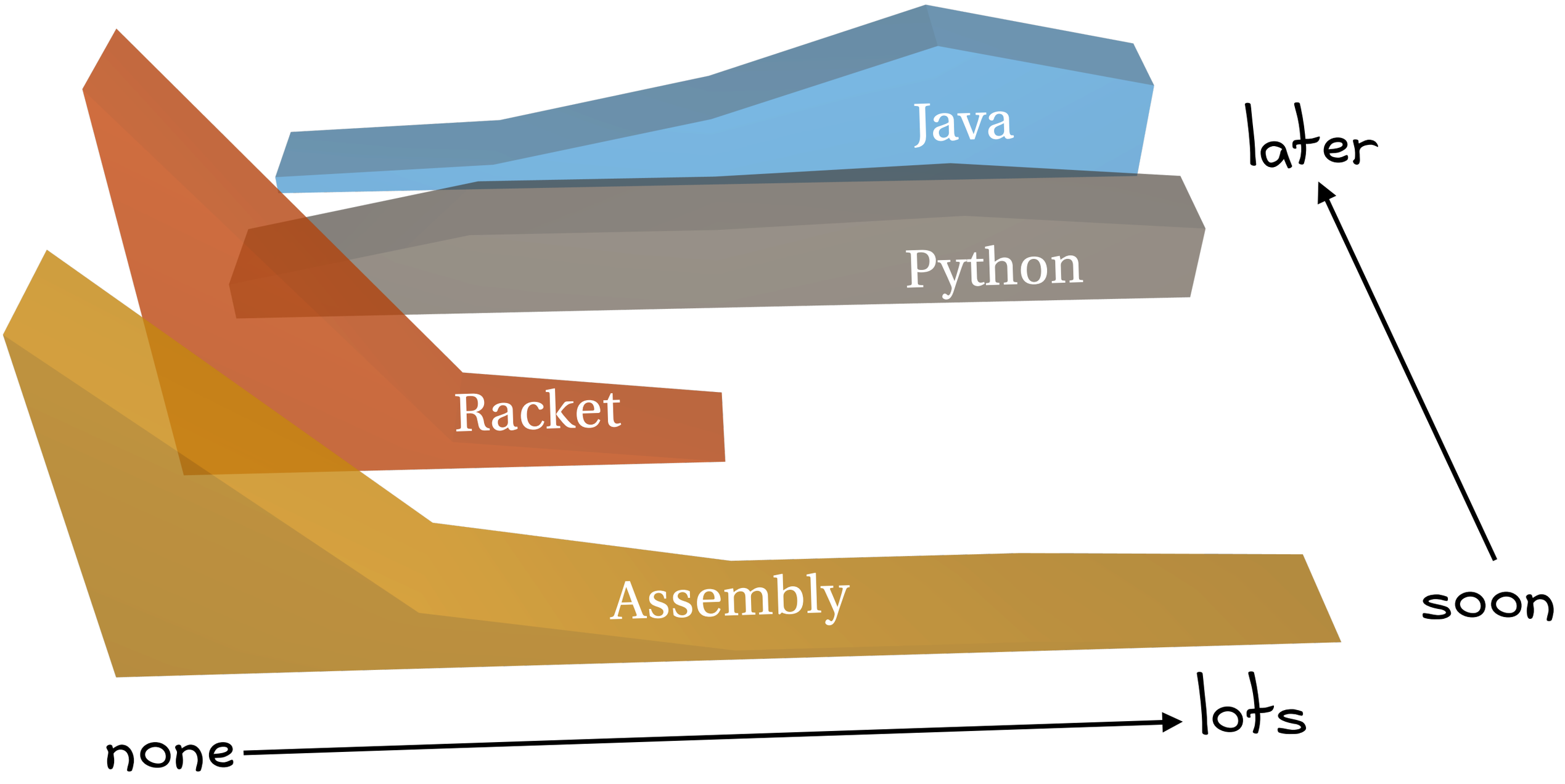
Algorithms & Data structures

What is Computer Science?

Object-oriented programming (~ 3 weeks)

How do we design a program so that it can grow and change?

Prior experience: programming languages



How?

Three kinds of work

In-class

Why? introduce new skills and concepts, provide context, discuss implications

How? lectures, small-group discussions, exercises

Assignments

Why? practice skills and concepts

How? usually by making things

Due **Tuesdays at 11:59pm**.

Pair-programming encouraged.

You can skip one assignment.

You can turn in two assignments up to one day late, each.

Exams

Why? build deeper understanding of concepts

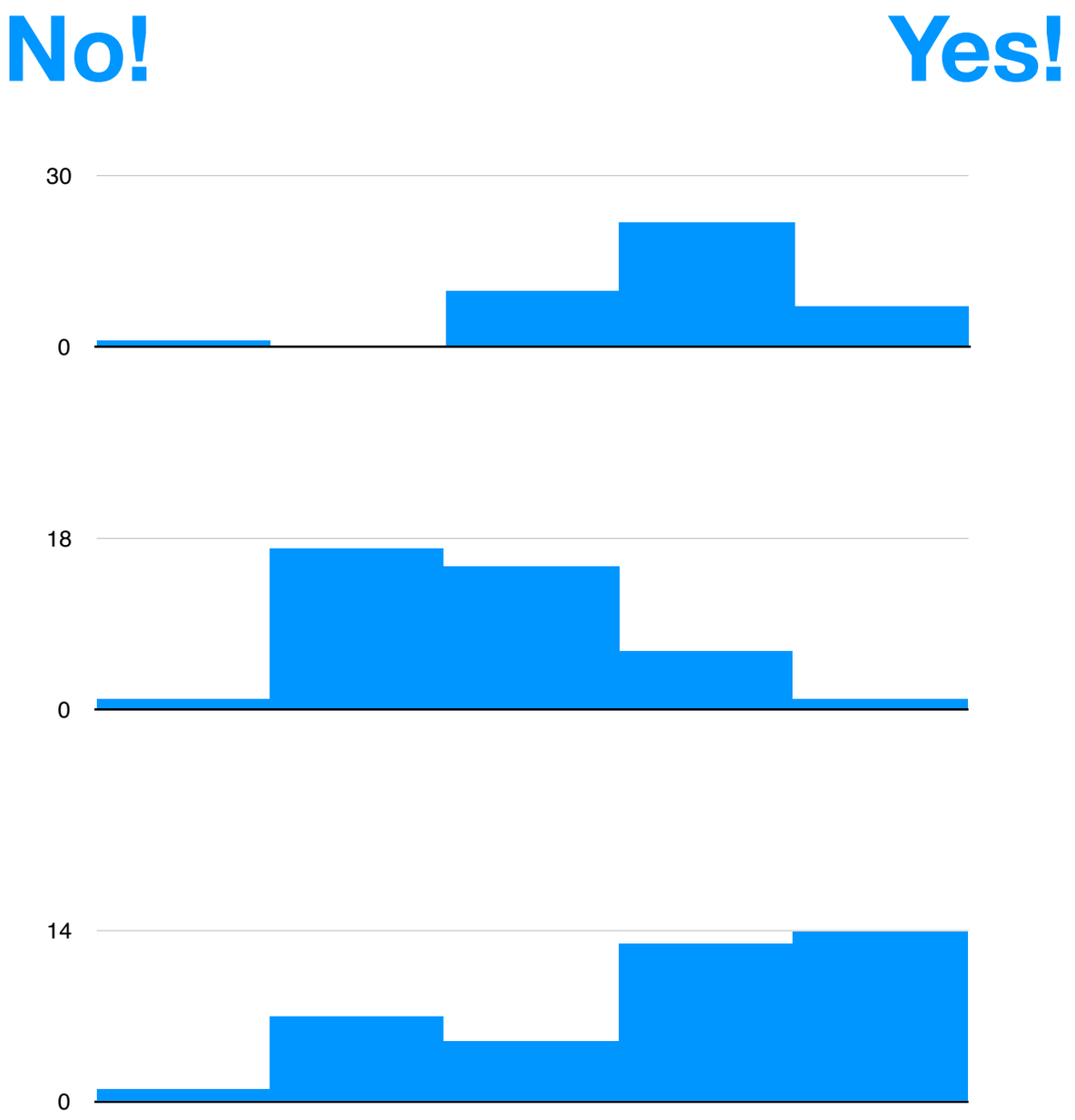
How? apply familiar concepts in new contexts

Take-home midterm 1: **September 30–October 7**

Take-home midterm 2: **October 28–November 4**

In-class final: Tuesday, **December 18 at 9am**

Learning style



I expect you to

Be academically vulnerable.

Encourage yourself to stay engaged.

Look out for everyone else.

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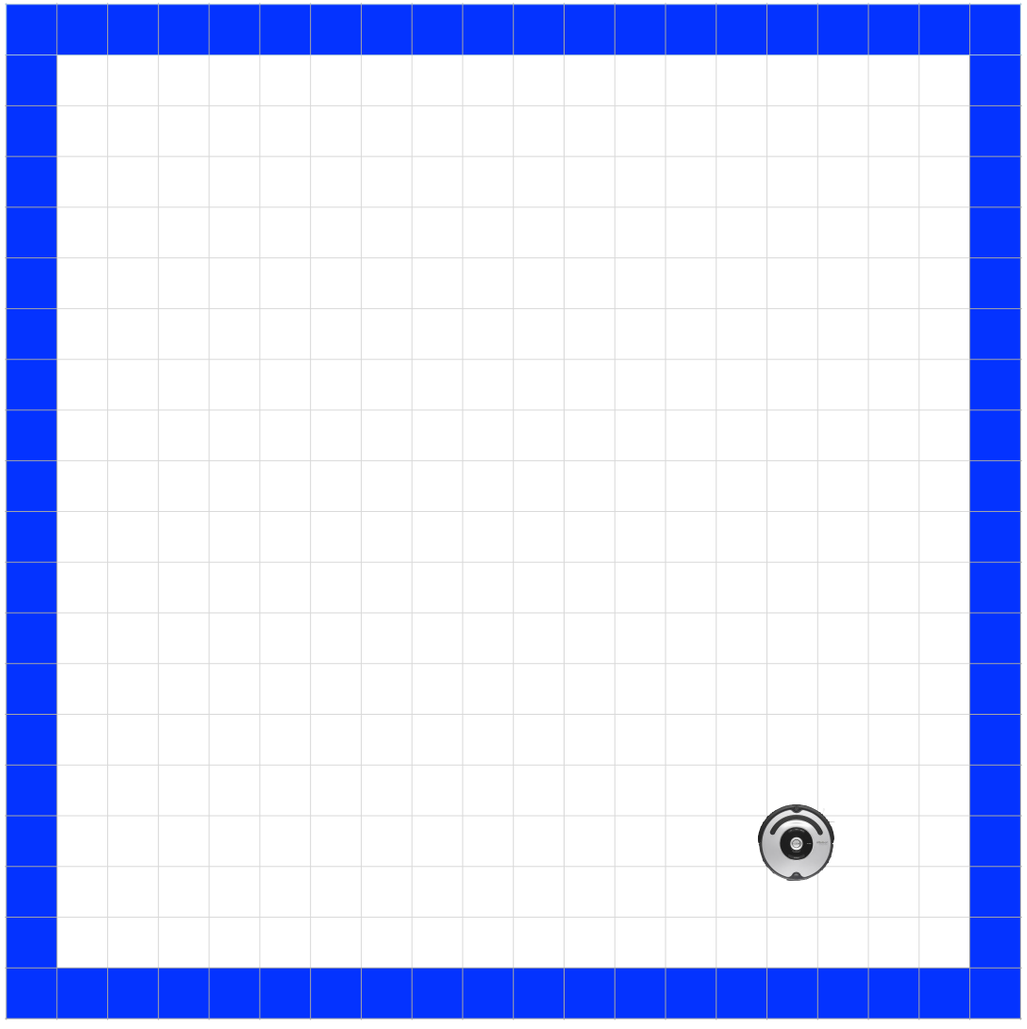
A computational problem



https://lh3.ggpht.com/-bgG1v8KK3tg/Tr-7Lt8zUqI/AAAAAAAAGCA/aqs69ExfnKI/s640/irobot-roomba-560.jpg

How can the robot cover every non-wall space in this empty room?

A robot can sense whether there is a wall or not.

A robot can sense one space to its north, east, west, and south.

CS 42 at a glance

www.cs.hmc.edu/cs42

Read syllabus for course policies, grading, etc.

All communication happens in person or on Piazza.

There’s lots of support—we’re here for you!

your friendly
CS 42 grutors

Important places

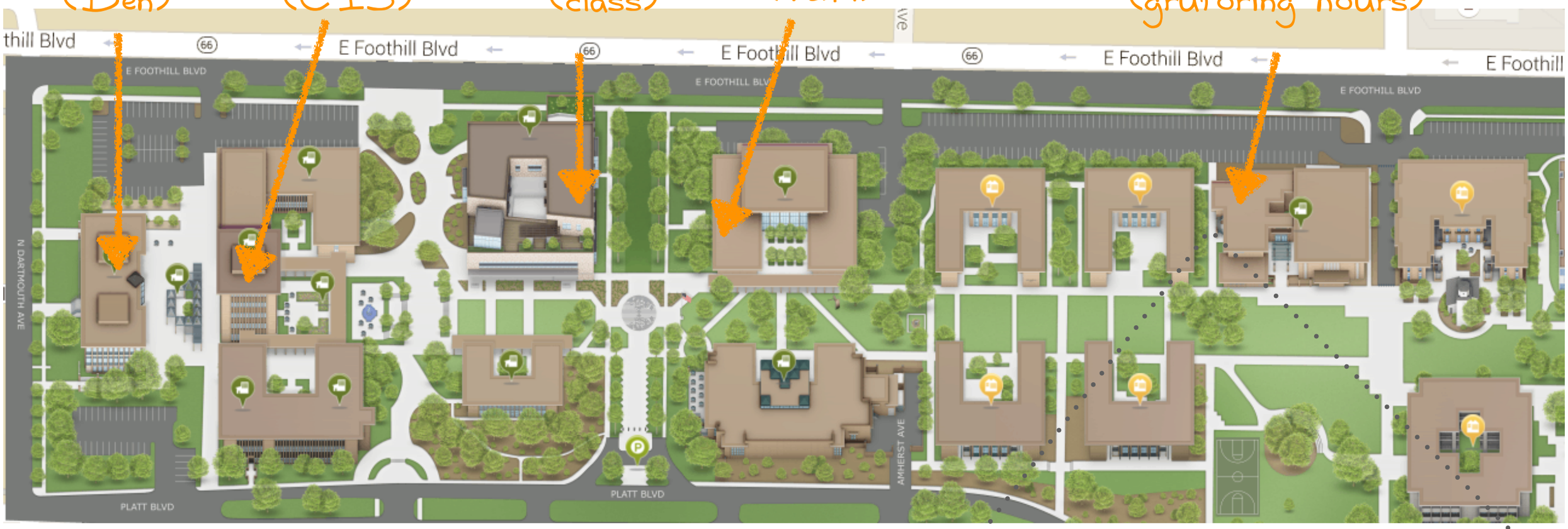
Olin (Ben)

Sprague (CIS)

Shan (class)

Platt (F&M)

LAC (grutoring hours)



Physical access: F&M

Electronic access: CIS

See also: www.hmc.edu/map/

My office

Olin B161C

Honor code interpretation

It’s all about building your own learning and looking out for others’

“In your head” rule.

See the syllabus for more detail.

If you’re not sure, ask.

We are *learning* ethical practices. We *will* make mistakes.

What *is* Computer Science?

What are the pieces we study?

What is *not* CS?

What do Computer Scientists *do*?

Is CS different from programming?

What is Computer Science?

Not a definitive definition!

Computer Science is the **study** of how we can **automate** our ability to **generate**, **transform**, **store**, and **retrieve** **information**.