

Welcome to CS125

Put on a name tag and find out who's in your section!



Find potential study and lab partners.

Search for one person from your dorm.

Search for one person in the same major.

Search for one person most different from you.

Search for one person that has had programming experience.

Search for one person that has no programming experience.

Say hi to the course staff and learn their names and interests.

- Learn 5 other student names.*

Computational thinking

Sections are required part of the course; you have a lot to do and loads to learn.

Hey loud confident people! Encourage ideas from everybody in your group. This is not a 'look how much I already know!' but a 'who can work together as a team player and help others too'

You can use the dry-erase boards.

Be prepared to present your answer to the course staff and other groups.

If you understand it, explain it to others in your group.

Challenge 1: Parallelism

Imagine a room of 32 students. Each student has an integer (between 1 and 10) and refuses to do any calculation. The TA needs to add up all of the numbers.

If it takes one second for a TA to ask a question to another person and get a response, it will take 32 seconds to calculate the total.

How long will it take if you had two TAs? (Hint it's not 16 seconds)

How long will it take if you had four TAs? Eight TAs?

Explain how...

You can add 1024 student numbers with 8 TAs in 135 seconds.

You can add 1024 student numbers with 8 TAs in 131 seconds.

Bonus: What's the pattern? Can you generalize this?

Challenge 2: Debugging

You give all 32 students the same number and you have 4 TAs.

Strangely the last TA that calculates the total and consistently gives you the wrong answer. There's a bug somewhere!

Think of 5 **very** different reasons of how the machine might be broken e.g. TA#X can't understand the British accent of TA#Y

i) Write them down:

ii) Now design a 'fix-it-manual/debugging help.

Starting from a broken machine, what steps are needed to narrow down problem so you can identify exactly where the fault is?

Challenge 3: Testing

You're ready to start selling your 4 TA-powered parallel-adding-machine. Before shipping your TA-machine you decide you better have a set of test problems, to make sure it's working properly!

For the first test, you set all the students' values to one and check the output is 32. Is this a sufficient test?

Would it catch all possible ways in which your machine might be broken? What test cases would you use to try to ensure your machine was working properly? Try to enumerate (=list) at least 5 important tests you'd run.

If you wanted to enumerate all possible input values, how long would it take? Hint: There are roughly 10^7 seconds/year. The Universe is roughly 15bn years old.

Today's Achievement Points



Source: <http://gotsmile.net/12345/smiling-face-dog>, <http://blog.playhem.com/?tag=disconnects>

- ✓ Login and set up Eclipse and subversion on lab PCs
- ✓ Execute a Hello World Java program
- ✓ Use Subversion
- ✓ Post on Piazza
- ✓ Set up your laptop
- ✓ Mystery one-on-one TA time

Forgot your laptop today? Bring it to a later section!
Lab instructions here: <http://tinyurl.com/cs125labs01>