

INTRO TO PROGRAMMING WITH PYTHON

FUNDAMENTALS:
PROGRAMMING IRL

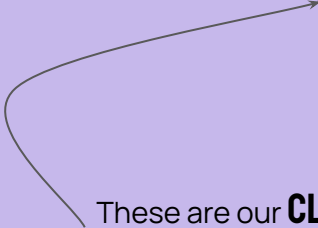
Friday, February 7 2024 TOH210



COLAB WORKBOOK

Overview + how to fill out workbook

Link: [click for access](#)

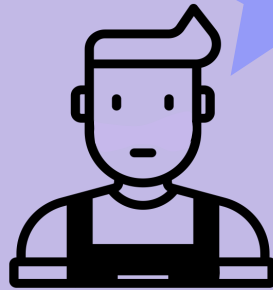


These are our **CLASS NOTES**. They allow us to run code chunks and type in text (sort of like a Word doc that lets you also code)

These are NEVER due. They help to solidify your learning, so make sure to complete them outside of class if we don't finish them during.



WARM UP

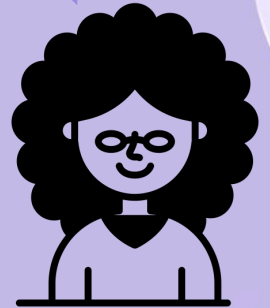


GRUMPY BARISTA

Ummm yeah is
no one else
concerned
about this?



TERMINAL



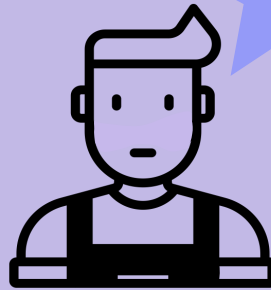
DUKE OF DECAF

Well at least it
won't scare off all
our customers



DISCUSSION

Discuss with your group, taking notes as you go. Once you've discussed, have some folks add answers to the board for what you can do with CS, and one person answer what CS is.



GRUMPY BARISTA

Sooo what is computer science then?

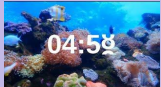


TERMINAL

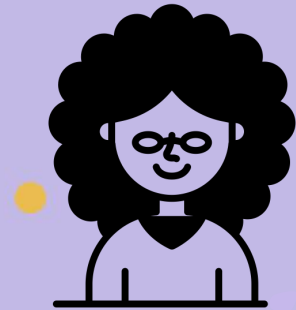
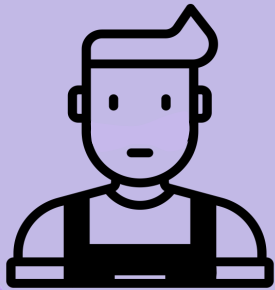
Yeah! And what can you do with it?

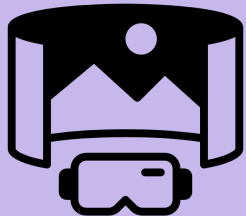


DUKE OF DECAF



> > computer science
involves working with
people to use
computers to **solve**
problems





GRAPHICS

game design +
GIS
= virtual reality

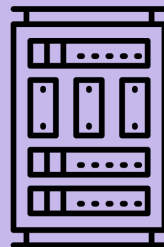
OPERATING SYSTEM

connected +
parallel
= cloud computing



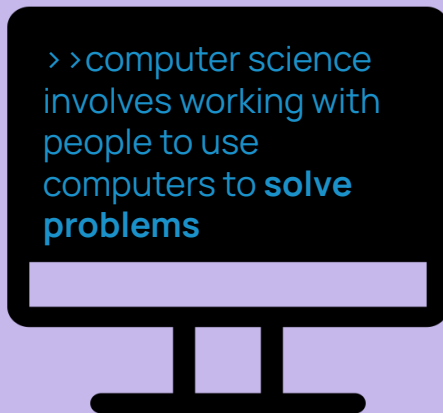
ARCHITECTURE

supercomputers +
parallel computing
= weather forecasting



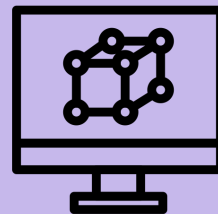
HUMAN-COMPUTER INTERACTION

NLP+
voice recognition
= virtual assistant



COMPUTATIONAL SCIENCE

simulation+
scientific method
= molecular
structure

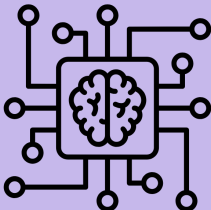


WEB DESIGN

website +
software
= social media

SECURITY

encryption +
data
= cryptography



ARTIFICIAL INTELLIGENCE

image classification +
EMR
= disease diagnosis



INFORMATION STORAGE

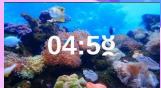
optimization +
large datasets
= big data



DISCUSSION

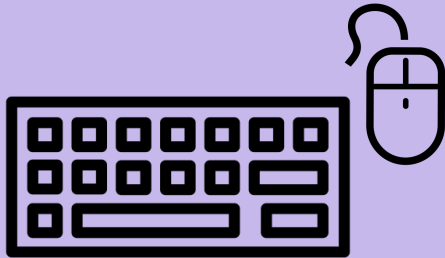
WHAT MAKES UP A COMPUTER?

What are some of the various components of a computer?
If you were to build a computer, what would you need to
source to do so?



MAIN COMPONENTS OF COMPUTER HARDWARE

Hardware is the physical parts of a computer and all work in tandem to run your machine. As computers grow smaller and smaller, hardware components have to scale appropriately by decreasing their size, generating less heat, and using less power.

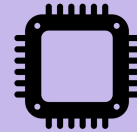
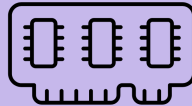


INPUT DEVICES

gather data,
similar to your
eyes/ears

MEMORY

stores data



PROCESSORS

examine/alter data,
similar to your
brain

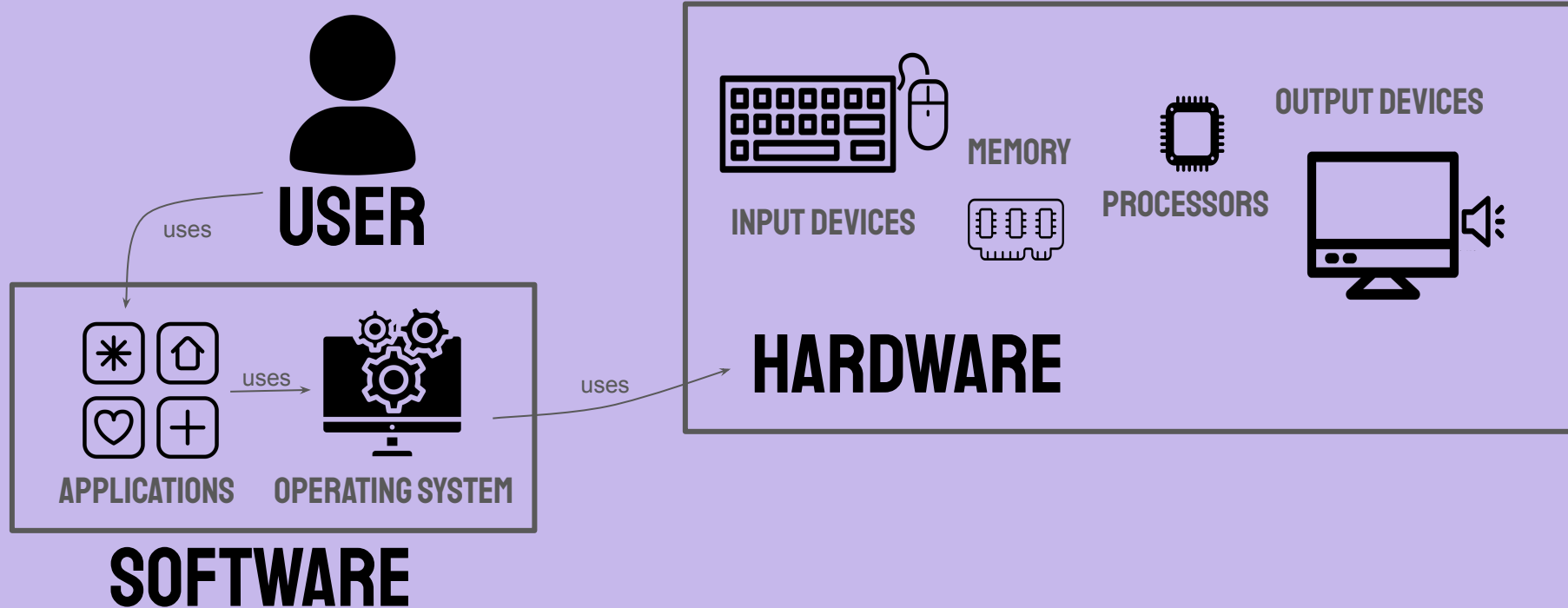
OUTPUT DEVICES

show results of processor's
alterations, similar to how
you speak/act after deciding
what to do



A COMPUTER'S SYSTEM IS BROKEN DOWN INTO TWO CATEGORIES: HARDWARE AND SOFTWARE

Hardware are the visible components, and software are the sets of instructions which manage and/or allow the hardware to perform tasks. In other words, **software are where algorithms live**.



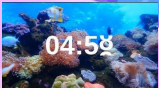


DISCUSSION

Discuss with your group, taking notes as you go. Once you've discussed, have two people add at least two answers to the board.

HOW DO WE GET BETTER AT THINGS?

Think of something you're good at. How did you to where you are at now?





CODE A LOT

practice makes perfect
(or at least proficient)



HAVE FUN!

be patient with yourself
and enjoy the journey



BREAK YOUR CODE

throw in weird values and see
what happens, or try rewriting



BE INQUISITIVE

read up on current events in the CS
space, or watch some live coding



HOW TO MASTER PROGRAMMING



ASK OTHERS

check in with peers to see how
they approach a task. seeing how
different people problem solve is a
great way to boost your own
knowledge base!

WORKBOOK TIME!

BEFORE NEXT TIME



Finish workbook (not graded)



Reading + Reflection 1 due Monday at midnight



About Me due Tuesday at midnight

