Coding Fundamentals ASPIRE

(8/11 - 12/12)

Helix Charter High School
Isabelle Viraldo

Week 12

Welcome!

- Mondays: Discussion + Activity
- Fridays: Review + Programming Exercise

What do you want to learn?

What do you care about?

What do you want to accomplish?

feedback!

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Topics I hope to cover:

- GitHub (How to use and let's set one up!)
- AI (Machine Learning vs Generative AI vs Image Detection, let's break it down (and make one of our own))
- How to code! (Some practical skills, and also best practices)
- Binary (What is it? Why is it important? Who cares?)
- Robotics (What do you need to get a robot working?)
- How does your computer work? (What do computers do when you're not looking?
- What do you want to learn?

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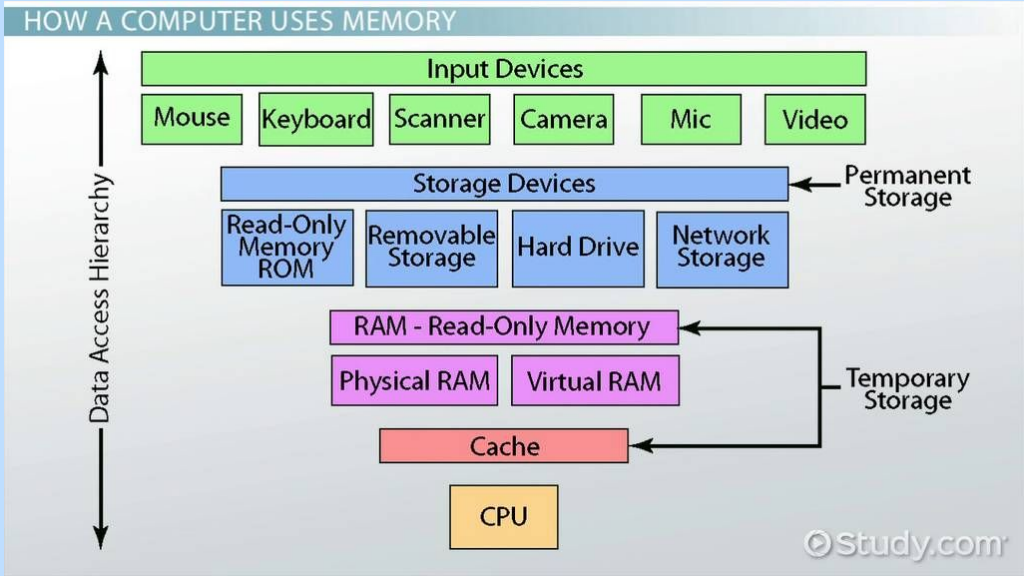
How does a computer work?

4 main parts:

- CPU (Central Processing Unit)
- Memory (cache or RAM)
- Storage (Disks or SSD)
- I/O (Input/Output)



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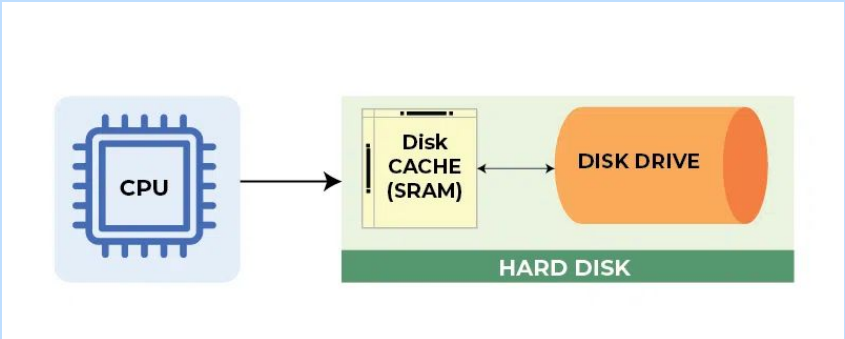
CPU is fast, memory is slow.

If you want to predict what data is about to be used, how would you do that?

- Data you have used recently
- Related data to what youre using right now

Store that data nearby the CPU to increase speed

Cache is fast, and can store some data



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Cache exists between CPU and RAM

[temporal locality] - Data you have recently used
[spatial locality] - Data related to the data you are using right now

CPU requests data -> check the cache:
Hit -> the data is found in cache, and can be accessed quickly
Miss -> the data is not found in the cache, must access through the RAM

RAM - Random Access Memory
- Requests data from the long term memory

Week 11

Coding activity! Get out your Chromebooks!

Everyone look up:

python online compiler

Or

Go to: https://tinyurl.com/yc4w9mdh

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