A Study Guide for **Computer Science**

SDS Group 13 Week 3 Meeting

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September 20, 2024

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The study of $\begin{cases} \text{What problems can be solved using computation,} \\ \text{How to solve those problems, and} \\ \text{What techniques lead to effective solutions?} \end{cases}$ [1]

Lots of different components:
Systems, Artificial Intelligence, Graphics, Security, Networking, Programming Languages, Theory, Scientific Computing...

[1] This definition is given by UC Berkeley.

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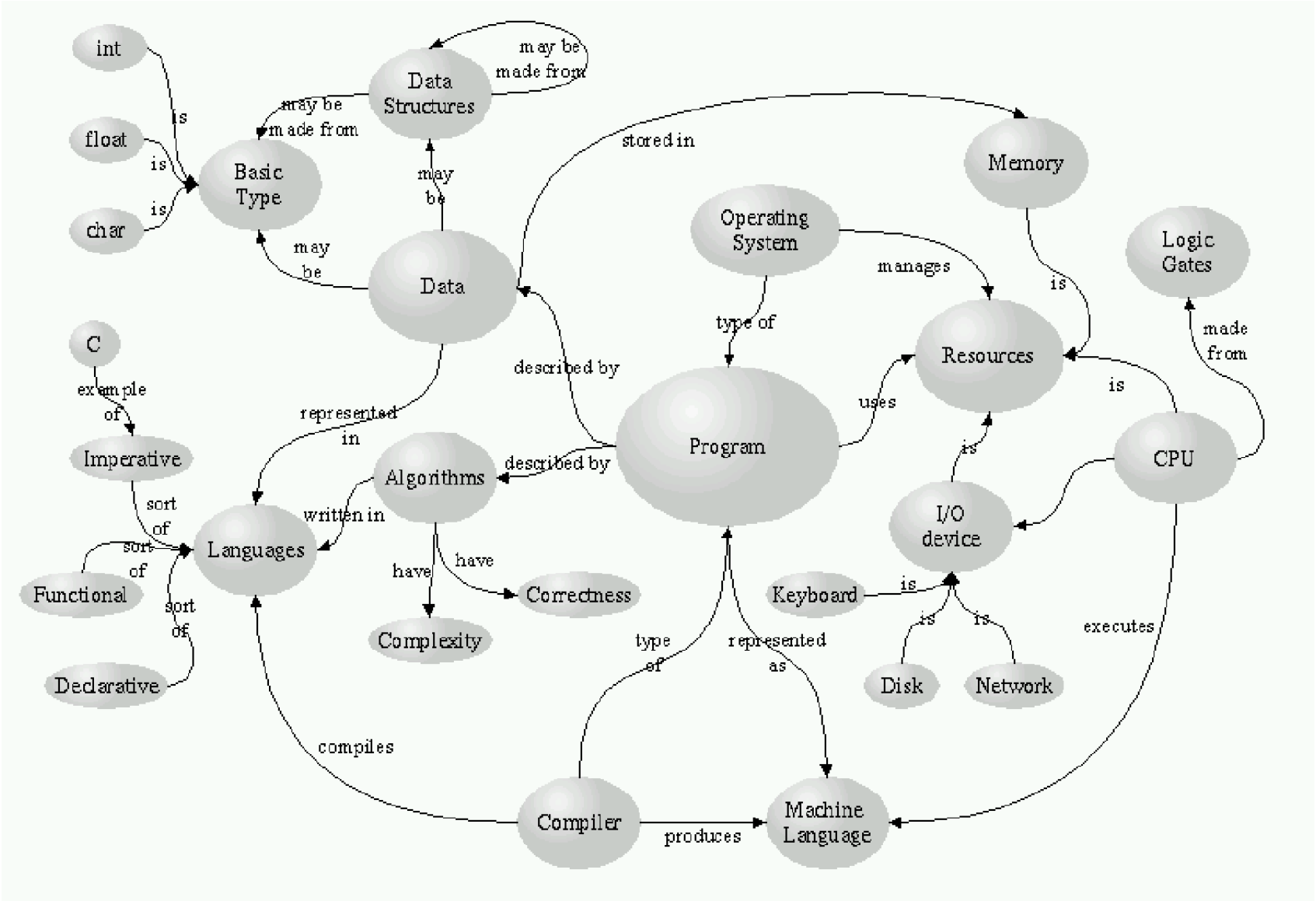
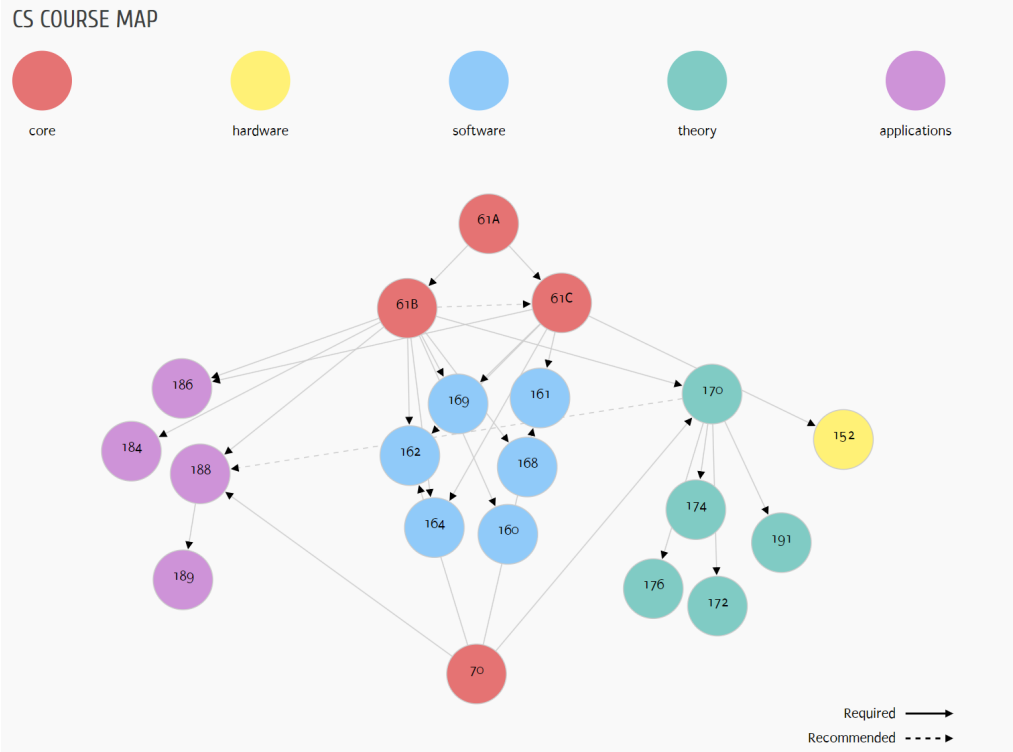
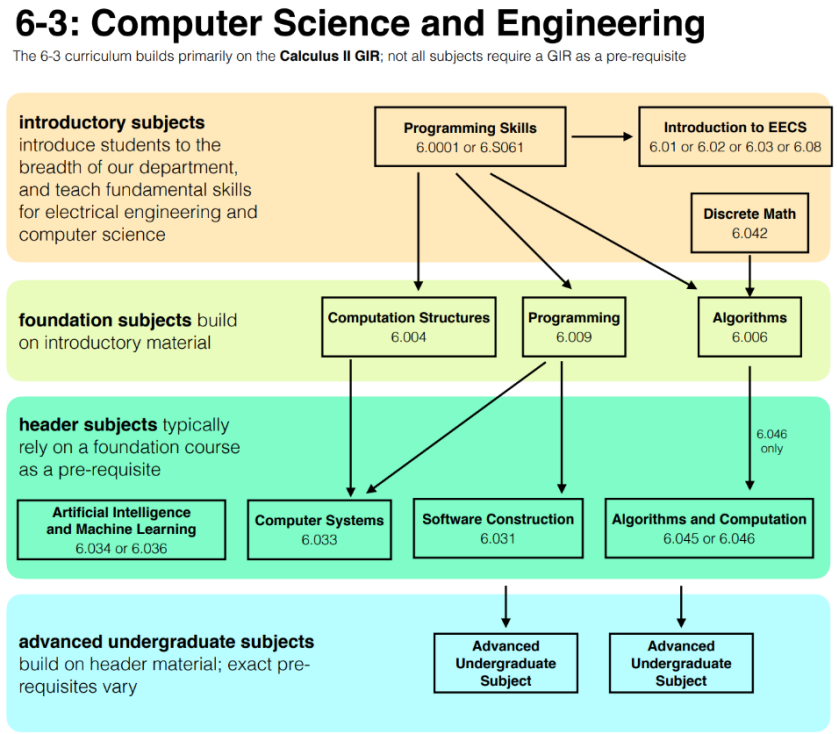
A Big Picture



Berkeley:



MIT:



For Students in Other Majors (School Package + Required)

- CSC1001 + CSC1002
- DS: CSC3100
- FE: CSC3001 + CSC3100 (FinTech Stream)
- MAT3007 + DDA3020 (AI related)

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Suggections: CS

- Enjoy your first CS course CSC1001/CSC1003!
- In class: Understanding Concepts
  After class: Coding
- Learn a code needs "2 + n" steps:
  1. Read the code, understand it.
  2. Change the code and try.
  3. Delete the demo, write the code by yourself again and again!
- Math is important! $\rightarrow$ Why $\rightarrow$ Understand essence
- Search first! Google, Stack Overflow, Github, etc.
  Learn to make use of the abundant resources on the Internet!
- How to ask questions?
  `www.catb.org/~esr/faqs/smart-questions.html`
- Use AI tools appropriately
- Transfer Learning

WE REMEMBER

10% of what we read

20% of what we hear

30% of what we see

50% of what we see and hear

70% of what we discuss with others

80% of what we personally experience

95% or what we teach others

- Edgar Dale

If you want to learn more beyond CSC1001/CSC1003,

- *Crash Course Computer Science*
  `https://www.bilibili.com/video/BV1EW411u7th/`
- *CS50: Introduction to Computer Science* by Harvard
  `https://www.bilibili.com/video/BV1jV411Q7L5/`
- *The Missing Semester of Your CS Education* by MIT
  `https://missing.csail.mit.edu/`
- *CS61A: Structure and Interpretation of Computer Programs* by Berkeley
- Java API
- Python Official Document
  `https://www.python.org/`
- Project-based learning: Learn from a big project (CSC1002/CSC1004)

Suggestions

- Explore!!! Find your interests!
- Attend various activities!

If you have any questions, feel free to reach out :)

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Most useful website:

- Google: `https://www.google.com/`
- Stack Overflow: `https://stackoverflow.com/`
- Github: `https://github.com/`

Some coding practice platform (mainly for the study of CSC3100 and CSC4120):

- CUHKSZ OJ Platform: `https://oj.cuhk.edu.cn/`
- Leetcode: `https://leetcode.com/`
- Luogu: `https://www.luogu.com.cn/`
- ~~Codeforces:~~ `https://codeforces.com/`

Other useful guideline:

- Study Scheme: `https://sds.cuhk.edu.cn/taxonomy/term/183`
- SIS Course List: `https://sis.cuhk.edu.cn/`

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- Picture in Page 5 is selected from the slides of course CSC3002 by Professor Rui Huang.
- https://hkn.eecs.berkeley.edu/courseguides
- https://www.eecs.mit.edu/academics/undergraduate-programs/curriculum/6-3-computer-science-and-engineering/#

Thanks!