

Why do we care?

- Understand capabilities of computer systems:
 - Know what hardware to buy/recommend
- Understand the native language of the computer systems.
- Understand compilers, OS, networks, etc.
- Improve code:
 - Faster performance
 - Better use of I/O (e.g., DB, ntwk, etc.)
 - Better interaction with OS, networks, etc.
- Reverse engineering
 - You have the executable but not the source.
 - Include the scenario of studying computer viruses.

Why do we care?

- Programming in assembly language forces one to be detail-oriented
- Understand of how a complex system is made up of layers in the context of computer systems. Important for all forms of engineering including software engineering.
- R&D in Computer Architecture for the generation of CPU/GPU chips
 - Computer Architecture research is also done in CS departments, not just Computer Engineering departments.