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Assembly Lang

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Question 1. What is Assembly Language? As a Computer Engineer why do you need to know   Assembly Language? Do different processors/computer architectures have different assembly languages

Assembly language is a low-level programming language designed for a specific type of processor. As a Computer Engineer you will need to know Assembly Language because in today's time, assembly language is used primarily for direct hardware manipulation, access to specialized processor instructions, or to address critical performance issues. Typical uses are device drivers, low-level embedded systems, and real-time systems. Each computer architecture has its own machine language. Computers differ in the number and type of operations they support, in the different sizes and numbers of registers, and in the representations of data in storage.

Question 2. Describe the Fetch-Decode-Execute cycle of the processor.

During the fetch execute cycle, the computer retrieves a program instruction from its memory. It then establishes and carries out the actions that are required for that instruction. The processors functions also fetch, decode and execute instructions given by the end user. The cycle of fetching, decoding, and executing an instruction is continually repeated by the CPU whilst the computer is turned on.

Question 3. Do you think your laptop processor and your cellphone processor go through this fetch-decode-execute cycle?

Yes

Question 4. What are registers? Why do the processors need registers?

Registers usually consist of a small amount of fast storage, although some registers have specific hardware functions, and may be read-only or write-only. Processors need register so they can quickly access the location available to a computer's processor.

Question 5. Name all the registers in 8086 Architecture? Write down their function in short.

The names of all the register in 8086 in short are, AX, BX, CX, DX, these can also be accessed as twice as many 8-bit registers, while the other four, SI, DI, BP, SP, are 16-bit only.