

In the beginning, computer architecture is focused on the design of the internal workings of a computer system, while computer organization is focused on the implementation of that design. Computer architecture is concerned with the high-level design decisions, while computer organization deals with the low-level implementation details.

Types of Computer Architecture

Given below are the types of Computer Architecture:

Types of Computer Architecture

01

Instruction set architecture (ISA)

02

Microarchitecture

03

Client-server architecture

04

Single instruction, multiple data (SIMD) architecture

05

Multicore architecture

1. Instruction Set Architecture

To make up the architecture, instruction set architecture is needed

because it has a set of instructions that the processor understands. It has

two instruction set one is RISC (reduced instruction set computer) and the second is CISC (complex instruction set computer).

Reduced instruction set computer architecture was realized in the 90's by IBM. Instruction has multiple address modes, but programs do not use all of them that is the reason multiple address modes were reduced. This helps the compiler to easily write the instructions, performed is increased.

Complex instruction set architecture is the root of compilers because earlier compilers were not there to write programs, to ease programming instructions are added. The best performance is obtained by using simple instruction from ISA.

2. Microarchitecture

Microarchitecture is known as computer organizations and it is the way when instruction set architecture is a built-in processor. Instruction set architecture is implemented with various microarchitecture and it varies because of changing technology.

Microarchitecture performs in a certain way. It reads the instruction and decodes it, will find parallel data to process the instruction and then will process the instruction and output will be generated.

It is used in microprocessors, microcontrollers. Some architectures overlap multiple instructions while executing but this does not happen in microarchitecture. Execution units like arithmetic logic units, floating-point units, load units, etc are needed and it performs the operation of the processor. There are microarchitecture decisions within the system such as size, latency, and connectivity of the memories.

Conclusion

We have learned about two computer architecture and its types. How functionality, implementation works in processing. Instruction set architecture is needed to do the needful instruction execution and **data processing should** be done in a different and single memory location in different types of computer architectures. Read/write operations are performed. In the last **Instruction Set Architecture** is the best .

