INSTRUCTION SET ARCHITECTURE (ISA)

The Instruction Set Architecture acts as an interface between the hardware and the software. The ISA includes the functions and capabilities of the central processing unit (CPU) as well as defining the supported data types, the registers, the instructions the microprocessor can execute, and the methods for accessing memory.

ORGANISATION AND MICROARCHITECTURE

Microarchitecture, also called computer organization is the way an ISA is implemented in a particular processor. Two computers with the same ISA may be implemented with different microarchitectures and hence may have very different performance metrics due to the differing goals of microarchitecture designs.

HARDWARE

The hardware is the physical components that the computer requires to function. This includes the central processing unit (CPU), graphics processing unit (GPU), random access memory (RAM) and and motherboard. The hardware inside a computer determines it’s performance. For example, one computer could have a CPU with more cores than another, meaning that it can complete more tasks at once, and if a program is designed to take advantage of multiple cores, it can spread the workload across the cores and complete a task faster than on a single core. Graphics processing performance can be greatly improved by having a dedicated GPU rather than one that is integrated into the CPU.