**ARM AS PROCESSOR;**

Arm processors are a type of processor architecture that is widely used in various computing and communication markets, including smartphones, personal computers, and servers 1. Arm Holdings Ltd., based in Cambridge, UK, designs components of processors for others to build. Arm owns these designs, along with the architecture of their instruction sets, such as 64-bit ARM64. Its business model is to license the intellectual property (IP) for these components and the instruction set to other companies, enabling them to build systems around them that incorporate their own designs as well as Arm’s 1.

According to a report by ZDNet, the ninth generation of the Arm processor architecture could sustain distributed computing for the rest of this decade 1. The report also suggests that Arm processors are more power-efficient than Intel processors but may not offer the same level of performance. In terms of instruction sets, both ARM and Intel processors support a wide variety of instructions, but ARM processors typically have a smaller instruction set than Intel processors 2.

A detailed analysis of contemporary ARM and x86 architectures by researchers at the University of Wisconsin-Madison found that ARM and x86 processors are simply different in terms of their instruction set architecture (ISA) 3. The study demonstrated the role of ISA in modern microprocessors’ performance and energy efficiency.

In conclusion, Arm processors are widely used in various computing and communication markets. They are more power-efficient than Intel processors but may not offer the same level of performance. The instruction set architecture (ISA) is different from x86 processors 123.

**CISC AS A PROCESSOR;**

CISC (Complex Instruction Set Computer) is a type of processor architecture that was developed in the 1970s. [It is characterized by a large number of complex instructions that can perform multiple operations in a single instruction cycle .](https://teachcomputerscience.com/risc-and-cisc-processors/)[CISC processors are capable of executing multi-step operations or addressing modes with single instructions](https://teachcomputerscience.com/risc-and-cisc-processors/) .

According to a comparison between RISC and CISC architectures by java point, CISC chips are slower than RISC chips to execute per instruction cycle on each program. The performance of the machine decreases due to the slowness of the clock speed. Executing the pipeline in the CISC processor makes it complicated to use. [The CISC chips require more transistors as compared to RISC design](https://teachcomputerscience.com/risc-and-cisc-processors/) [2](https://www.javatpoint.com/risc-vs-cisc).

In conclusion, CISC processors are characterized by a large number of complex instructions that can perform multiple operations in a single instruction cycle. [However, they are slower than RISC processors and require more transistors 1](https://teachcomputerscience.com/risc-and-cisc-processors/)[2](https://www.javatpoint.com/risc-vs-cisc).

**RISC AS A PROCESSOR;**

RISC (Reduced Instruction Set Computer) is a type of processor architecture that utilizes a small, highly optimized set of instructions, rather than a more specialized set of instructions often found in other types of architectures 1. RISC processors are designed to execute computing tasks with the simplest instructions in the shortest amount of time possible 2.

The RISC architecture emphasizes using the registers rather than memory. This is because the registers are the fastest available memory source. The registers are physically small and are placed on the same chip where the ALU and the control unit are placed on processor 3. RISC instructions operate only on register operands, which makes them faster as registers are placed in the processor chip, which is faster available memory resource 3.

According to a comparison between RISC and CISC architectures by java point, RISC chips are slower than CISC chips to execute per instruction cycle on each program. The performance of the machine decreases due to the slowness of the clock speed. Executing the pipeline in the RISC processor makes it complicated to use. The RISC chips require fewer transistors as compared to CISC design 4.

A detailed analysis of contemporary ARM and x86 architectures by researchers at the University of Wisconsin-Madison found that ARM and x86 processors are simply different in terms of their instruction set architecture (ISA) 5. The study demonstrated the role of ISA in modern microprocessor s’ performance and energy efficiency.

In conclusion, RISC processors utilize a small, highly optimized set of instructions and emphasize using registers rather than memory. They operate only on register operands, which makes them faster as registers are placed in the processor chip. However, they may be slower than CISC processors and require fewer transistors 134.

**AMD AS A PROCESSOR;**

AMD (Advanced Micro Devices) is a semiconductor company that designs and sells CPUs and GPUs for data centers, personal computers, and gaming 1.

According to a recent article by Tom’s Hardware, AMD’s Ryzen 7000 series of specialized X3D CPUs utilize a breakthrough 3D chip-stacking technology to take the lead in gaming performance 1. However, Intel’s chips win for most users looking for the best balance of performance in both gaming and productivity at a more accessible price point 1.

A comparative analysis of Intel and AMD processors by Data Science Central found that due to its multi-core application, AMD series have much better performance in streaming. The recent and improved Ryzen series of AMD can be up to 2x more power-efficient than the 11th Gen series of Intel 2.

In conclusion, AMD is a semiconductor company that designs and sells CPUs and GPUs for data centers, personal computers, and gaming. AMD’s Ryzen 7000 series of specialized X3D CPUs utilize a breakthrough 3D chip-stacking technology to take the lead in gaming performance. However, Intel’s chips win for most users looking for the best balance of performance in both gaming and productivity at a more accessible price point. Due to its multi-core application, AMD series have much better performance in streaming. The recent and improved Ryzen series of AMD can be up to 2x more power-efficient than the 11th Gen series of Intel 12.