Difference between RISC AND CISC

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RISC

- RISC stands for Reduced Instruction Set Computer.
- RISC processors have simple instructions taking about one clock cycle.
- Performance is optimized with more focus on software.
- It has no memory unit and uses separate hardware to implement instructions.
- Instructions are of fixed number of bytes.
- Multiple register sets are present.
- The complexity of RISC lies with the compiler that executes the program.
- Execution time is very less. Code expansion can be a problem.

CISC

- CISC stands for Complex Instruction Set Computer.
- CSIC processor has complex instructions that take up multiple clocks for execution.
- Performance is optimized with more focus on hardware.
- It has a memory unit to implement complex instructions.
- Instructions are of variable number of bytes.
- CISC has many different addressing modes and can thus be used to represent higher-level programming language statements more efficiently.
- Only has a single register set.
- The complexity lies in the microprogram.
- Execution time is very high. Code expansion is not a problem

- The most common RISC microprocessors are Alpha, ARC, ARM, AVR, MIPS, PA-RISC, PIC, Power Architecture, and SPARC.
- RISC architecture is used in high-end applications such as video processing, telecommunications, and image processing.

- Examples of CISC processors are the System/360, VAX, PDP-11, Motorola 68000 family, AMD, and Intel x86 CPUs.
- CISC architecture is used in low-end applications such as security systems, home automation, etc.