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| **RISC** | **CISC** |
| 1. RISC stands for Reduced Instruction Set Computer. | 1. CISC stands for Complex Instruction Set Computer. |
| 2. RISC processors have simple instructions taking about one clock cycle. The average clock cycle per instruction (CPI) is 1.5 | 2. CSIC processor has complex instructions that take up multiple clocks for execution. The average clock cycle per instruction (CPI) is in the range of 2 and 15. |
| 3. Performance is optimized with more focus on software | 3. Performance is optimized with more focus on hardware. |
| 4. It has no memory unit and uses a separate hardware to implement instructions.. | 4. It has a memory unit to implement complex instructions. |
| 5. It has a hard-wired unit of programming. | 5. It has a microprogramming unit. |
| **6.**The instruction set is reduced i.e. it has only a few instructions in the instruction set. Many of these instructions are very primitive. | **6.**The instruction set has a variety of different instructions that can be used for complex operations. |
| **7.**The instruction set has a variety of different instructions that can be used for complex operations. | **7.**CISC has many different addressing modes and can thus be used to represent higher-level programming language statements more efficiently. |
| 8.Complex addressing modes are synthesized using the software. | 8.CISC already supports complex addressing modes |
| 9.Multiple register sets are present | 9.Only has a single register set |
| 10.RISC processors are highly pipelined | 10.They are normally not pipelined or less pipelined |
| 11. The complexity of RISC lies with the compiler that executes the program | 11. The complexity lies in the microprogram |
| 12. Execution time is very less | 12. Execution time is very high |
| 13. Code expansion can be a problem | 13. Code expansion is not a problem |
| 14. Decoding of instructions is simple. | 14. Decoding of instructions is complex |
| 15. It does not require external memory for calculations | 15. It requires external memory for calculations |
| 16. The most common RISC microprocessors are Alpha, ARC, ARM, AVR, MIPS, PA-RISC, PIC, Power Architecture, and SPARC. | 16. Examples of CISC processors are the System/360, VAX, PDP-11, Motorola 68000 family, AMD and Intel x86 CPUs. |
| 17. RISC architecture is used in high-end applications such as video processing, telecommunications and image processing. | 17. CISC architecture is used in low-end applications such as security systems, home automation, etc. |