Differences between RISC and CISC processor:

CISC	RISC
1) CISC architecture gives more importance to hardware	1) RISC architecture gives more importance to Software
2) Complex instructions.	2) Reduced instructions.
3) It access memory directly	3) It requires registers.
4) Coding in CISC processor is simple.	4) Coding in RISC processor requires more number of lines.
5) As it consists of complex instructions, it take multiple cycles to execute.	5) It consists of simple instructions that take single cycle to execute.
6) Complexity lies in microporgram	6) Complexity lies in compiler.

Advantages of CISC Architecture

- Microprogramming is easy to implement and much less expensive than hard wiring a control unit.

- It is easy to add new commands into the chip without changing the structure of the instruction set as the architectu

architecture uses general-purpose hardware to carry out commands.

- This architecture makes the efficient use of main memory since the complexity (or more capability) of instruction allows to use less number of instructions to achieve a given task.

- The compiler need not be very complicated, as the micro program instruction sets can be written to match the constructs of high level languages.

Disadvantages of CISC Architecture

- A new or succeeding versions of CISC processors consists early generation processors in their subsets (succeeding version). Therefore, chip

hardware and instruction set became complex with each generation of the processor.

- The overall performance of the machine is reduced because of slower clock speed.

- The complexity of hardware and on-chip software included in CISC design to perform many functions.

Examples of CISC processor

- IBM 370/168

- Intel 80486

- VAX 11/780

Advantages of RISC Architecture

- The performance of RISC processors is often two to four times than that of CISC processors because of simplified instruction set.

- This architecture uses less chip space due to reduced instruction set. This makes to place extra functions like floating point arithmetic units or memory management units on the same chip.

- The per-chip cost is reduced by this architecture that uses smaller chips consisting of more components on a single silicon wafer.

- RISC processors can be designed more quickly than CISC processors due to its

simple architecture.

- The execution of instructions in RISC processors is high due to the use of many registers for holding and passing the instructions as compared to CISC processors.

Disadvantages of RISC Architecture

- The performance of a RISC processor depends on the code that is being executed. The processor spends much time waiting for first instruction result before it proceeds with next subsequent instruction, when a compiler makes a poor job of scheduling instruction execution.

- RISC processors require very fast memory systems to feed various

instructions. Typically, a large memory cache is provided on the chip in most RISC based systems.