PERFORMANCE OF A COMPUTER REGISTERS, RAM, SYSTEM CLOCK, BUS, CACHE MEMORY

REGISTERS

1. Registers are a type of computer memory used to quickly accept, store, and transfer data and instructions that are being used immediately by the CPU.
2. The registers used by the CPU are often termed as Processor registers.

RAM

1. Ram stands for random-access memory, but what does that mean.
2. Your computer RAM is essentially short-term memory where data is stored as the processor needs it.
3. This isn't to be confused with long-term data that's stored on your hard drive, which stays there even when your computer is turned off.

SYSTEM CLOCK

1. A system clock or system timer is a continuous pulse that helps the computer clock keep the correct time.
2. It keeps count of the number of seconds elapsed since the epoch, and uses that data to calculate the current date and time.
3. Each tick of the CPU clock is one CPU clock cycle.
4. The CPU's design (multiple cores, etc.) will determine how many instructions are executed per CPU clock cycle.
5. CPU clock speed (often measured in GHz) is much faster than the system clock speed (usually measured in MHz).

BUS

In computer architecture, a bus (shortened form of the Latin omnibus, and historically also called data highway or data-bus) is a communication system that transfers data between components inside a computer, or between computers.

This expression covers all related hardware components (wire, optical fiber, etc.)

Three types of Bus:

1. **Address bus** - carries memory addresses from the processor to other components such as primary storage and input/output devices.
2. **Data bus** - carries the data between the processor and other components.
3. **Control bus** - carries control signals from the processor to other components.

CACHE MEMORY

Cache memory is a chip-based computer component that makes retrieving data from the computer's memory more efficient. It acts as a temporary storage area that the computer's processor can retrieve data from easily.