

The random access memory computer science essay

[Technology](#), [Computer](#)



Computer data storage provides one of the core functions of the modern computer, that of information retention. It is one of the fundamental components of all modern computers, and coupled with a central processing unit (CPU, a processor), implements the basic computer model used since the 1940s[2]. Physical memory is a general term that refers to the media data cache on your computer. Being processed for each program and data by the processor will be stored in physical memory. Data is stored in physical memory is temporary, because it will store the data stored in it on a computer that does not continue to flow through the power in other words, the computer is still alive. When you are re-set the computer on or off, will be the loss of data stored in physical memory. So, before you shut down your computer, do not store all data in the mass permanent storage usually tend to be permanent and the media-based disk storage, such as hard disk or floppy disk. There are some types of computer memory which is Random Access Memory (RAM), Read Only Memory (ROM), Virtual memory, Cache Memory and Flash Memory

MAIN BODY

Random Access Memory (RAM) consists of a set of chips. Chip-chip is able to accommodate the data to be processed, or program instructions, to process data which has been processed and waiting to be sent to output devices, secondary storage or communication also device. Operating system that controls the basic functions of the system data and instructions had accommodated in RAM is temporary. The contents of RAM can vary according to the processed data in it, or even use the program. RAM is the

computer resources of its reusable or can be used of RAM referred to as the volatile products. This means that if the power is disconnected from the computer and the computer dead, then all content that is in RAM will be lost permanently. Because RAM is temporary and volatile, then the other storage media to create a permanent nature. This is commonly referred to as secondary storage. Secondary storage is durable and not too volatile, this means all data or programs stored in it can still exist even if the power or the power is turned off. Some examples of this such as secondary storage are magnetic tape, hard drives, magnetic disks and optical storage disk. Capacity of RAM is very diverse in different computers.

Capacity is an important factor, because it determines how much data can be processed in the same time and how large and complex programs that can store. Computer operating system in charge of regulating the use of RAM so that programs can work well. To understand the capacity of the RAM, then some of the following terminology is often. Bit, which is a binary numbering system that represents the smallest unit of data in a computer system? A bit consists of only two digits are 1 and 0. In the computer, 0 means electronic or magnetic signals are absent or absent, while 1 means. Byte, which is a group of eight bits. A byte represents one character, a digit or a value. The capacity of computer memory, or RAM, specified in bytes or groups of bytes. Data, and program instructions stored in the RAM is actually stored in the bits that represent data, instruction and program earlier. Bits are stored in an electronic part called the microscopic capacitor.

Read Only Memory (ROM) is a set of chips that contain part of the operating system which is needed when the computer starts up. ROM is also known as a firmware. ROM is not writable or changed its contents by the user. ROM classified in the media that are non-volatile storage. ROM chips come from the factory with programs or instructions that have been stored in it. The only way to replace its contents is removed from the computer and replace it with another ROM. ROM chip can contain frequently used programs, such as computational routines to calculate the root of a number of ROM and others. This example is for the storage of the BIOS (Basic Input-Output System) which by the manufacturer. BIOS are a very critical part of an operating system, which functions to tell the computer how I access the disk drives. When the computer is turned on, RAM is still empty and there are instructions in the ROM BIOS is used by the CPU to find the disk drive that contains the main files in the operating system. Computer and then transfer those files into RAM and then there are three variations of the ROM, i. e. PROM, or programmable read only memory. PROM chip is a chip that is empty in which the program can be written into it by using special equipment. PROM chips can be programmed once and usually used by the plant as a control device in the product. PROM or erasable programmable read only memory. EPROM similar to PROM, but the program can be removed and the new program could be written into it by using special equipment that uses ultraviolet light. EPROM is used for controlling devices, such as robots . EEPROM, or electronic erasable programmable read only memory. EEPROM chip can be reprogrammed using special electric impulses.

Virtual memory is a data storage method in which part of the program or data stored in the magnetic disk and not in RAM, until such time as necessary. This will provide a kind of illusion that the RAM is its unlimited. Upshot simulates virtual memory itself as a RAM. He allows a computer to run more programs than ever before manipulate larger data and also runs a large program without fear of shortage of RAM. Virtual storage is slower than RAM and non-volatile nature.

Cache memory is the storage of data or information, while the most frequently used or accessed by a computer. Cache memory located on the CPU or on a separate chip. CPU cache memory used to store instructions that are frequently used to run a program. Indirectly, this will improve overall system speed. There are two parts of the cache memory on a computer that is level 1 and level 2 caches is often with L1 and L2. L1 cache is on a built-in CPU and the L2 cache is located in a separate chip, and is located near the CPU. Some CPUs have a built-L1 and L2 and L3 are located on the outside. CPU which has a built-in cache memory much faster than the outside because it operates in tandem with microprocessor speed.

Flash memory is non-volatile memory whose contents are maintained after power off. Flash memory can be read from and written to multiple times and more durable than floppy disks or compact disc. Flash memory devices used in various contributions to the stability, fast access, durability and clean energy power consumption. In addition to use as memory cards and thumb drives, flash memory is also used as a substitute for the hard-drive in the form of solid-state drive and hybrid. Flash memory to store and transfer files

between computers and digital appliances. This is a form of EPROM electrically programmable read-can delete the memory-only. The types of flash memory are a compact flash (CF), Secure Digital (SD) media, memory sticks, multimedia cards, and xD-Picture cards.

CONCLUSION

The computer's memory, often called memory only refers to any computer components, devices and recording media that retain digital data for a certain period of time. Computer data storage provides one of the main tasks of the modern computer, to store information. Memory is one of most important components in any computer system. Without Computer Memory, your computer system is useless and will only take up space in your desk. Computer Memory is a bridge between your permanent storage system disks, CDs, and the Processor. Hard drives are very slow when compared with a CPU processing time so Computer Memory is used to buffer data during time it is processed so bottlenecks are reduced.