Memory

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Memory is the faculty of the mind by which data or information is encoded, stored, and retrieved when needed. It is the retention of information over time for the purpose of influencing future action. If past events could not be remembered, it would be impossible for language, relationships, or personal identity to develop. Memory loss is usually described as forgetfulness or amnesia.

Memory is often understood as an informational processing system with explicit and implicit functioning that is made up of a sensory processor, short-term (or working) memory, and long-term memory. This can be related to the neuron.

The sensory processor allows information from the outside world to be sensed in the form of chemical and physical stimuli and attended to various levels of focus and intent. Working...

CONFIG.SYS

resulting in reservation of memory, or load files, mostly device drivers and terminate-and-stay-resident programs (TSRs), into memory. In DOS, CONFIG.SYS is

CONFIG.SYS is the primary configuration file for the DOS and OS/2 operating systems. It is a special ASCII text file that contains user-accessible setup or configuration directives evaluated by the operating system's DOS BIOS (typically residing in IBMBIO.COM or IO.SYS) during boot. CONFIG.SYS was introduced with DOS 2.0.

Computer memory

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Computer memory stores information, such as data and programs, for immediate use in the computer. The term memory is often synonymous with the terms RAM, main memory, or primary storage. Archaic synonyms for main memory include core (for magnetic core memory) and store.

Main memory operates at a high speed compared to mass storage which is slower but less expensive per bit and higher in capacity. Besides storing opened programs and data being actively processed, computer memory serves as a mass storage cache and write buffer to improve both reading and writing performance. Operating systems borrow RAM capacity for caching so long as it is not needed by running software. If needed, contents of the computer memory can be transferred to storage; a common way of doing this is through a memory management...

Memory management

Memory management (also dynamic memory management, dynamic storage allocation, or dynamic memory allocation) is a form of resource management applied to

Memory management (also dynamic memory management, dynamic storage allocation, or dynamic memory allocation) is a form of resource management applied to computer memory. The essential requirement of

memory management is to provide ways to dynamically allocate portions of memory to programs at their request, and free it for reuse when no longer needed. This is critical to any advanced computer system where more than a single process might be underway at any time.

Several methods have been devised that increase the effectiveness of memory management. Virtual memory systems separate the memory addresses used by a process from actual physical addresses, allowing separation of processes and increasing the size of the virtual address space beyond the available amount of RAM using paging or swapping...

Working memory

working memory. Other suggested names were short-term memory, primary memory, immediate memory, operant memory, and provisional memory. Short-term memory is

Working memory is a cognitive system with a limited capacity that can hold information temporarily. It is important for reasoning and the guidance of decision-making and behavior. Working memory is often used synonymously with short-term memory, but some theorists consider the two forms of memory distinct, assuming that working memory allows for the manipulation of stored information, whereas short-term memory only refers to the short-term storage of information. Working memory is a theoretical concept central to cognitive psychology, neuropsychology, and neuroscience.

Semiconductor memory

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Semiconductor memory is a digital electronic semiconductor device used for digital data storage, such as computer memory. It typically refers to devices in which data is stored within metal–oxide–semiconductor (MOS) memory cells on a silicon integrated circuit memory chip. There are numerous different types using different semiconductor technologies. The two main types of random-access memory (RAM) are static RAM (SRAM), which uses several transistors per memory cell, and dynamic RAM (DRAM), which uses a transistor and a MOS capacitor per cell. Non-volatile memory (such as EPROM, EEPROM and flash memory) uses floating-gate memory cells, which consist of a single floating-gate transistor per cell.

Most types of semiconductor memory have the property of random access, which means that it takes...

Memory controller

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A memory controller, also known as memory chip controller (MCC) or a memory controller unit (MCU), is a digital circuit that manages the flow of data going to and from a computer's main memory. When a memory controller is integrated into another chip, such as an integral part of a microprocessor, it is usually called an integrated memory controller (IMC).

Memory controllers contain the logic necessary to read and write to dynamic random-access memory (DRAM), and to provide the critical memory refresh and other functions. Reading and writing to DRAM is performed by selecting the row and column data addresses of the DRAM as the inputs to the multiplexer circuit, where the demultiplexer on the DRAM uses the converted inputs to select the correct memory location and return the data, which is then...

In-memory database

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An in-memory database (IMDb, or main memory database system (MMDB) or memory resident database) is a database management system that primarily relies on main memory for computer data storage. It is contrasted with database management systems that employ a disk storage mechanism. In-memory databases are faster than disk-optimized databases because disk access is slower than memory access and the internal optimization algorithms are simpler and execute fewer CPU instructions. Accessing data in memory eliminates seek time when querying the data, which provides faster and more predictable performance than disk.

Applications where response time is critical, such as those running telecommunications network equipment and mobile advertising networks, often use main-memory databases. IMDBs have gained...

Eidetic memory

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Eidetic memory (eye-DET-ik), also known as photographic memory and total recall, is the ability to recall an image from memory with high precision—at least for a brief period of time—after seeing it only once and without using a mnemonic device.

Although the terms eidetic memory and photographic memory are popularly used interchangeably, they are also distinguished, with eidetic memory referring to the ability to see an object for a few minutes after it is no longer present and photographic memory referring to the ability to recall pages of text or numbers, or similar, in great detail. When the concepts are distinguished, eidetic memory is reported to occur in a small number of children and is generally not found in adults, while true photographic memory has never been demonstrated to exist...

Long-term memory

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Long-term memory (LTM) is the stage of the Atkinson–Shiffrin memory model in which informative knowledge is held indefinitely. It is defined in contrast to sensory memory, the initial stage, and short-term or working memory, the second stage, which persists for about 18 to 30 seconds. LTM is grouped into two categories known as explicit memory (declarative memory) and implicit memory (non-declarative memory). Explicit memory is broken down into episodic and semantic memory, while implicit memory includes procedural memory and emotional conditioning.