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External storage devices.

A storage device is a storage medium intended for recording and storing data.

Storage devices are divided into 2 types: external (peripheral) devices and internal devices.

In 1945 John von Neumann (1903-1957), an American scientist, put forward the idea of using external storage devices to store programs and data. Neumann developed a structural circuit diagram of the computer. Neumann's scheme corresponds to all modern computers.

External memory is designed for long-term storage of a large amount of information. This is a non-volatile memory, since it stores information regardless of whether the computer is turned on or not. As an external memory of the computer, various disks are used, on which the information is stored. They are called carriers of information.

External devices include magnetic disks, CD, DVD, BD, tape drives, hard disk (hard drive) and a flash card. Most external storage devices can be transferred from one computer to another. Their main drawback is that they work slower than internal memory devices.

A magnetic-optical disk is an information carrier that combines the properties of optical and magnetic storage devices. Recently, magneto-optical technology which uses magnetic and optical recording and reading mechanisms is becoming increasingly widely accepted. Increasingly magneto-optical drives are used to store large amount of information.

The second most common drive can be called CD-ROM and CD-RW drives. As CD-ROMs and CD-ROMs, CD-ROMs will remain relevant for the foreseeable future, therefore, despite the appearance of recording devices, the development of classic (only with the reading function) CD-ROM drives continues - they are becoming more and more fast. Devices with a single (CD-R) and multiple (CD-RW) recording although they get more and more widespread are not superseded but rather supplement the usual CD-ROM wires. Information on the CD-ROM is recorded industrially and it is impossible to re-record it.

DVD (Digital Versatile Disk (previously Digital Video Disk) is a multipurpose digital disk. Its volume is able to satisfy any manufacturer of computer games and encyclopedias for the release of which are usually required causing inconvenience to the user.

DVD data structure is of four types:

- DVD video - contain movies (video and sound);
- DVD-Audio - contain high quality audio data (much higher than on audio CDs);
- DVD-Data - contain any data;
- mixed content.

BD is the format of optical media used for recording and storing digital data including high definition video with increased density.

A classic backup method is the use of tape drives - tape recorders. However the capabilities of this technology both in capacity and speed are severely limited by the physical properties of the carrier. The drawback of the tape drive is the excessive time for sequential data access during reading. The streamer capacity reaches several GB which is less than the capacity of modern hard drives and the access time is many times greater.

Hard disk (hard disk, HDD - Hard Disk Drive) is a permanent memory designed for long-term storage of all information available in the computer. The operating system constantly used programs are downloaded from the hard disk most documents are stored on it. Hard disk drive (HDD) is one of the key components of a modern PC. It directly affects the performance and reliability of the system. Hard disk manufacturing technologies are being improved, the program sizes are increasing, the data on the computer is accumulating.

Flexible disks or floppy disks serve for long-term storage of programs and data of small volume and are convenient for transferring information from one computer to another. To read information from a floppy disk you need a special device - a floppy drive.

A flash drive is a device designed to carry and store information - text documents, pictures, photos, music, video. The device is correctly called a USB flash drive.

Flash memory is a very important and very popular concept in the world of high technologies. The main advantage of this type of memory is its non-volatility. This means that all recorded data is stored even after the shutdown. In addition, information written to flash memory can be stored for tens of years and can be re-recorded thousands of times. Perhaps, the most important advantage is that a flash drive is extremely easy to use. To work with it no special programs are required. You can write to it as easily and quickly as copying information from one folder to another. And it opens on any computer, a modern TV or DVD-player. It is also necessary to underline that modern flash drives are able to "remember" a very large amount of data - up to one terabyte and they are reusable (flash drives can overwrite information hundreds and thousands of times).