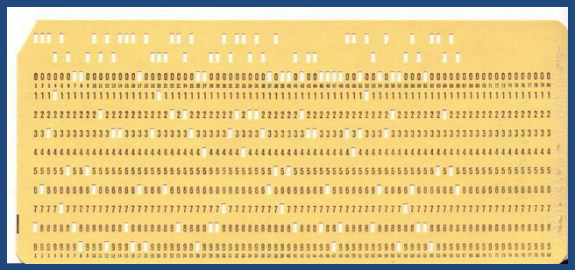
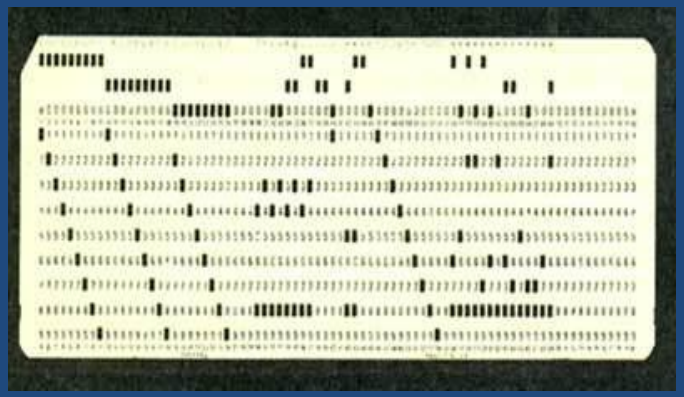
History of information storage systems





For 60–70 years storage systems have evolved from the simplest maps and ribbons with holes used to store programs and data to solid-state drives. On this way, many devices unlike each other were created — magnetic tapes, drums, disks, and optical disks. Some of them are in the past: punch cards, magnetic drums, floppy disks and optical disks, while others live and will live long.

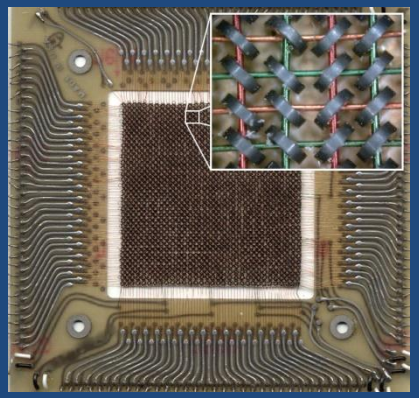
Punch cards

- In the simplest devices with programmed control (weaving machines, street organs, carillion watches), perforated carriers of various formats and sizes and drums with pins were used. Keeping this principle of writing, Herman Hollerith, the founder of TMC, later included in IBM, made a discovery. That is, in 1890, he realized how you can use punch cards for recording and processing data. He implemented this idea in the processing of statistical data obtained during the population census, and later transferred it to other applications, which ensured the well-being of IBM for decades to come.
- Why the cards? They can be sorted and they can be provided, relatively speaking, “direct access” so that, on a special tabulator device, following an uncomplicated program, you can partially automate data processing.

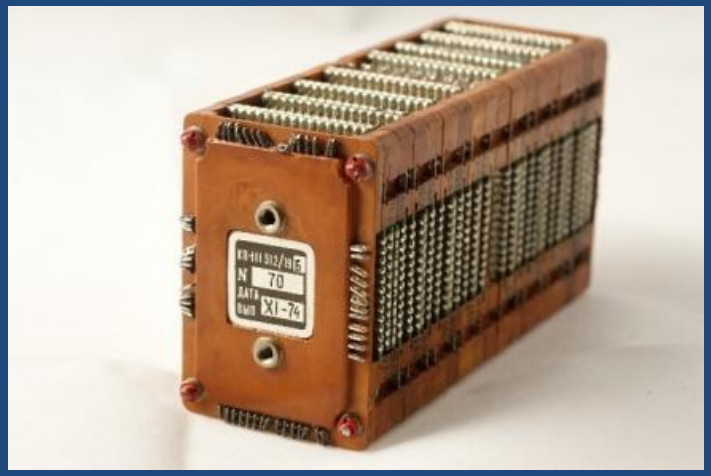
Punch card

Международный телеграфный код №2
на перфоленте (МТК-2)

Русский шрифт		Е	= Перевод строки	Пробел	< Возврат каретки	Т	А	И	Н	О	С	Р	Х	Д	Л	З	У	Ц	М	Ф	Й	Г	П	Ы	Б	В	Цифры	К	Ж	Ь	Я	Буквы лат.	Буквы рус.
Цифры		3				5	-	8	,	9	'	Ч	Щ	кто там?	)	+	7	:	.	Э	Ю (зв)	Ш	0	5	?	2		(	=	/	1		
Латинский шрифт		Е				Т	А	I	N	О	S	R	H	D	L	Z	U	C	M	F	J	G	P	Y	B	W		K	V	X	Q		
Ведущие отверстия	1	●					●				●			●		●	●			●	●			●	●	●	●	●		●	●	●		
	2		●				●	●				●			●		●	●			●	●	●			●	●	●	●		●	●		
		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	3			●				●	●		●		●				●	●	●	●			●	●				●	●	●	●	●		
	4				●				●	●		●		●				●	●	●	●	●			●		●	●	●	●		●		
	5					●				●			●		●	●			●			●	●	●	●	●	●			●	●	●	●		

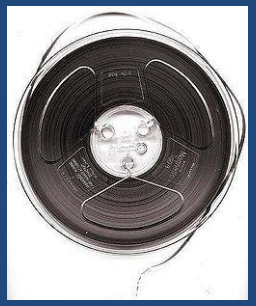


- Magnetic core memory or ferrite memory is a memory device that stores information in the direction of the magnetization of small ferrite cores, usually in the shape of a ring. Ferrite rings were placed in a rectangular matrix and through each ring passed (depending on the design of the storage device) from two to four wires for reading and writing information. Magnetic core memory was the main type of computer memory from the mid-1950s to the mid-1970s.

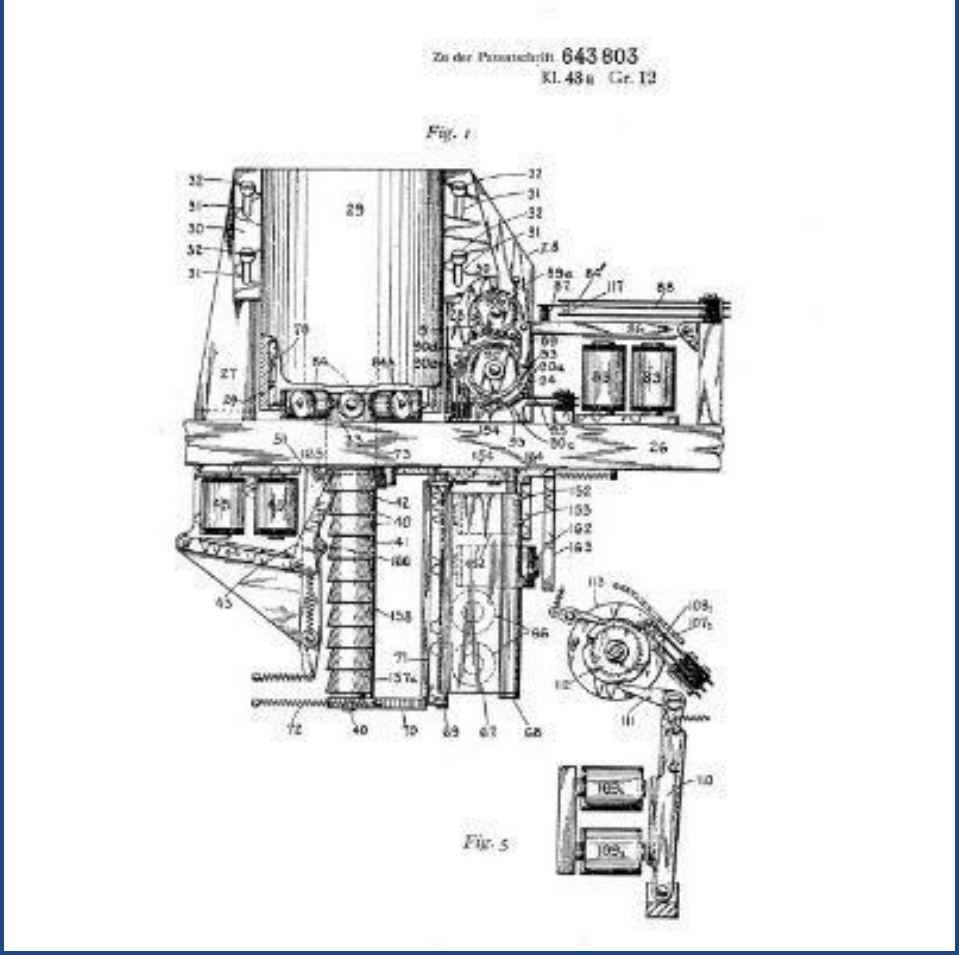


Magnetic tapes

- Magnetic tape revolutionized broadcasting and recording. Instead of live broadcasts in television and radio broadcasting, it became possible to pre-record programs for later playback. The first multi-track tape recorders made it possible to record on several separate tracks from different sources, and then subsequently reduce them to the final recording with the imposition of the necessary effects. Also, the development of computer equipment was the ability to save data for a long period with the ability to quickly access it.



Magnetic drum



- Drum is not magnetic, the working surface serves as the bottom, but a cylinder with a ferrimagnetic coating on its side surface, divided into tracks, and they, in turn, are divided into sectors. Each of the tracks has its own read / write head, and all the heads can work simultaneously, that is, read / write operations are performed in parallel mode.

Floppy disks

- The active life of floppy disks stretched for 30 years from the late seventies to the late nineties. They turned out to be extremely popular due to the fact that PCs appeared earlier than users had the opportunity to transfer data over the network. In these conditions, floppies served not only for their intended purpose for storing backups, but to a greater extent for exchanging data between users, which is why they are also called sneaker, like sneakers, typical programmer shoes. By exchanging floppies, they created a kind of network - sneakernet.

There were 3 main types of disks and many different modifications. The 8-inch floppy disks were created in 1967 at IBM, they were conceived as a bootstrap device for IBM / 370 mainframes to replace non-volatile read-only memory with the previous generation IBM 360