



# Computer Workshop

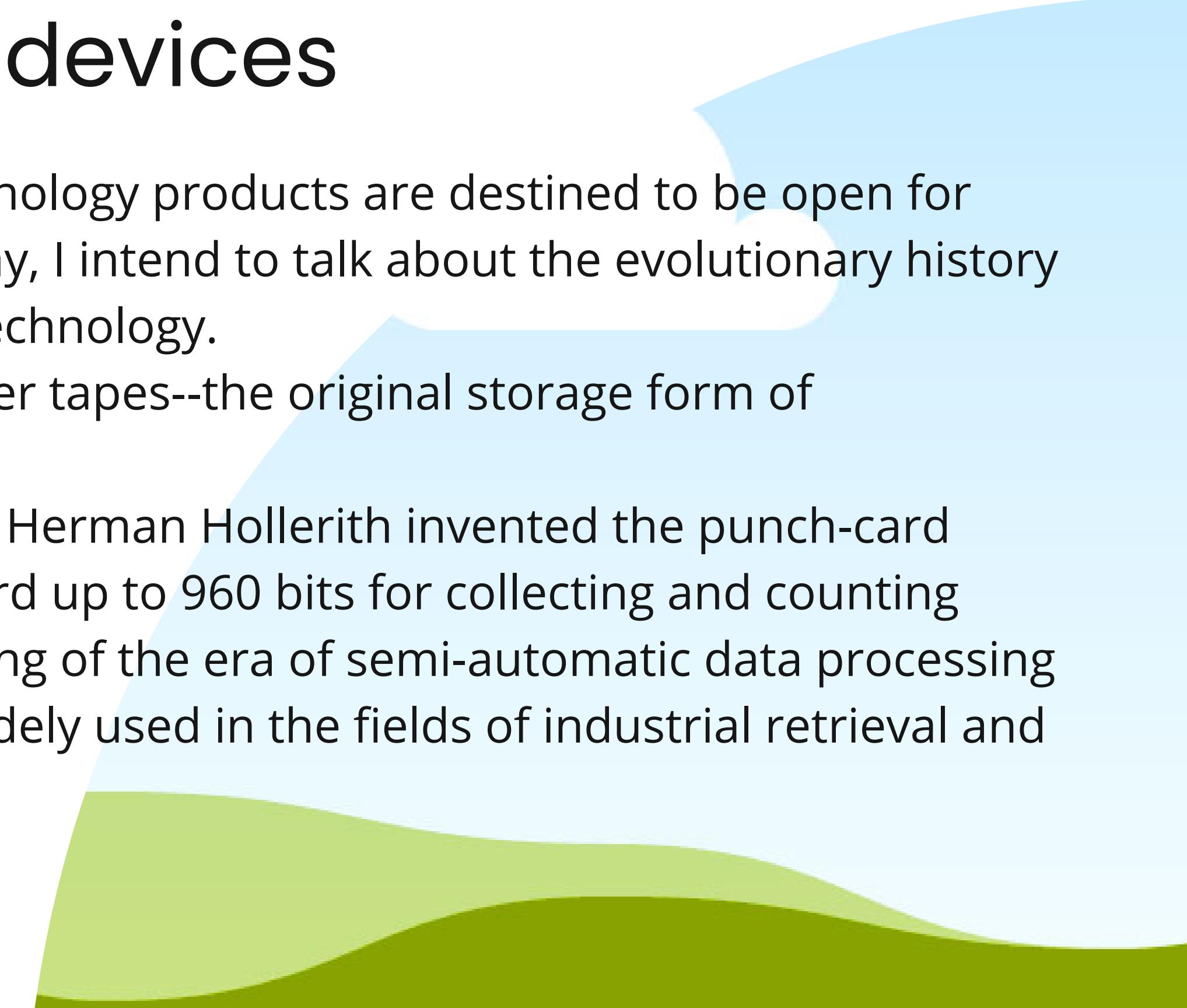
EC4 - Group 1D

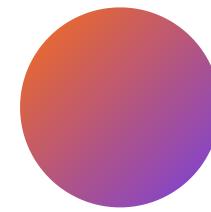


- **Content:-**
  - 1. History of storage devices**
  - 2. SSD and HDD**
  - 3. Advantage of using SSD**
  - 4. Future of storage device**



# History of Storage devices

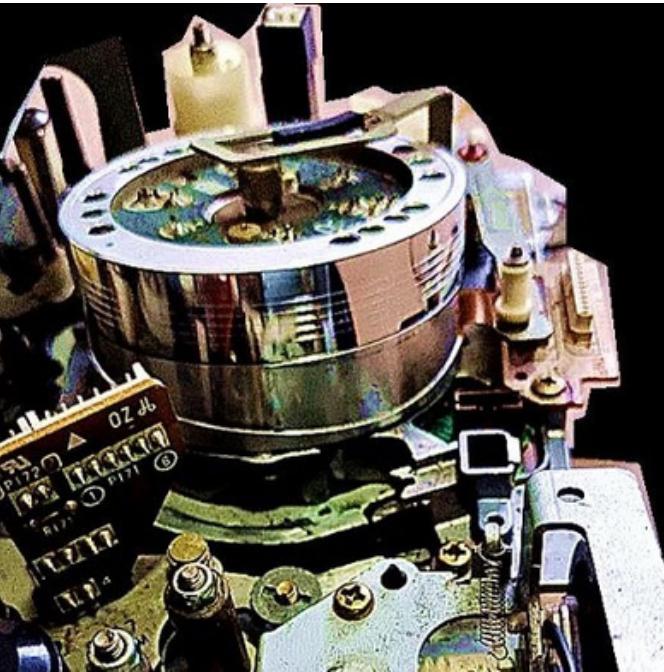
- Some people say that "most technology products are destined to be open for only a short period of time." Today, I intend to talk about the evolutionary history of storage devices in the age of technology.
  - Punched cards and punched paper tapes--the original storage form of mechanized information
  - In 1890, the American statistician Herman Hollerith invented the punch-card tabulating machine that can record up to 960 bits for collecting and counting census data. It marks the beginning of the era of semi-automatic data processing systems. It has gradually been widely used in the fields of industrial retrieval and data statistics.
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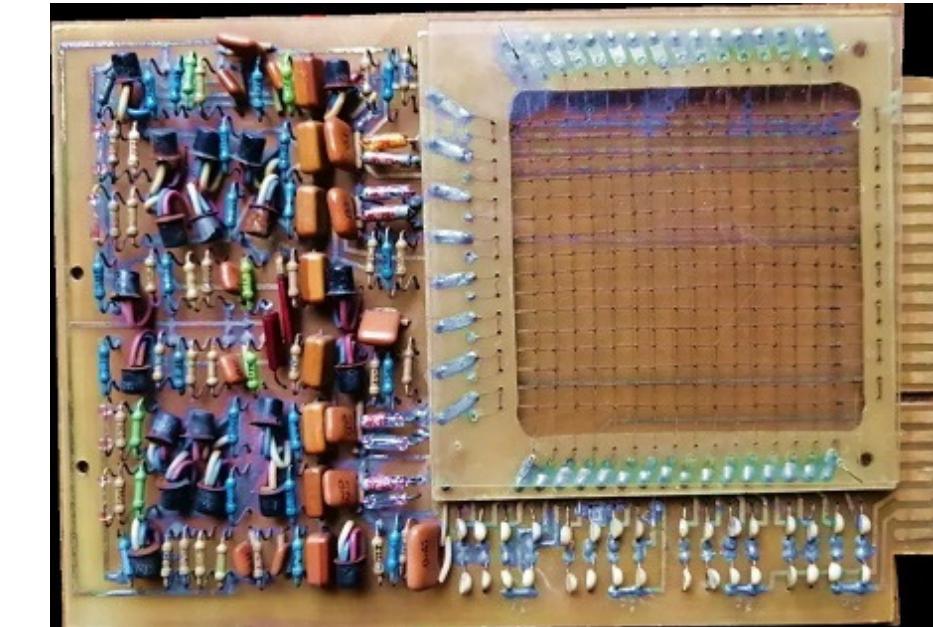
# Some storage devices from past is in following slides



**Magnetic tape**



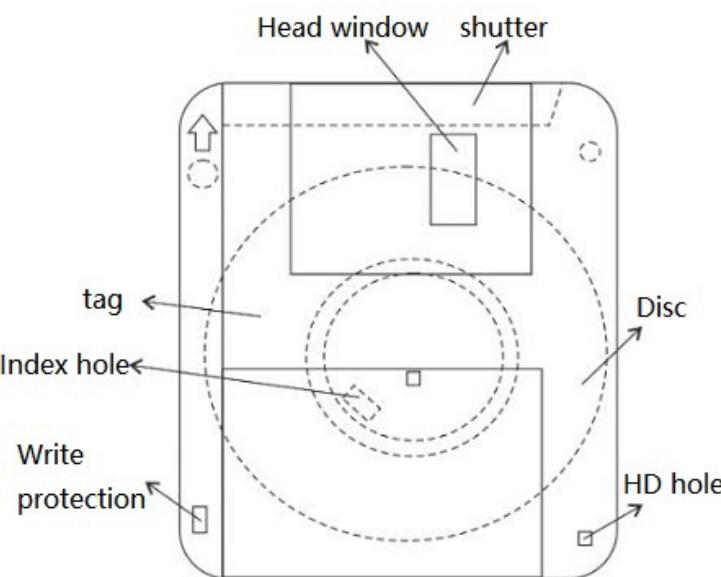
**Drum memory**



**Magnetic core memory**



**Hard disk drive**



**Floppy disk**



**CD**



**Solid state drive**



**SD card**



**USB flash drive**

# Future of data storage

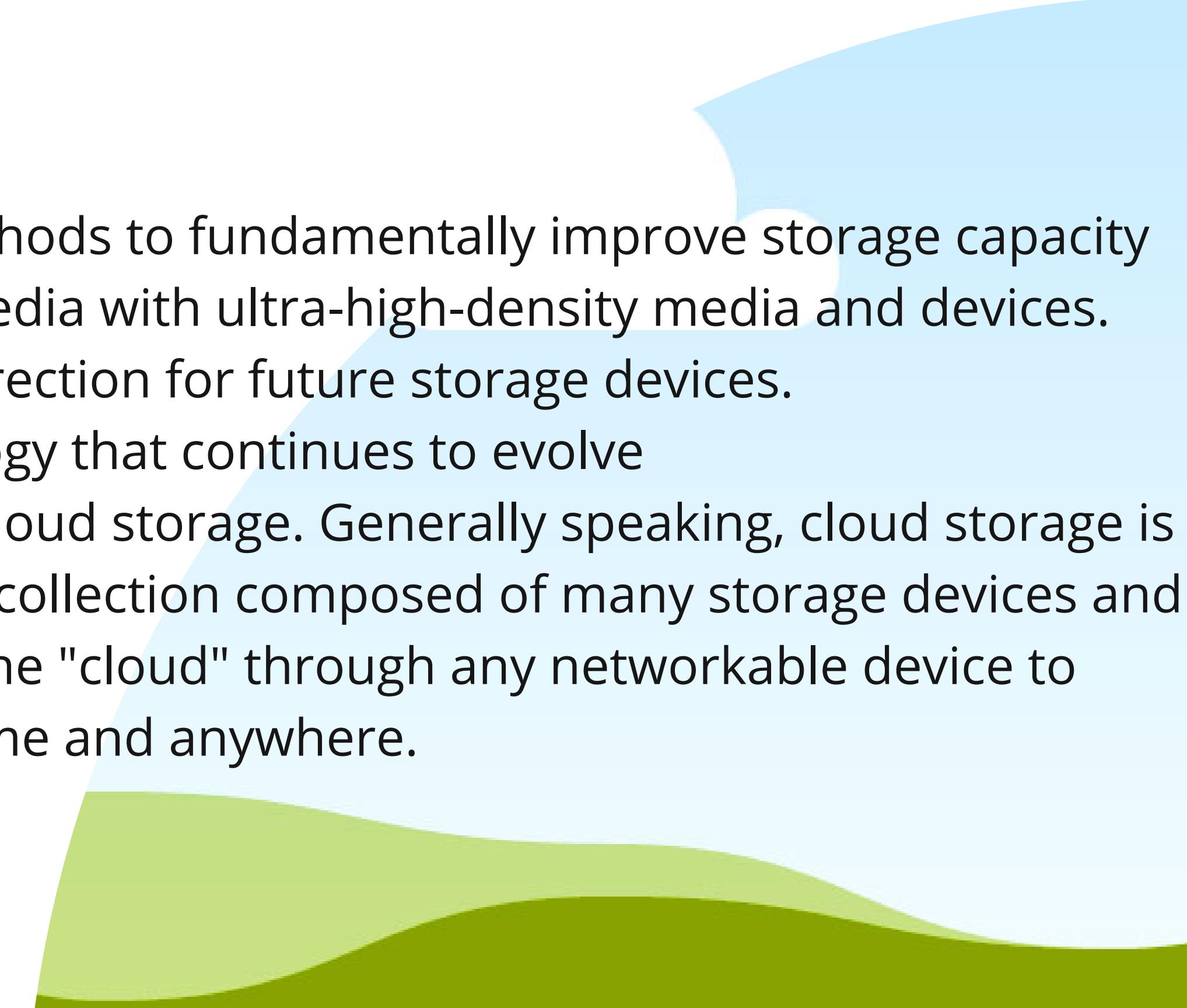


## Cloud storage

**With the rapid development of cloud computing, big data, the Internet of Things, and artificial intelligence, people are also ushering in the era of "information explosion". Information has exploded, and storage is accelerating. It is believed that with the continuous advancement of technology, storage devices, as carriers of information, will also develop faster. Let's talk about the storage technology of the future.**



# Cloud storage

- Nano storage uses various methods to fundamentally improve storage capacity and replace existing storage media with ultra-high-density media and devices. This is a major development direction for future storage devices.
  - Cloud storage-storage technology that continues to evolve
  - Finally, I will briefly talk about cloud storage. Generally speaking, cloud storage is to store storage resources in a collection composed of many storage devices and servers. Users can connect to the "cloud" through any networkable device to conveniently access data anytime and anywhere.
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# Our topic is SSD and HDD



**SSD**



**HDD**

# Hard Disk Drive

- A hard disk drive (HDD), hard disk, hard drive, or fixed disk is an electro-mechanical data storage device that stores and retrieves digital data using magnetic storage with one or more rigid rapidly rotating platters coated with magnetic material. The platters are paired with magnetic heads, usually arranged on a moving actuator arm, which read and write data to the platter surfaces.
- Data is accessed in a random-access manner, meaning that individual blocks of data can be stored and retrieved in any order. HDDs are a type of non-volatile storage, retaining stored data when powered off.
- Modern HDDs are typically in the form of a small rectangular box.

HHD was invented by IBM team  
in 1954





# Solid State Drive

- A solid-state drive (SSD) is a solid-state storage device that uses integrated circuit assemblies to store data persistently, typically using flash memory, and functioning as secondary storage in the hierarchy of computer storage.
- It is also sometimes called a semiconductor storage device, a solid-state device or a solid-state disk
- Even though SSDs lack the physical spinning disks and movable read-write heads used in hard disk drives (HDDs) and floppy disks.
- SSD also has rich internal parallelism for data processing.

SSD introduced by SanDisk  
in 1991 by capacity 20 MB



Boottime of same  
configuration system





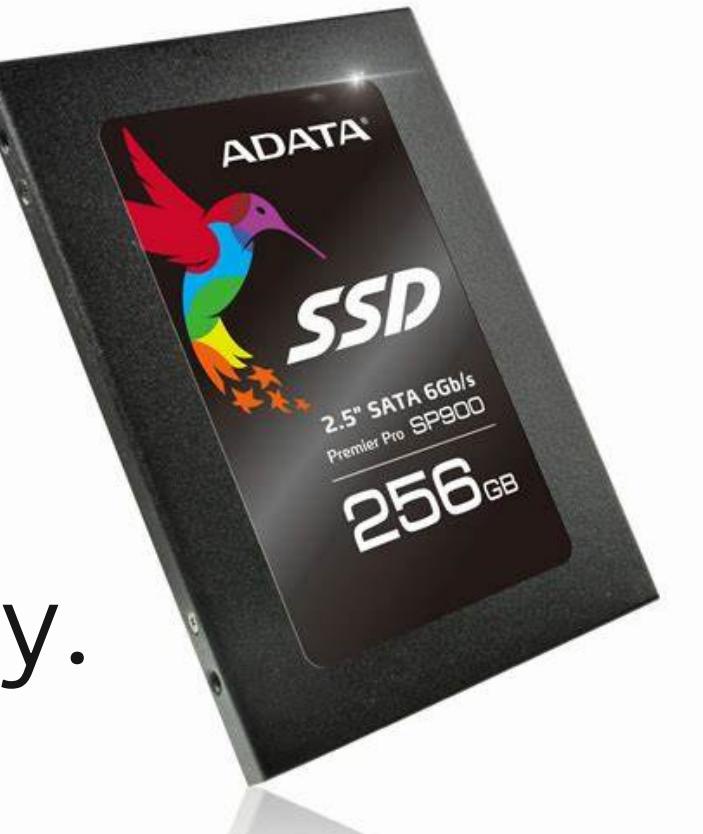
# Major difference between SSD and HDD





# Conclusion

SSD provide us faster data access, less power consumption and higher reliability.



In coming years SSD will replace HDDs.

# Engineering Quotes

*"Science is about knowing;  
Engineering is about doing."*

# Thank You

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