

## UNIT 19

### STORAGE DEVICES

**Objectives:** at the end of the lesson, students will be able to:

1. describe simple characteristics of common storage devices (e.g., size, use);
2. explain how different storage devices work and their advantages or disadvantages;
3. give a presentation on the pros and cons of various storage devices.

**Lead-in:** Match storage device names with their pictures or definitions.

CD

DVD

USB flash drive

hard drive

cloud storage



### Vocabulary Building

#### Key terms

**Array** – is a group of disc drivers that are connected and used as a single unit

**Example:** *We need a group of hard drives arranged in an array.*

**RAID** – is a method for combining multiple disk drives into a single storage unit that can increase computer performance dramatically

**Example:** *RAID (redundant array of independent disks) is a way of storing the same data in different places on multiple hard disks or solid-state drives (SSDs) to protect data in the case of a drive failure.*

**Failure** – it occurs when a disk drive malfunctions and the data stored on it cannot be accessed

**Example:** *A system failure refers to a situation where a computer system or network is unable to perform its intended functions or experiences a significant disruption in its operation.*

**Magnetic tape** – is a long, narrow piece of magnetized plastic that is used for storing information

**Example:** *A magnetic tape, in computer terminology, is a storage medium that allows for data archiving, collection, and backup. At first, the tapes were wound in wheel-like reels, but then cassettes and cartridges came along, which offered more protection for the tape inside.*

**Data compression** – is the process of storing information using less storage space by reducing the number of bits it takes up

**Example:** *Data compression is the process of encoding, restructuring or otherwise modifying data in order to reduce its size. Fundamentally, it involves re-encoding information using fewer bits than the original representation.*

**Memory storage density** – is the amount of data that can be contained within a given computer storage device

**Example:** *The memory storage density of magnetic tape can't compare to modern technology.*

**SATA** – is an interface for connecting storage devices to a computer system

**Example:** *Serial ATA (Serial Advanced Technology Attachment or SATA) is a command and transport protocol that defines how data is transferred between a computer's motherboard and mass storage devices, such as hard disk drives (HDDs), optical drives and solid-state drives (SSDs).*

**USB flash drive** – is a portable flash memory system that uses a USB interface to connect to a computer and transfer information

**Example:** *A USB drive, also referred to as a flash drive or memory stick, is a small, portable device that plugs into the USB port on your computer. USB drives are commonly used for storage, data backup, and transferring files between devices.*

**Activity:** Complete the sentences with the correct word or phrase from the list provided.

**Word List:** hard drive, USB stick, cloud storage, DVD, external, memory card, backup

1. A \_\_\_\_\_ is a small, easy-to-carry storage device that plugs into a USB port.

2. You can save files to a \_\_\_\_\_ to keep a copy in case something happens to your original files.

3. A \_\_\_\_\_ is a storage device that is often used to watch movies or store large amounts of information.

4. To keep important files safe, you might use \_\_\_\_\_ storage which is accessible over the internet.

5. An \_\_\_\_\_ hard drive is a type of storage device that connects to your computer externally.

6. A \_\_\_\_\_ is commonly used in digital cameras to store pictures.

7. If you want to store a lot of files, you might use a \_\_\_\_\_ which is built into your computer or added as an external device.

**Activity:** Create sentences or short paragraphs using new vocabulary.

**Activity:** Watch a video about storage devices and then summarize the key points.

<https://youtu.be/OsEDJM9NuGA?si=Y1WMHy8jTnu-JiKR>

## Reading

### Understanding Storage Devices

In today's digital world, storage devices are essential for keeping our files safe and accessible. Here are some common types:

1. **Hard Drive:** This is a large storage device that is often built into your computer. It can store a lot of data, such as documents, photos, and software. There are also external hard drives that you can connect to your computer via a USB port.

2. **USB Stick:** Also known as a flash drive, this is a small, portable device that you can easily carry around. It's handy for transferring files between computers or for storing important documents that you want to keep with you.

3. **Memory Card:** Used in devices like cameras and smartphones, memory cards are small, removable storage devices. They are perfect for storing photos and videos.

4. **DVD:** This is a type of optical disc that can store large amounts of data, including movies and software. DVDs are less commonly used now, as many people prefer digital downloads.

5. **Cloud Storage:** This refers to storing your files on remote servers accessed over the internet. Cloud storage is convenient because you can access your files from any device with an internet connection.

**Activity:** Choose the correct answer for each question based on the text.

1. **What is a common use for a USB stick?**

- a) To watch movies
- b) To transfer files between computers
- c) To store photos in a camera
- d) To back up data online

2. **Where is a hard drive usually found?**

- a) In a camera
- b) In a smartphone
- c) Inside a computer
- d) In a DVD player

3. **What type of storage device is often used for taking photos and videos?**

- a) External hard drive
- b) DVD
- c) Memory card
- d) Cloud storage

4. **Which storage device allows you to access your files from any device with an internet connection?**

- a) Hard drive
- b) USB stick
- c) Memory card
- d) Cloud storage

5. **Which of the following is a type of optical disc?**

- a) USB stick
- b) Memory card

- c) DVD
- d) Hard drive

## **Speaking**

**Activity:** Role-play scenarios where students suggest storage solutions based on given needs.

### **Scenario 1: The Graphic Designer**

**Background:** A graphic designer is working on several high-resolution projects and needs to ensure they have adequate storage for their large files, including design assets and project backups.

#### **Requirements:**

- **Large Files:** High-resolution images, video files, and design documents.

- **Backup:** Regular backups to prevent data loss.

- **Accessibility:** Easy access to frequently used files.

**Role-Play:** The designer is concerned about running out of storage space and wants a reliable solution that also ensures file security. Students should suggest solutions such as external hard drives, SSDs, cloud storage services with high storage limits, and backup software that automates data backups.

### **Scenario 2: The Small Business Owner**

**Background:** A small business owner is setting up a new office and needs to store a growing amount of business data, including customer records, financial documents, and marketing materials.

#### **Requirements:**

- **Data Management:** Organized storage for customer and financial records.

- **Security:** Protection against unauthorized access and data breaches.

- **Scalability:** Ability to expand storage as the business grows.

**Role-Play:** The business owner needs a solution that balances cost, security, and future growth. Students should suggest solutions such as network-attached storage (NAS), cloud storage with encryption options, and a combination of local and cloud-based backups.

### **Scenario 3: The Video Editor**

**Background:** A video editor is working on multiple projects that involve large video files and needs a solution for both storage and fast access during editing.

#### **Requirements:**

- **Large Video Files:** High-definition video files and raw footage.
- **Performance:** Fast read/write speeds for smooth editing.
- **Backup:** Regular backups to prevent data loss.

**Role-Play:** The editor is looking for a solution that provides high performance and ample storage space. Students should suggest solutions such as high-speed SSDs, RAID arrays for redundancy and performance, and cloud storage options for additional backup.

**Group Work Activity:** Give a presentation on the pros and cons of various storage devices.

#### **Home assignment**

Write a comparative report on different storage devices, focusing on aspects like capacity, speed, and cost.