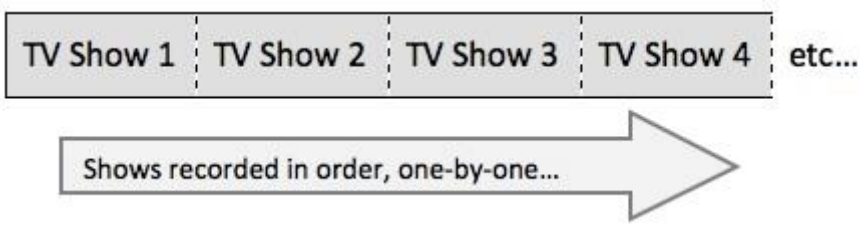
1.2 Serial and Direct Methods of Access

Serial / Sequential Access

A **serial** (or **sequential**) access storage device is one that stores files one-by-one in a sequence.

A non-computer serial access device is the videotape. In the diagram the TV shows are placed one after the other. In the tape you cannot go directly to, say, TV show 4, but you have to go through TV show 1, then TV show 2 etc.



If you want to watch a show that you recorded earlier, you have to **rewind / fast-forward** through all other shows until you find it.

The shows are only accessible in the **same order** that you recorded them. This type of one-by-one storage and access is called **serial access**.

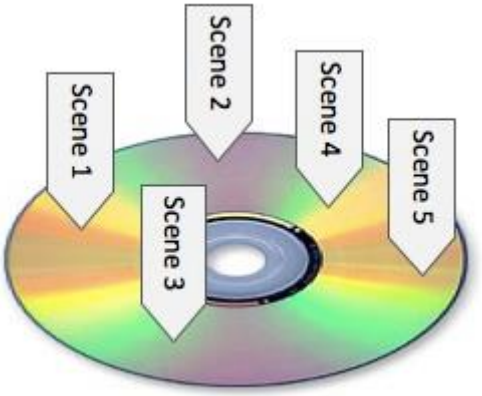
Systems that store things on tape (video, music, computer data, etc.) are always serial access

Direct / Random Access

A **direct** (or **random**) access storage device is one that stores files so that they can be **instantly accessed** - there is no need to search through other files to get to the one you want.

An example of a direct access device would be a DVD movie. Unlike the VHS videotape movie, you can **jump** to any scene on a DVD.

All parts of the DVD are **directly** accessible. This type of file storage is called **direct access**.



Applications

Some applications can be solved by a serial access and some by a random access. One application that uses serial access is **payroll**. One application that uses direct access is **airline booking reservations**.

Media

Some media like tapes can support only serial access. Other media like disks can support both serial files and random files.

Media refers to materials that hold data in any form or that allow data to pass through them, including paper, transparencies, multipart forms, hard, floppy and optical discs, magnetic tape, wire, cable and fibre. Media is the plural of "medium."