

# PREPARING FOR VIDEO DIGITIZATION

Presented by: Morgan Oscar Morel  
Video Lab Supervisor / Library of Congress

[tinyurl.com/2fe6btvt](http://tinyurl.com/2fe6btvt)

# Workshop Schedule



**Day 1: Preparing for Video Digitization**  
**August 10th, 6:30-8:30pm**

**6:30 pm - Welcome from People's Media Record**

**6:45 pm - Workshop time block 1**

**7:20 pm - 5 minute break**

**7:25 pm - Workshop Time Block 2**

**7:55 pm - 5 minute break**

**8:00 pm - Workshop Time Block 3**

**8:25 pm - Closing from People's Media Record**

**Day 2: Performing AV Digitization**  
**August 19 1pm-5pm**

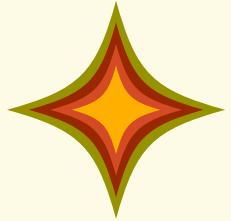
# DAY ONE OUTLINE

## Block 1

Introduction



Preservation  
Fundamentals



Exercise 1

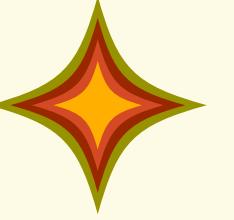


Break

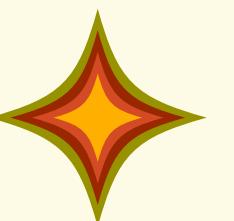


## Block 2

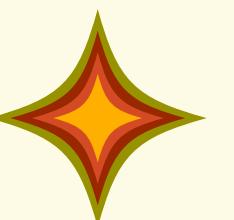
Physical Media  
Format



Preservation  
Formats



Exercise 2

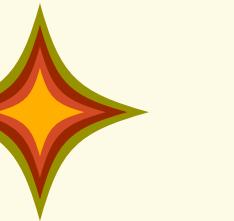


## Block 3

Preservation  
Software



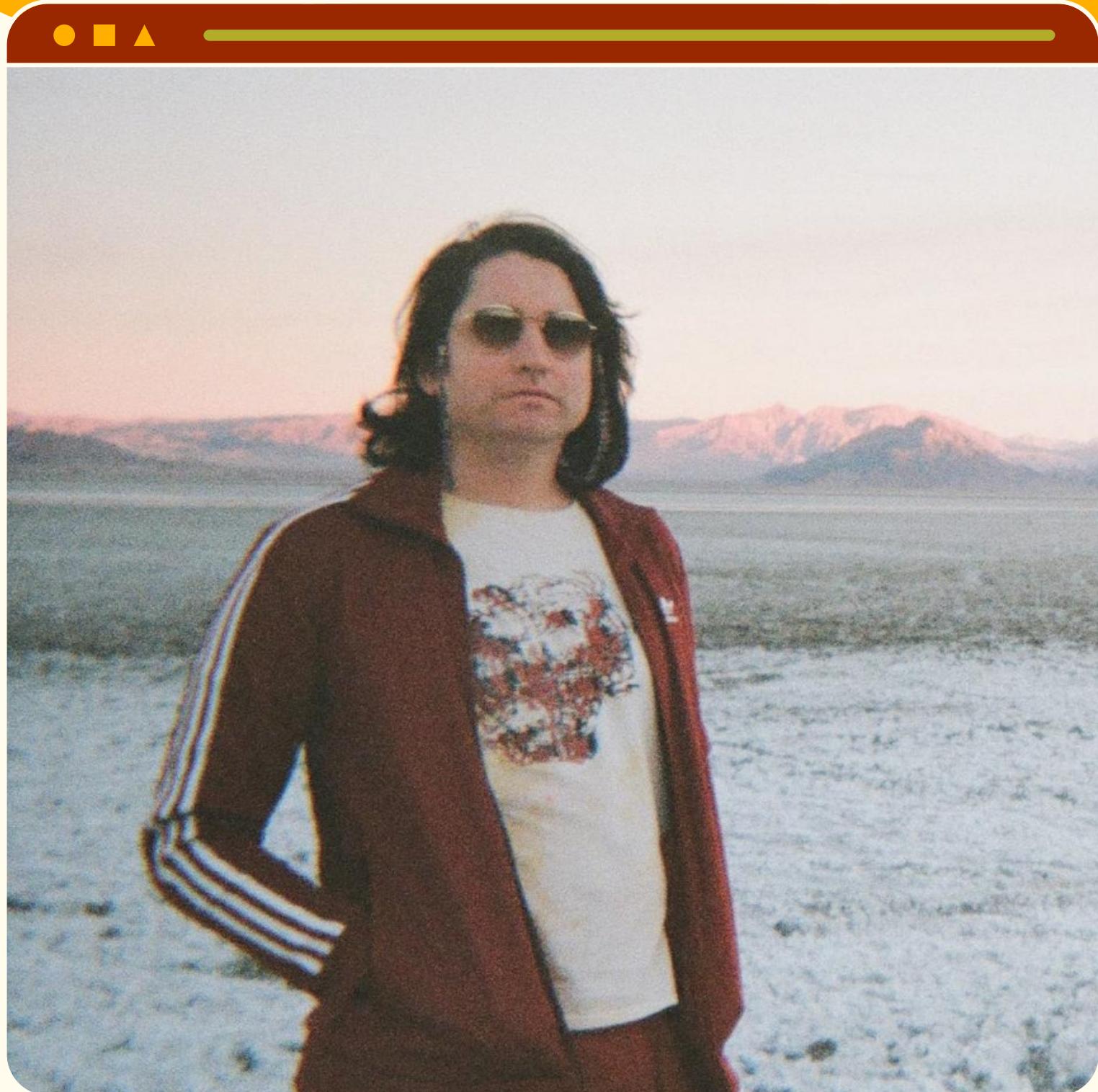
Exercise 3





# DAY ONE PURPOSE

- ★ To give you an understanding of the basic concepts involved in digitization for preservation
- ★ To prepare you for digitizing and preserving your own materials on Day Two
- ★ It's a lot of information! Ask Questions if you need



# HI, I'M MORGAN!

- Video Lab Supervisor at the Library of Congress
- 13 years of preservation tape-based media
- I'm a huge nerd for video preservation technology and education, and just teaching a slice of it in this workshop
- please don't be scared to reach out with any questions!



**WHO ARE YOU?**



# PRESERVATION FUNDAMENTALS

# PRESERVATION FUNDAMENTALS

- Degradation and Obsolescence
- Analog vs Digital
- Digitization vs Migration
- Metadata
- Streams
- Encoding vs Container
- Open Source
- Types of Loss
- Compression
- Interlacing
- Resolution
- Checksums and Fixity
- Preservation vs Access

THESE FUNDAMENTALS WILL HELP YOU  
UNDERSTAND THE NUANCES OF DIGITIZATION  
AND HOW DIGITAL FILES FUNCTION TO  
PRESERVE PHYSICAL MEDIA

# PRESERVATION FUNDAMENTALS

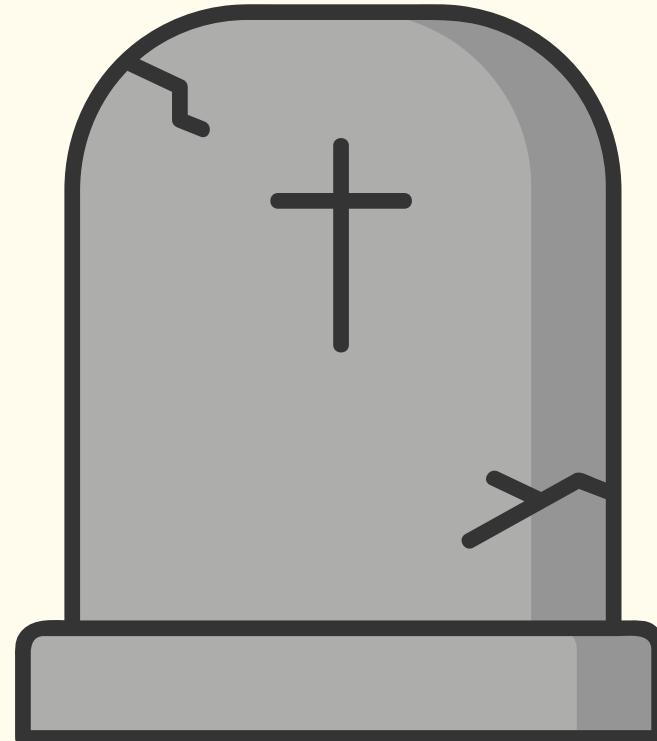
- Degradation and Obsolescence
- Analog vs Digital
- Digitization vs Migration
- Metadata**
- Streams vs Container
- Encoding vs Container
- Open Source**

- Types of Loss
- Compression
- Interlacing
- Resolution
- Checksums and Fixity**
- Preservation vs Access**

THESE CONCEPTS ARE DISCUSSED  
IN MORE DETAIL IN THE PREVIOUS  
TWO WORKSHOPS

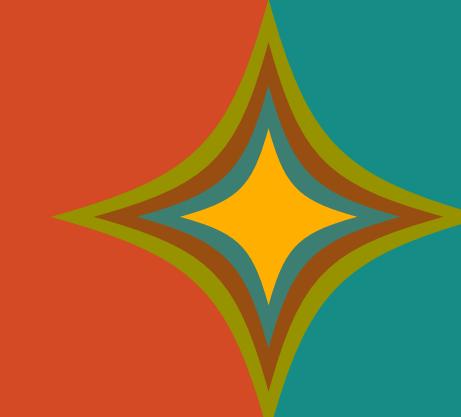
# DEGRADATION AND OBSOLESCENCE

ARCHIVAL TAPE MEDIA ARE ALL LONG PAST THEIR SHELF-LIFE. DAMAGED AND DEGRADED TAPES BECOME UNPLAYABLE

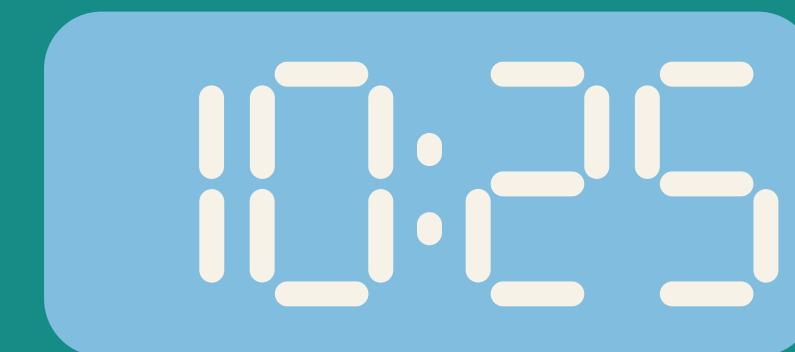
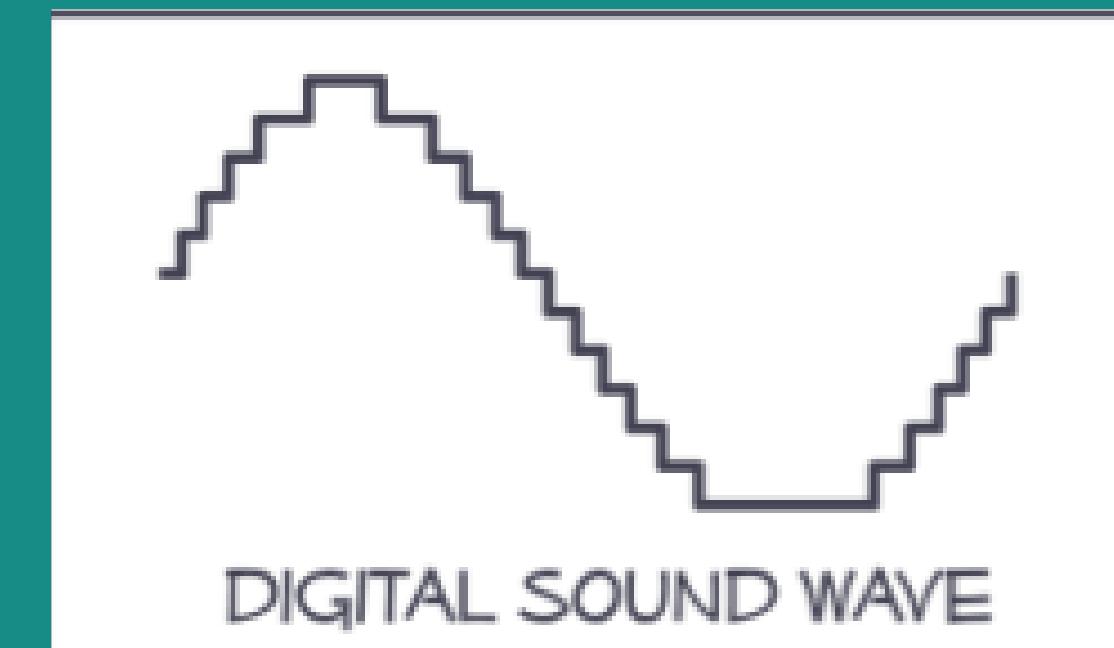


MANY VIDEO FORMATS RELY ON OBSOLETE TECHNOLOGY TO BE PLAYED BACK, AND THUS TO BE PRESERVED

# ANALOG

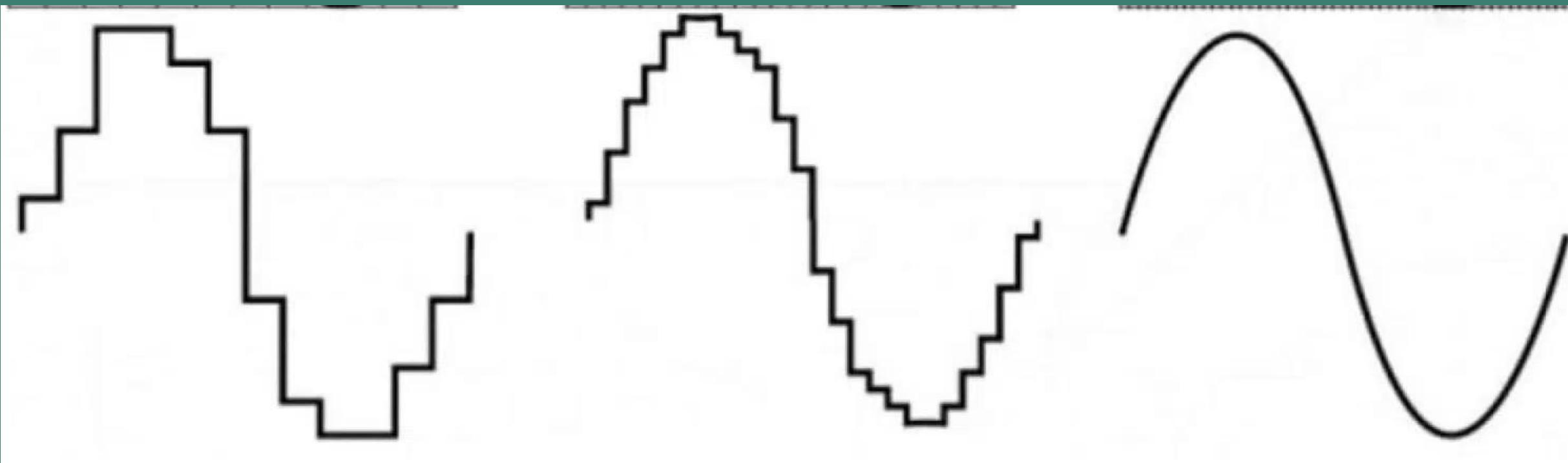
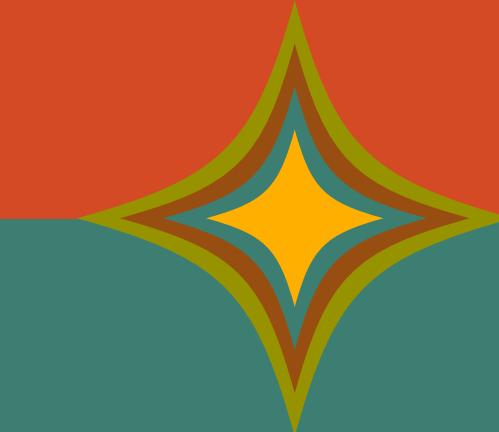
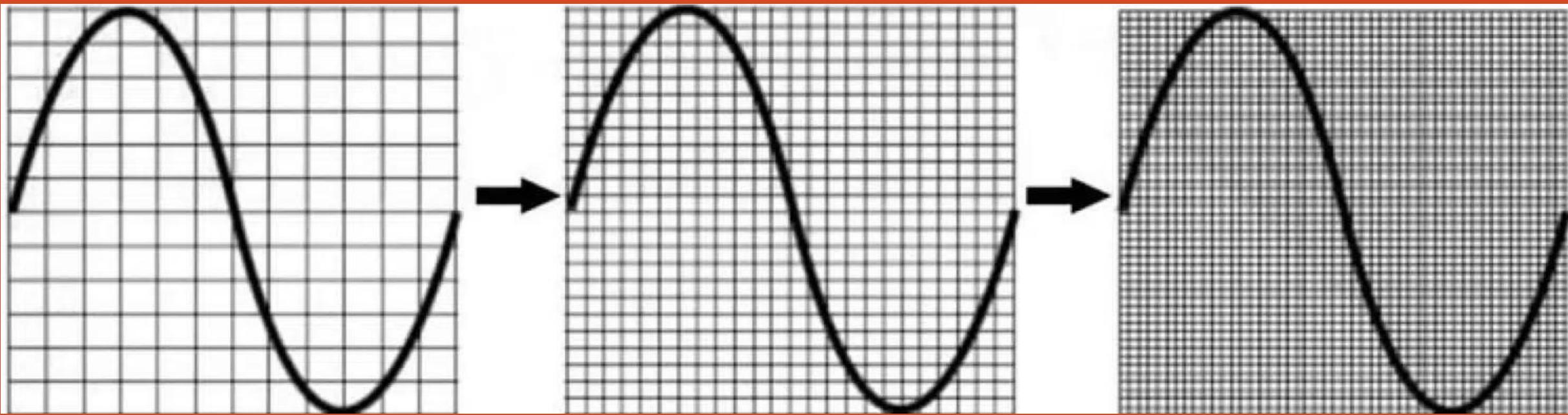


# DIGITAL



10100101010101100  
10101010010101010  
010010100110101  
01010101001101010

# ANALOG

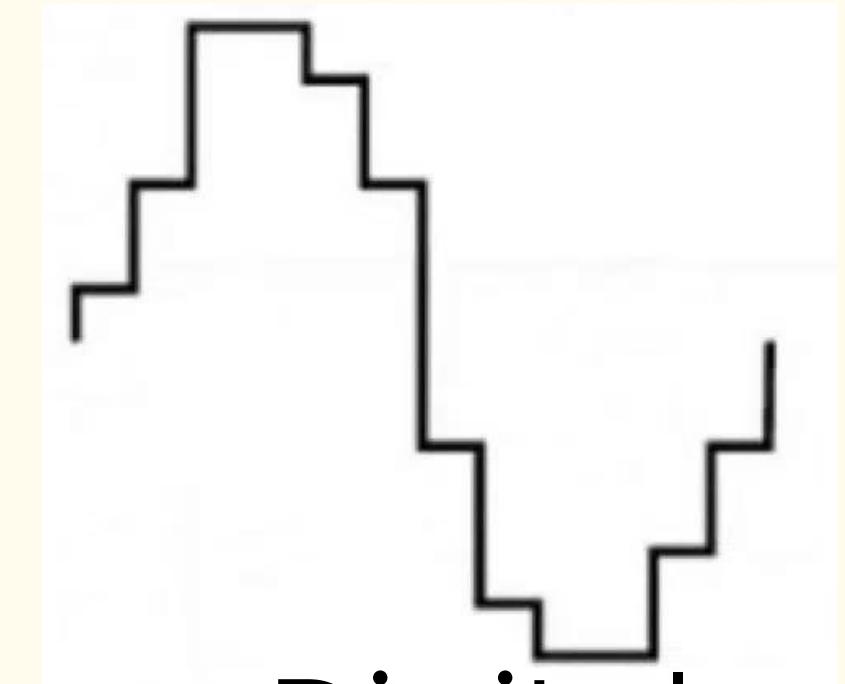


# DIGITAL

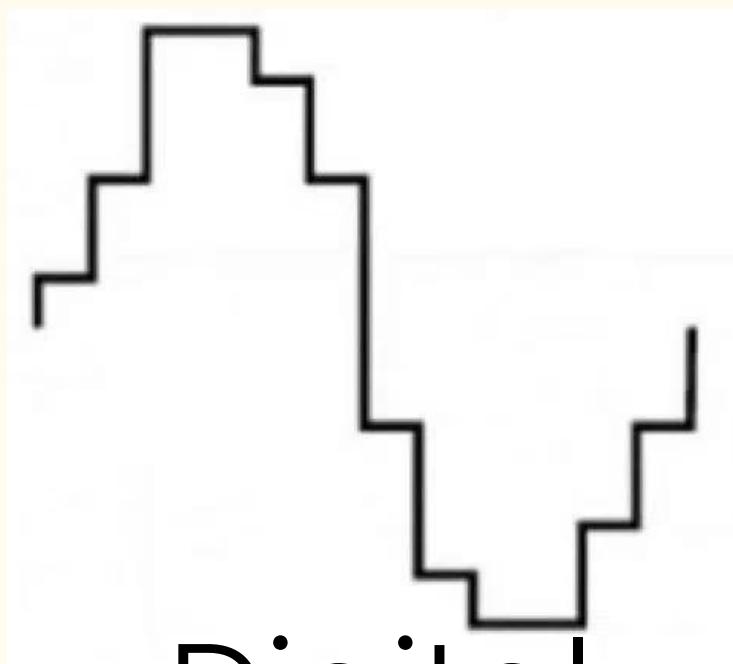
# DIGITIZATION VS MIGRATION



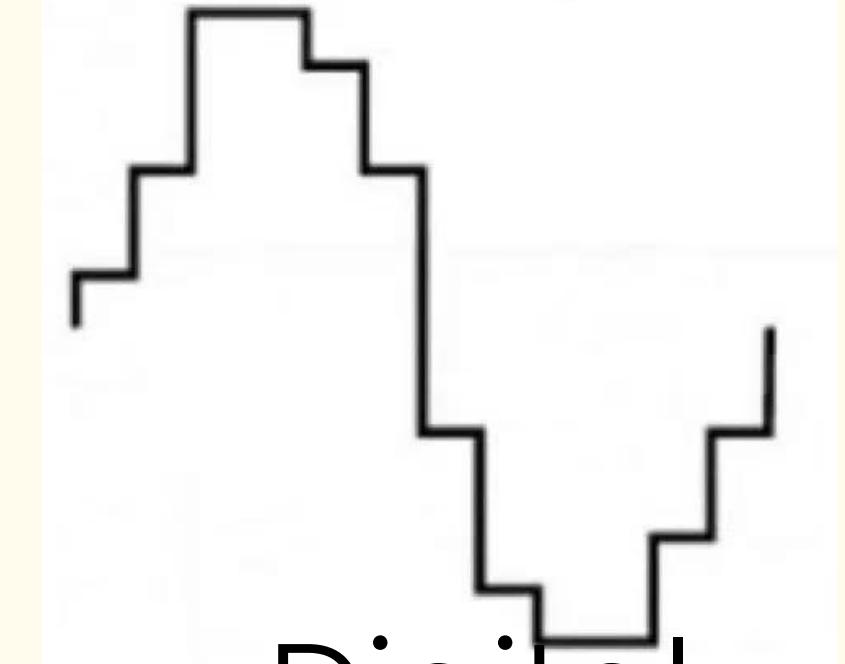
Analog



Digital

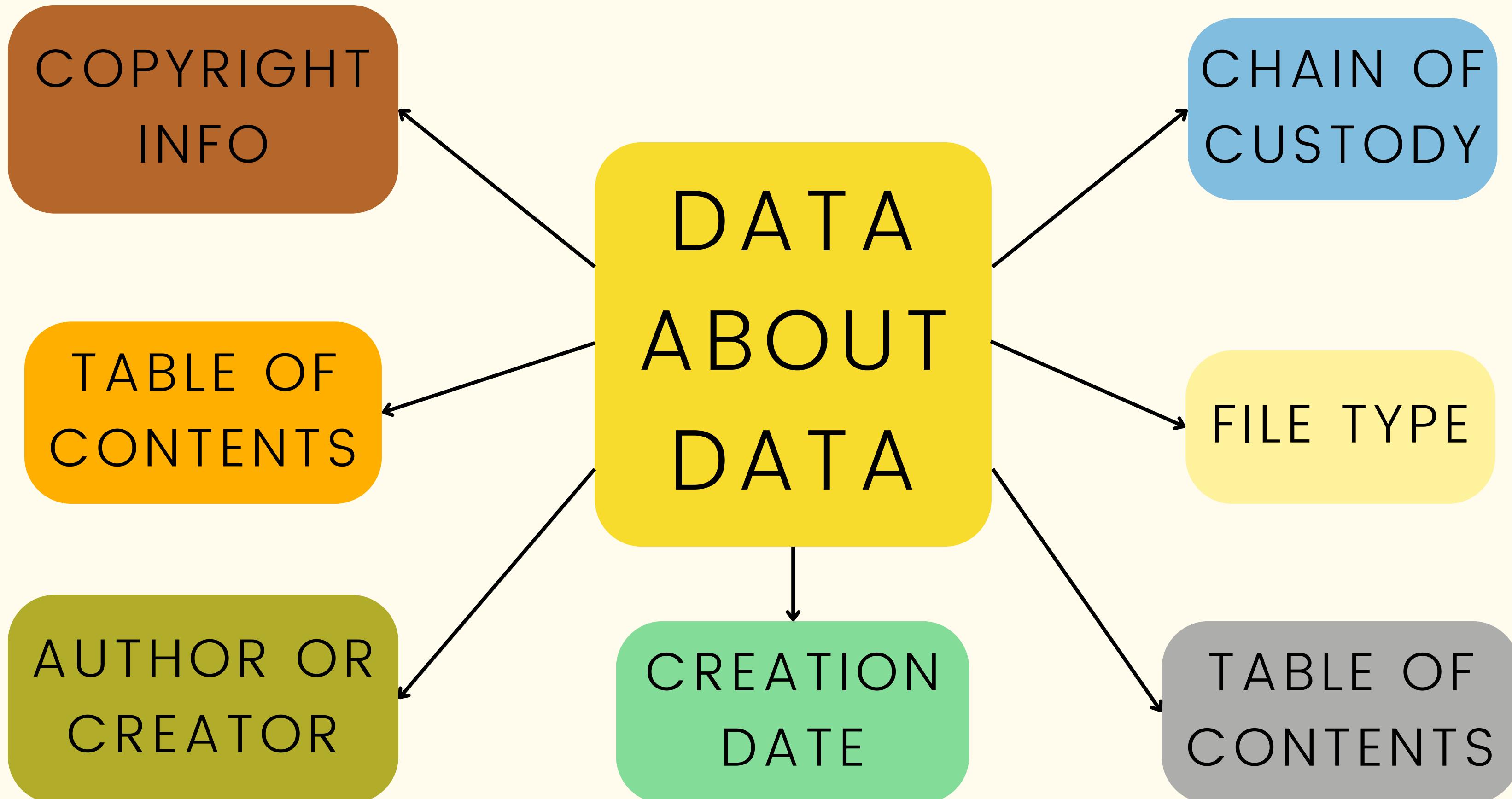


Digital



Digital

# METADATA



# STREAMS

Refers to the different types of content that a video or audio file can contain

The word stream is used because this information is often **time-based**, like with audio and video streams



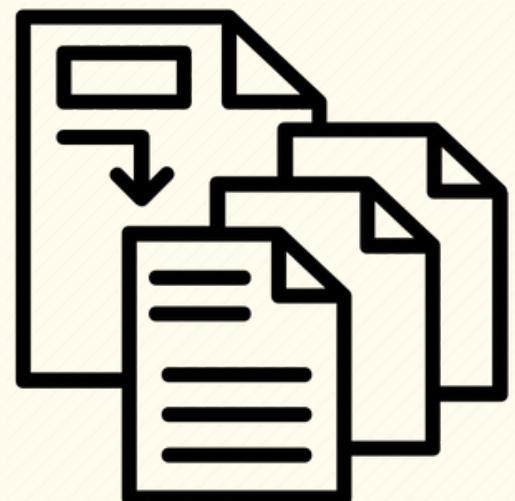
Video



Audio



Captions

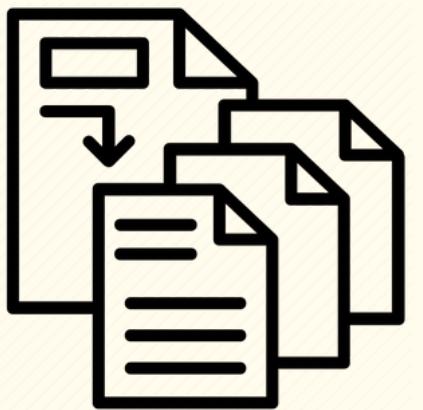


Metadata

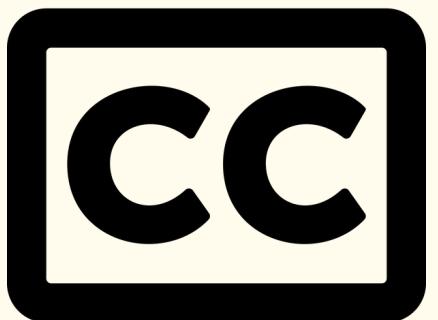
# ENCODING VS CONTAINER



Video



Metadata



Captions



Audio



## Encoding

How the streams of a file are formatted

## Container

The format that contains and organized the various streams

# ENCODING VS CONTAINER

MOV container

ProRes Video

PCM Audio

ProRes/MOV  
Video File

MKV container

FFV1 Video

FLAC Audio

SRT Subtitles

MKV/FFV1  
Video File

Often written as  
*encoding/container*

WAV container

PCM Audio

WAV  
Audio File

# PROPRIETARY VS OPEN SOURCE

Encodings and Wrappers can be owned by companies, making them **Proprietary**

**Open Source** formats can be freely modified and distributed, making them easier to maintain for long-term preservation

# TYPE OF LOSS

QUALITY

PHOTOCOPY OF A PHOTOCOPY

STREAM

CHAPTERS OF A BOOK MISSING

ORGANIZATION

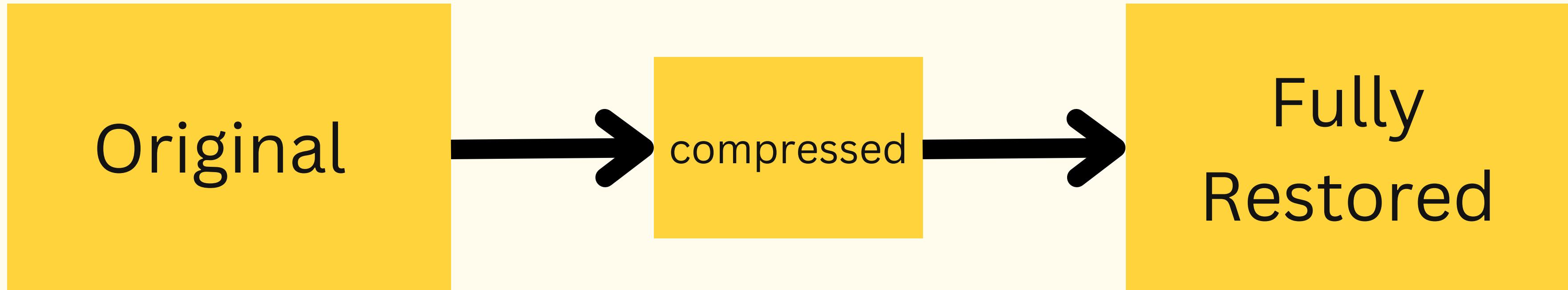
PAGES OF A BOOK OUT OF ORDER

METADATA

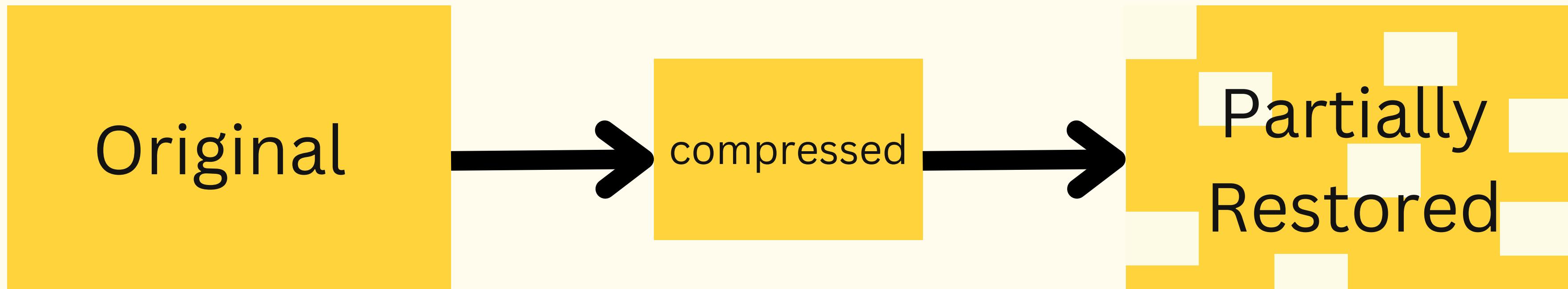
TABLE OF CONTENTS INCORRECT

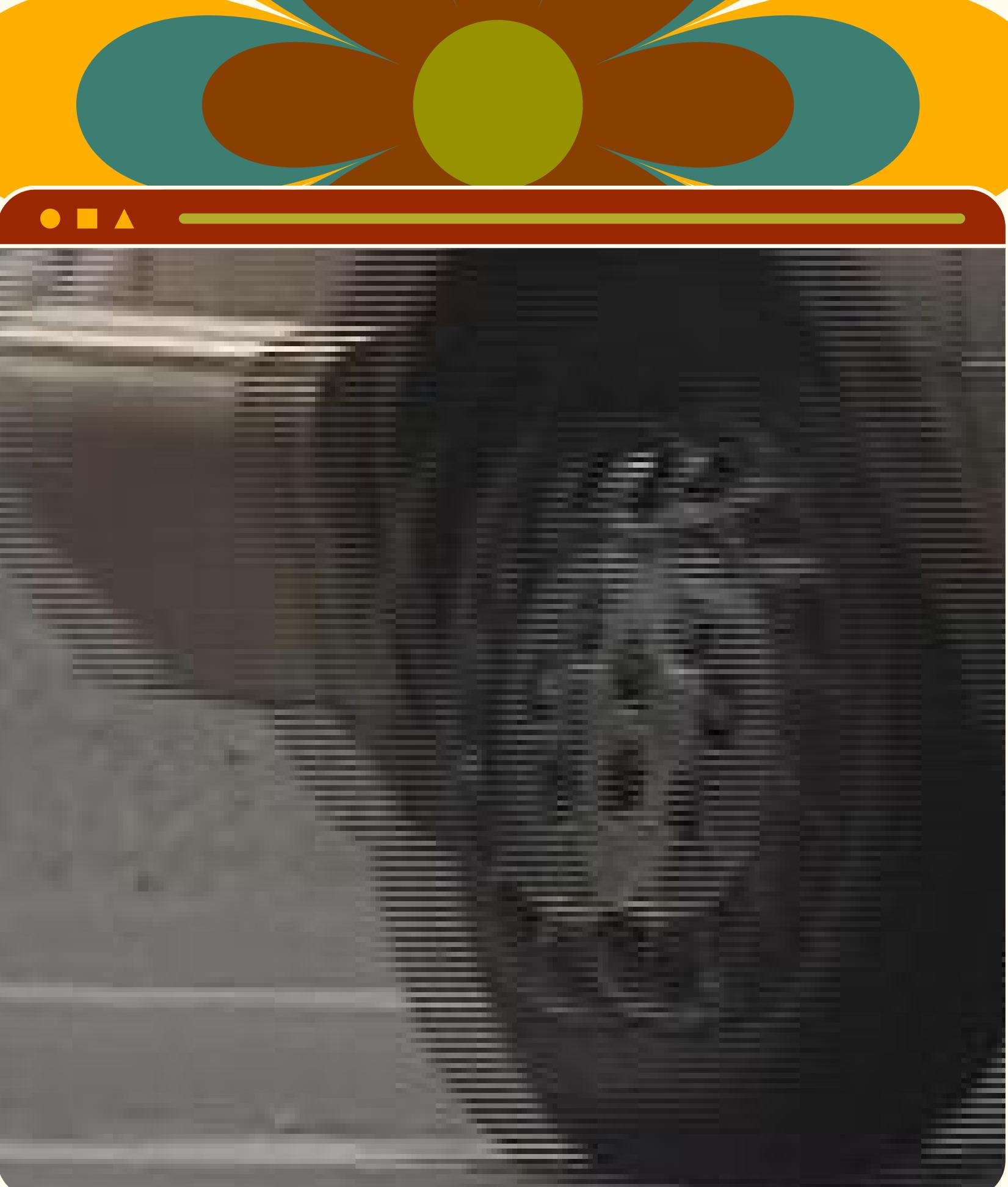
# TYPE OF COMPRESSION

## Lossless



## Lossy



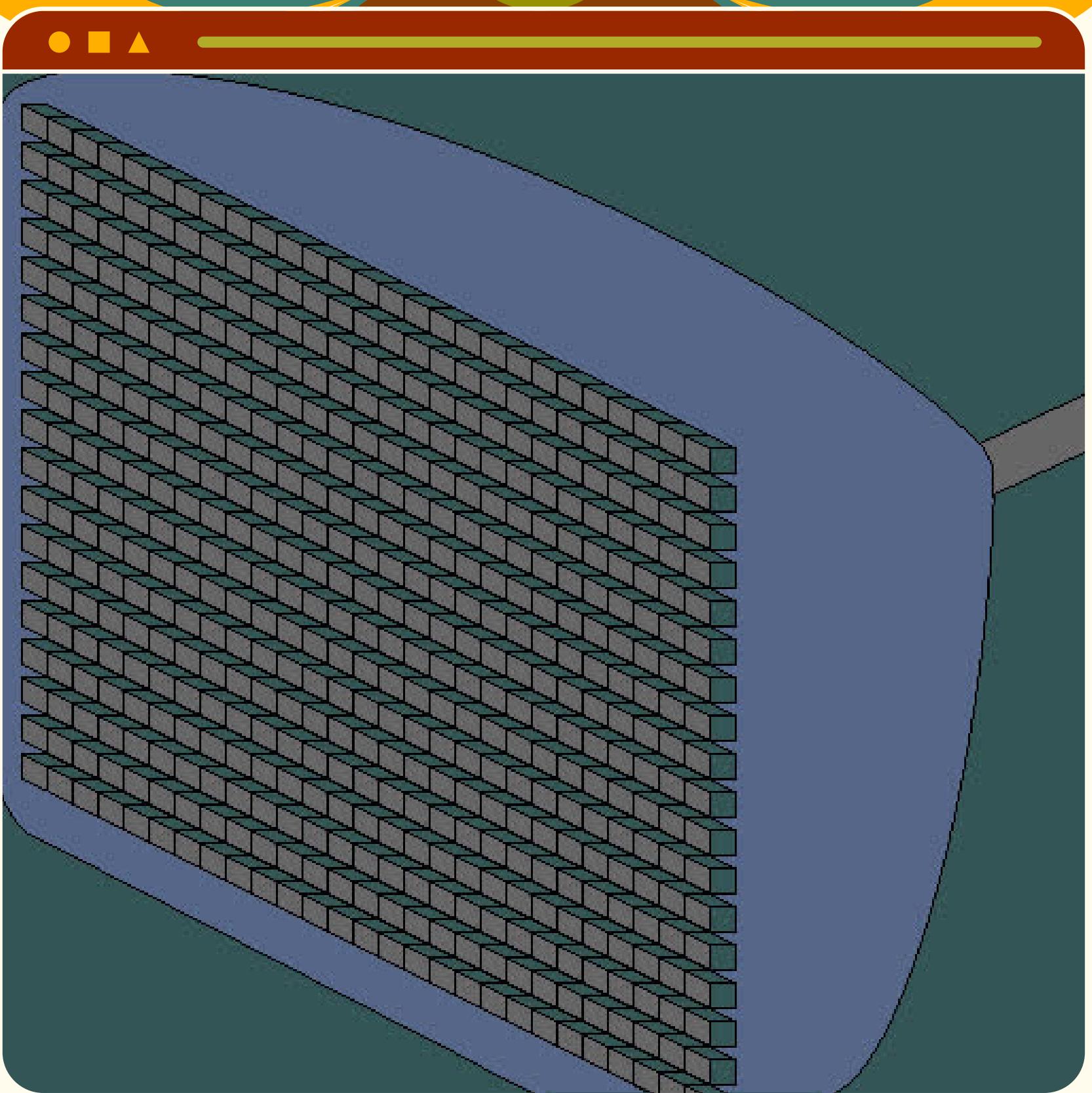


# INTERLACING

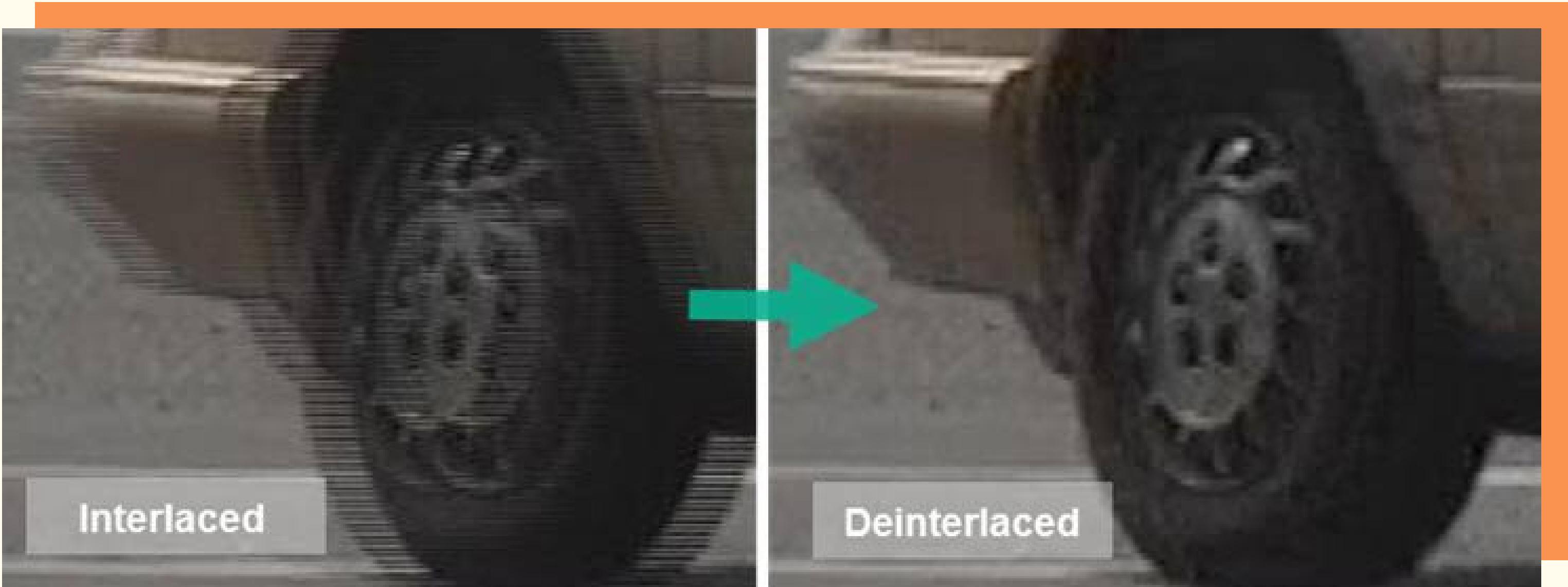
- Looks like horizontal lines tearing across the video
- ALL analog video is interlaced
- Preserving interlacing is an important part of preservation
- Looks good on a CRT, but not on a computer/LCD monitor

# WHY INTERLACED?

- Video was made to be viewed on Cathode Ray Tube (CRT) Monitors
- CRT's are interlaced because they are too slow to draw every line in order
- Every other line is drawn to maintain smooth motion



# DEINTERLACING



Most video editing tools have Deinterlacing algorithms that can deinterlace video so that it looks good on a computer screen, or any other progressive monitor

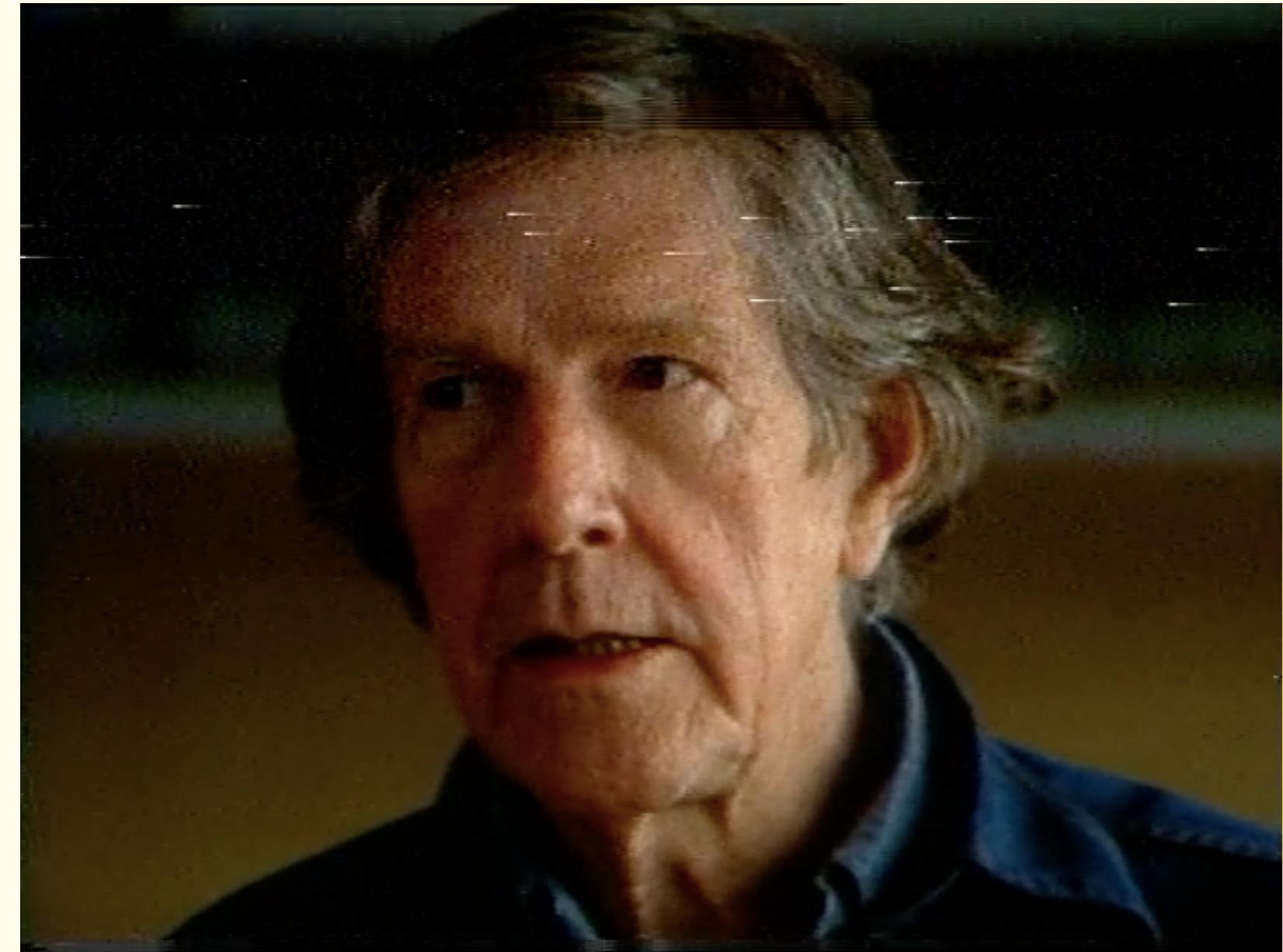
# RESOLUTION

Analog video is always  
720x486 (Standard Definition)

The picture frame is 486 lines tall.

When digitized, each line is turned into 720 pixels

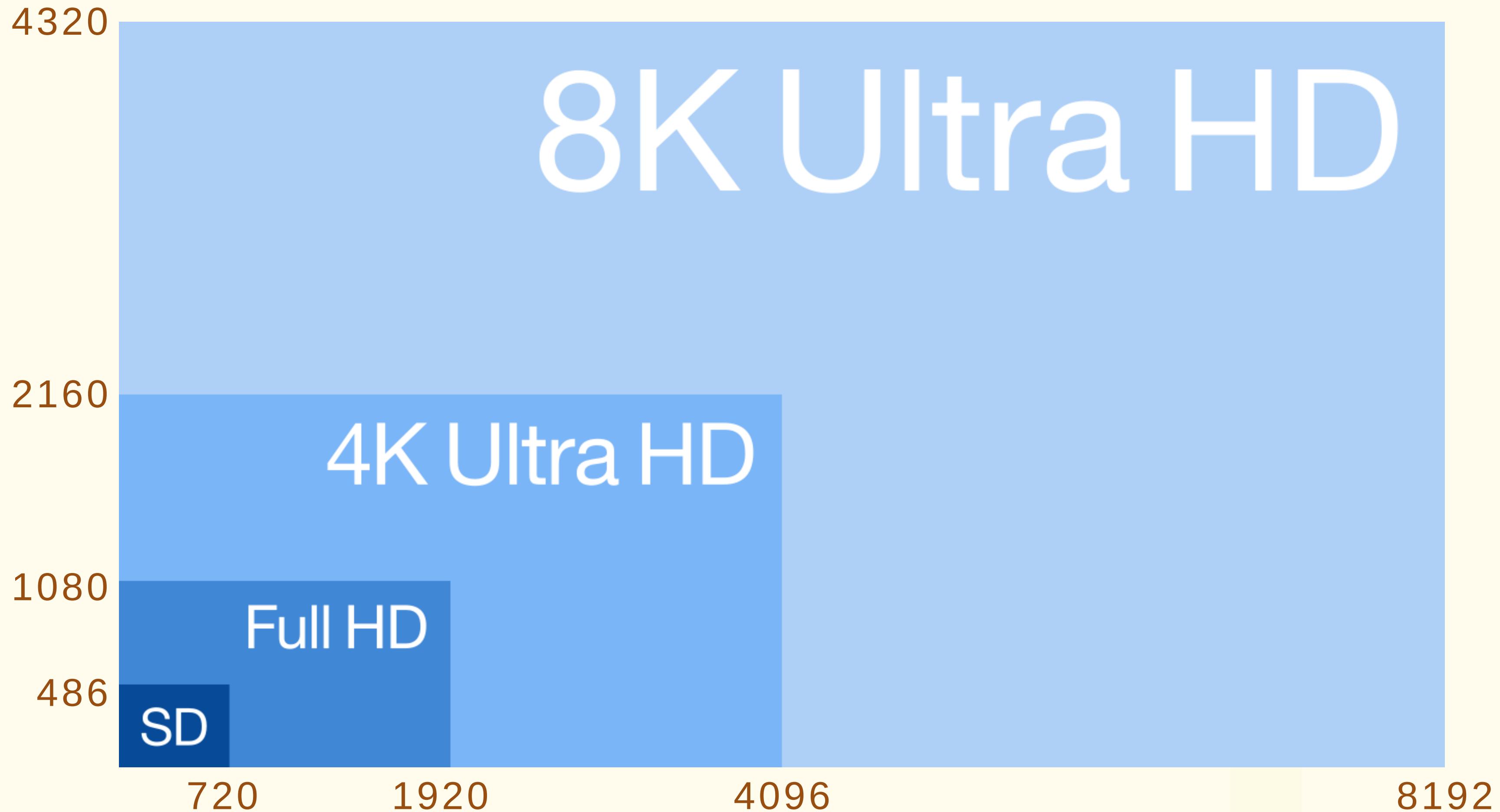
Digital Video is 480 lines tall because it's divisible by 4



|----- 720 -----|

720  
486

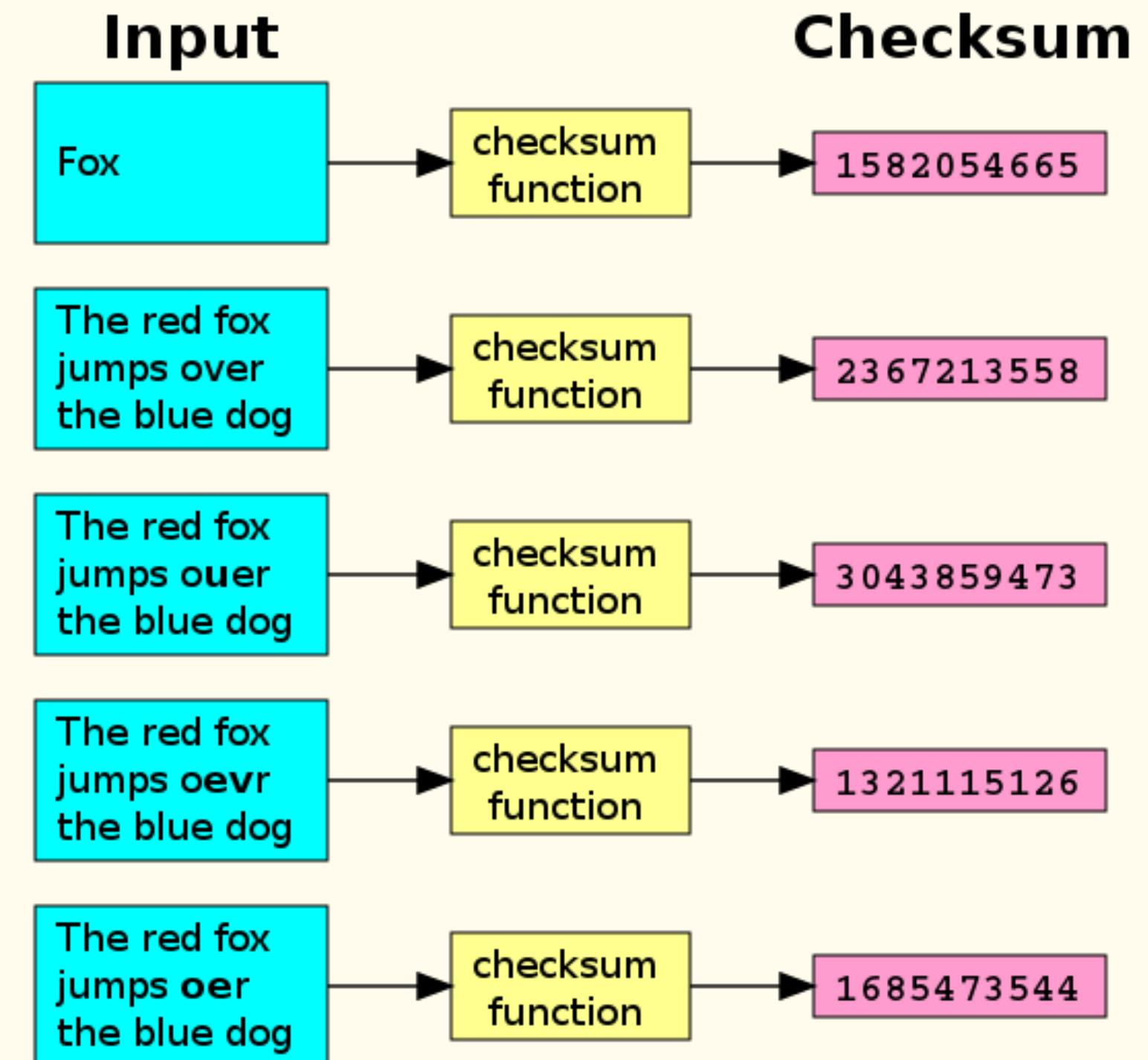
# RESOLUTION



# CHECKSUMS AND FIXITY

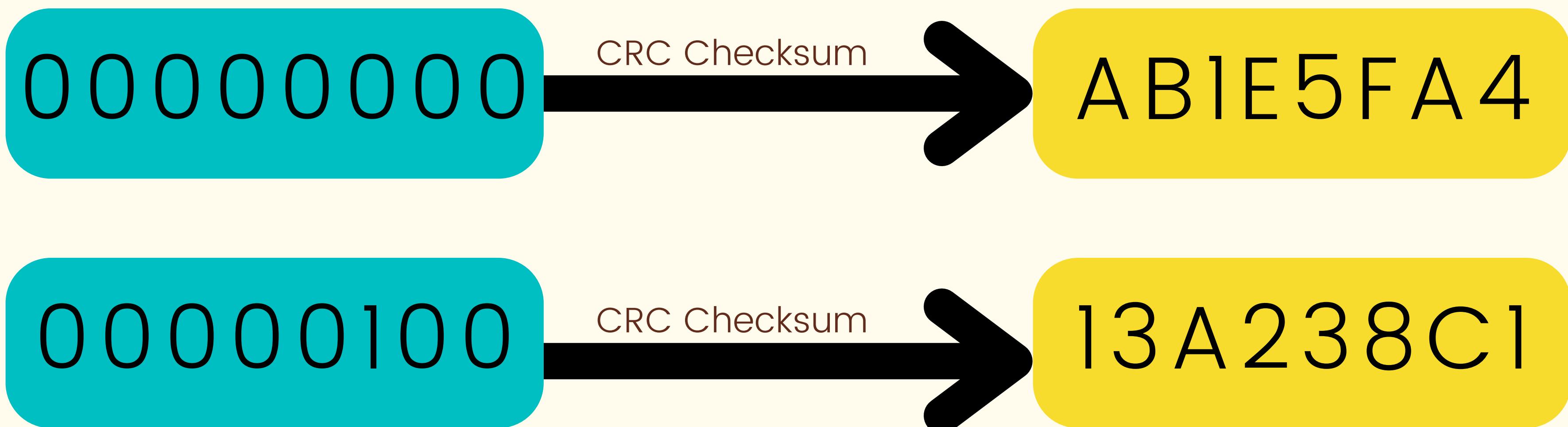
Fixity is the assurance that a digital file has remained unchanged, i.e. fixed.

A checksum, is a “digital fingerprint” derived from the 1's and 0's (bits) that make up a file. Checksums are often used to verify data integrity.



# CHECKSUMS AND FIXITY

Small changes in a file's content result in drastic changes  
in the file's checksum



# CHECKSUMS AND FIXITY

- Scheduled checksum verification is to ensure that files have not been changed or corrupted
- Checksums are often used to ensure files aren't corrupted when moved across drives or volumes
- Some formats have build in checksums



# PRESERVATION

- As close to the original as possible
- minimal/no loss
- Stable file format
- If compressed, must be lossless
- Interlaced to match source
- Internal checksums

# ACCESS

- Looks good on a screen
- Streamable
- Audio is loud and clear
- Blank audio channels are removed
- Unimportant content is removed
- Highly compressed, can be lossy
- Deinterlaced

# PRESERVATION

- As close to the original as possible
- minimal/no loss
- Stable file format
- If compressed, must be lossless
- Interlaced to match source
- Internal checksums

# ACCESS

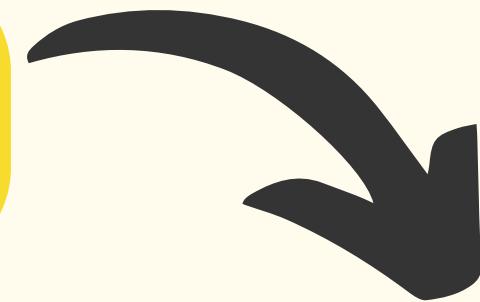
- Looks good on a screen
- Streamable
- Audio is loud and clear
- Blank audio channels are removed
- Unimportant content is removed
- Highly compressed
- Deinterlaced

# PRODUCTION

- Compatible with production/editing software
- Maintains original organization, allowing user to reorganize or edit as needed
- Lightly compressed, can be lossy
- Deinterlaced

# EXERCISE 1: FILE USE CASES

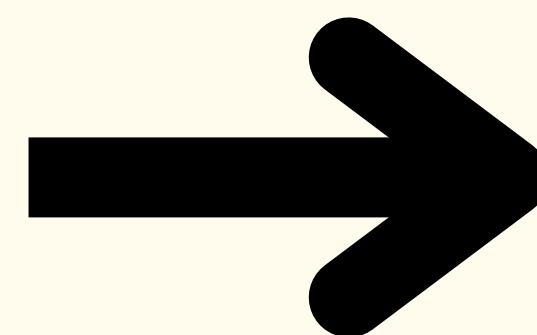
I'LL SHOW YOU EXAMPLE FILES LIKE THIS



File - Format / Wrapper

- File Attribute 1
- File Attribute 2
- File Attribute etc...

AND YOU DECIDE WHAT  
USE CASES THEY WOULD  
BE BEST SUITED FOR



PRESERVATION  
PRODUCTION  
ACCESS



# EXERCISE 1: FILE USE CASES

## File 1 - MP4 / H264

- Proprietary
- Highly Lossy Cmprsn
- Deinterlaced
- Audio Levels Boosted
- 720x480
- 100MB / hour

## File 2 – ProRes / MOV

- Proprietary
- Mildly Lossy Cmprsn
- Deinterlaced
- Audio same as tape
- 720x486
- 30GB / hour



# EXERCISE 1: FILE USE CASES

## File 1 - MP4 / H264

- Proprietary
- Highly Lossy Cmprsn
- Deinterlaced
- Audio Panned Center
- 720x480

• ACCESS

## File 2 – ProRes / MOV

- Proprietary
- Mildly Lossy Cmprsn
- Deinterlaced
- Audio same as tape
- 720x486

• PRODUCTION



# EXERCISE 1: FILE USE CASES

File 3 - MOV / v210

- Proprietary
- Uncompressed
- Interlaced
- 720x486
- 100GB / hr

File 4 - MKV / FFV1

- Open Source
- Lossless compression
- Interlaced
- 720x486
- Internal Checksums



# EXERCISE 1: FILE USE CASES

File 3 - MOV / v210

- Proprietary
- Uncompressed
- Interlaced
- 720x486
- 100GB / hr
- PRESERVATION

File 4 - MKV / FFV1

- Open Source
- Lossless compression
- Interlaced
- 720x486
- Internal Checksums
- PRESERVATION



# EXERCISE 1: FILE USE CASES

## File 5 - DV

- Proprietary
- Mildly Lossy Cmprsn
- Interlaced
- Audio same as tape
- 720x480
- 13GB / hr

## File 6 - HEVC

- Proprietary
- Lossy compression
- Deinterlaced
- Audio levels boosted
- 1920x1080
- 400MB / hr



# EXERCISE 1: FILE USE CASES

## File 5 - DV

- Proprietary
- Mildly Lossy Cmprsn
- Interlaced
- Audio same as tape
- 720x480
- 13GB / hr

• PRODUCTION

## File 6 - HEVC

- Proprietary
- Lossy compression
- Deinterlaced
- Audio levels boosted
- 1920x1080
- 400MB / hr

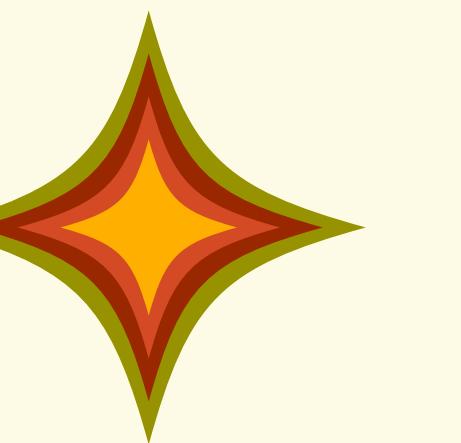
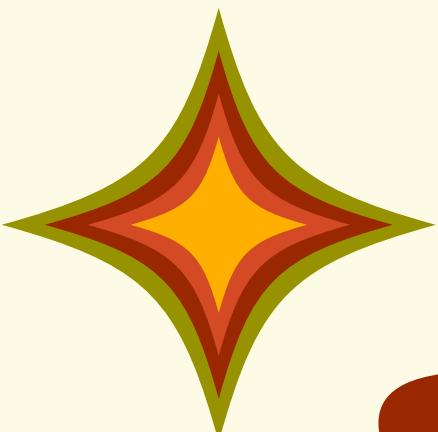
• ACCESS

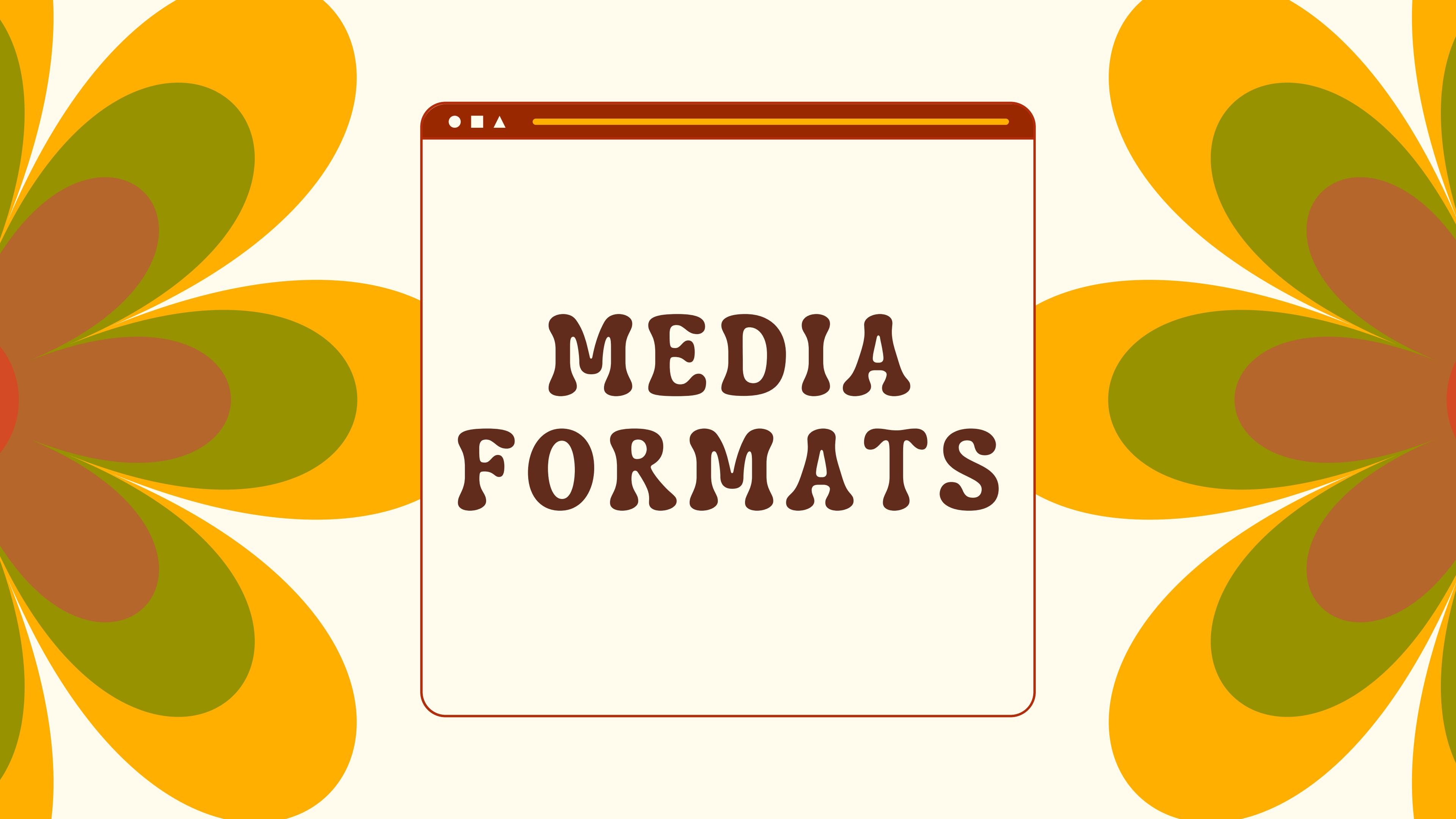


# PART ONE RECAP

- ◆ Tape formats **MUST** be digitized and Migrated
- ◆ Preservation and Access serve different need and require different approaches
- ◆ Digitization means going from Analog to Digital
- ◆ Migration means moving across Digital Formats

BREAK  
TIME





# MEDIA FORMATS

# PHYSICAL MEDIA FORMATS

- Analog Tape
  - VHS, U-matic, BetaCam
- Digital Tape
  - MiniDV, DVCAM, DVCPRO, HDV
- Optical Disc
  - CD, DVD, Blu-Ray



# MEDIA FORMATS

## ANALOG TAPE

- Analog Signal recorded to Magnetic Tape
- Interlaced
- Uncompressed
- Standard Definition (SD)
- VHS, U-matic, Betacam



# MEDIA FORMATS

## ANALOG TAPE



# MEDIA FORMATS

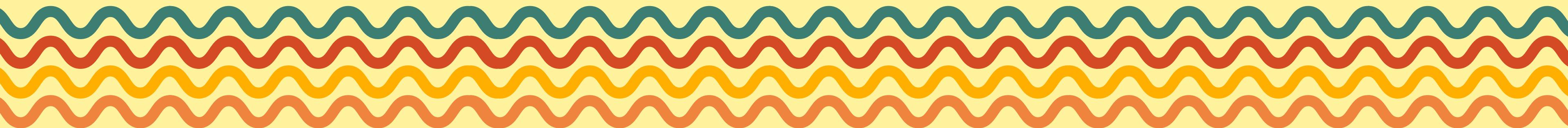
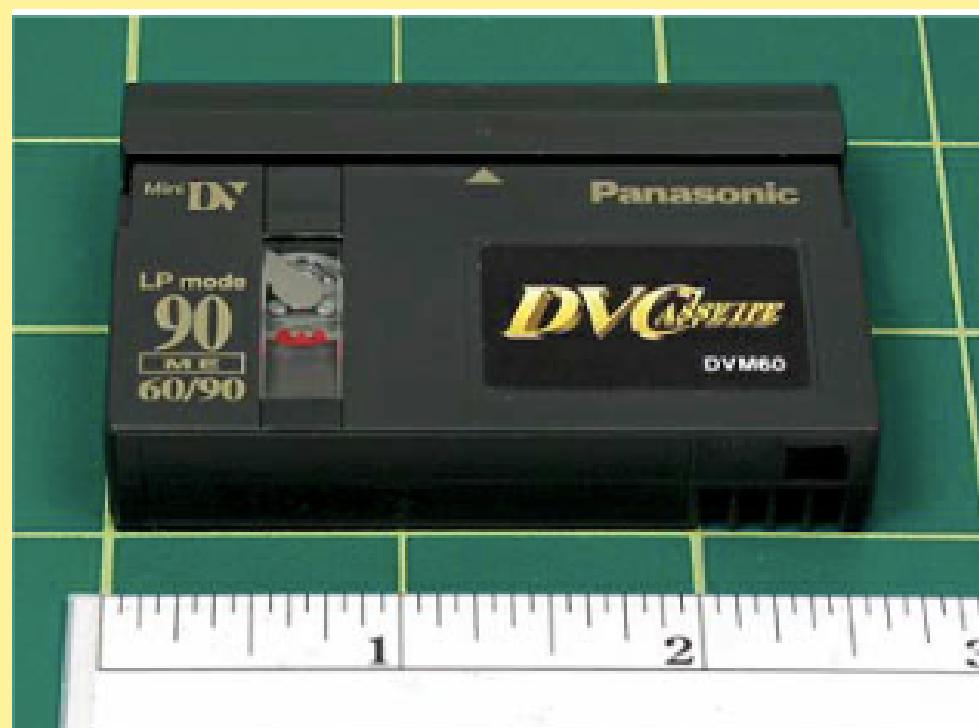
## DIGITAL TAPE

- Digital signal (1's and 0's) recorded to Magnetic Tape
- Can be Interlaced or Deinterlaced
- Lossy Compressed
- Can be Standard Definition (SD) or High Definition (HD)
- Contains Digital Metadata on tape
- MiniDV, DVCAM, HDV



# MEDIA FORMATS

## DIGITAL TAPE



# MEDIA FORMATS

## OPTICAL DISC

- Digital signal encoded onto a disc
- Can hold audio streams, video streams, or file-based content
- CD, DVD, Blu-Ray



# MEDIA FORMATS

## OPTICAL DISC



CD, DVD, or BLU-RAY ?





# PRESERVATION FORMATS

# PRESERVATION FORMATS

- Video formats suffer from degradation and obsolescence, they must be converted
- Preservation Formats are types of files that can properly store AV content Losslessly and remain Stable, for a Long Time



# THERE IS NO "ONE SIZE FITS ALL" PRESERVATION FORMAT



ANALOG  
TAPE

DIGITAL  
TAPE

OPTICAL  
DISC

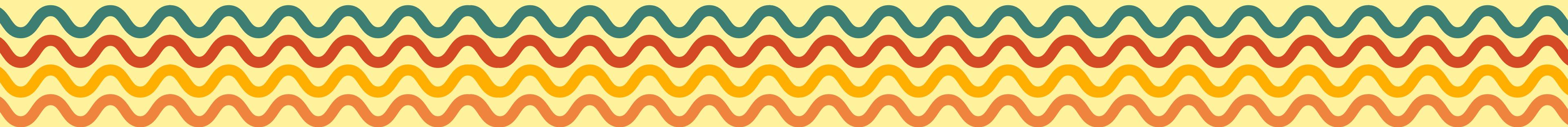
# ANALOG TAPE

Analog Video must be  
converted to a digital  
file without losing quality  
or structure



# DIGITAL TAPE

Already digital, so it needs to  
be turned into a file (or files)  
without losing data, including  
metadata present on the tape  
(migration)



# OPTICAL DISC

Already digital, so it needs to  
be turned into a file (or files)  
without losing data or  
structure (migration)

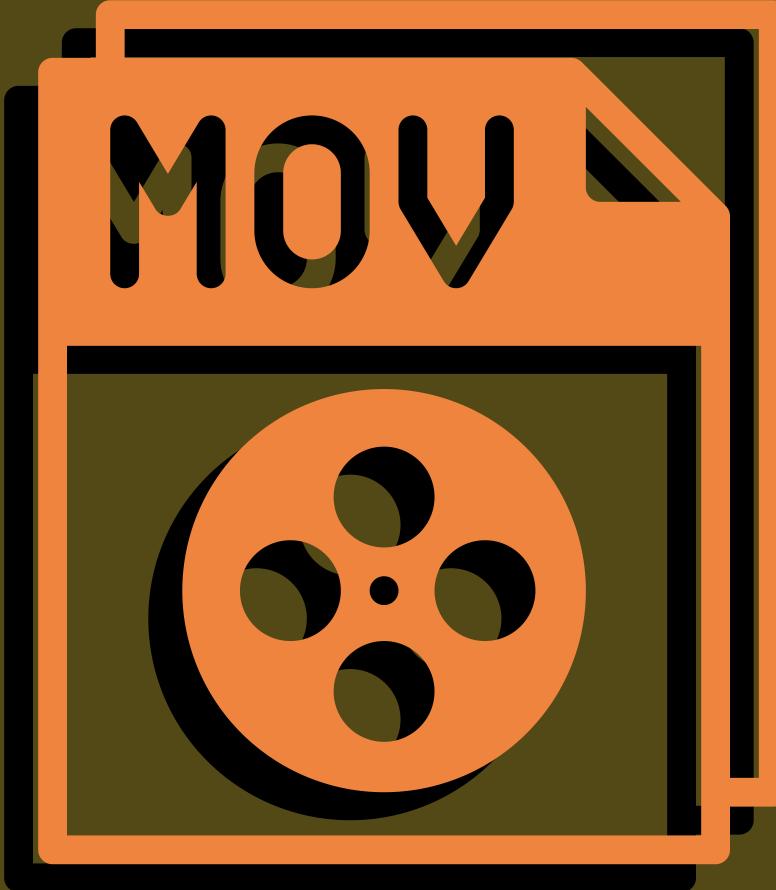


# ACCESS



H.264 / MP4

# PRODUCTION



ProRes / MOV  
(422 HQ)

# ANALOG PRESERVATION FORMAT DETAILS

- **Bit Depth** -> Defines how detailed the quality can be
  - *10 bits at least*
- **Compression** -> Compression makes large files smaller
  - *Uncompressed or Lossless*
- **Stream Support** -> AV files need to support various types of streams found on tape-based media
  - *Video, Multiple Audio, Timecode and Subtitles*
- **Frame-Level Checksums** -> Ensures AV data is not corrupted
  - *Some formats provide frame-level checksums*

# ANALOG PRESERVATION FORMAT DETAILS

- **Open Source** -> The technology behind the format can be freely modified and distributed
  - *Ideal for more advanced and complex formats*
- **Broad Technical Support** -> Have others in the field adopted it?
  - *The more adoption there is the longer the format will be supported*

# PRES FORMATS FOR ANALOG TAPE

Encoding / Wrapper	Bit Depth	Compression	Flexible Streams	Frame-Level Checksum	Open Source	Broad Technical Support	Conclusion
H.264 / MP4	Depends, but often 8 Bit	Lossy	Medium	No	No	Yes	1.5 / 6
DV25 / DV	8 Bit	Lossy	No	No	No	No	0 / 5
ProRes / MOV	10 Bit	Lossy	Medium	No	No	Yes	2.5 / 6
UYVY / MOV	8 Bit	None	Medium	No	No	Medium	2 / 6
V210 / AVI	10 Bit	None	No	No	No	No	2 / 6
V210 / MOV	10 Bit	None	Medium	No	No	Yes	3.5 / 6
J2K / MXF	10 Bit	Lossless	Yes	Yes	No	No	4 / 6
FFV1 / MKV	10 Bit	Lossless	Yes	Yes	Yes	No	5 / 6

# PRES FORMATS FOR ANALOG TAPE

- **10-Bit Uncompressed YUV 4:2:2 -> MOV**
  - Most common and easy to use format
  - 100GB/hr SD NTSC
- **Losslessly Compressed JPEG2000 -> MXF**
  - Used by Library of Congress
  - Expensive to Implement
  - 40-50 GB/hr SD NTSC
- **Losslessly Compressed FFv1 -> MKV**
  - Open Source
  - Cheap to Implement
  - 35-55 GB/hr SD NTSC

# PRES FORMAT FOR ANALOG TAPE

## QUALITY

DEPENDS ON QUALITY OF VIDEO CONVERSION

## STREAM

NEED TO FIND A FORMAT THAT PROPERLY CAPTURES ALL STREAMS

## ORGANIZATION

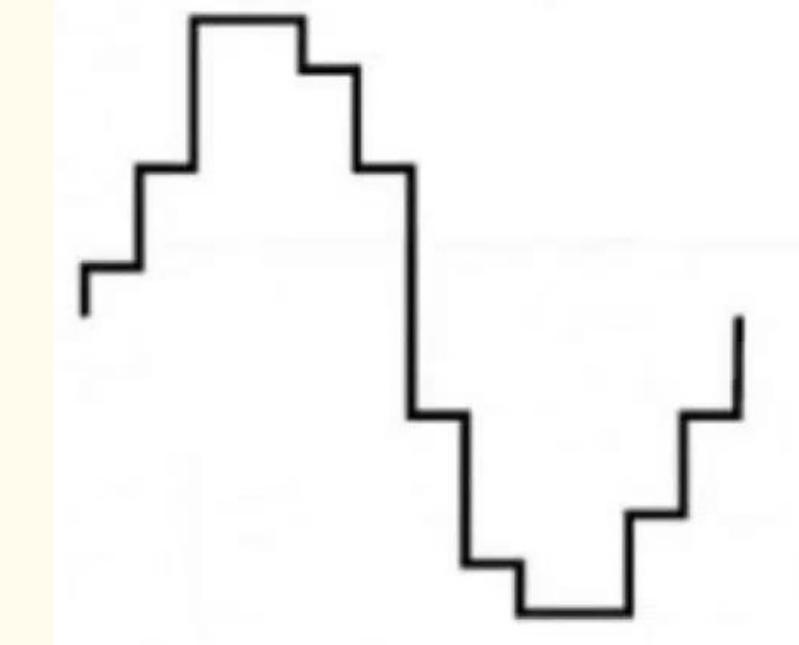
MAKE SURE LEFT AND RIGHT AUDIO CHANNELS ARE PROPERLY CAPTURED

## METADATA

DESCRIPTIVE INFO ON TAPE LABEL NEEDS TO BE MANUALLY TRANSCRIBED

# PRES FORMATS FOR DIGITAL TAPE

MUCH SIMPLER THAN  
ANALOG FORMATS BECAUSE  
IT'S ALREADY DIGITAL



USE THE SAME FORMAT THAT  
THE VIDEO CONTENT IS  
ALREADY IN

# PRES FORMATS FOR DIGITAL TAPE



MIGRATE  
TO



# PRES FORMAT FOR DIGITAL TAPE

QUALITY

EXACT BIT FOR BIT COPY

STREAM

ALL STREAMS RETAINED EXACTLY

ORGANIZATION

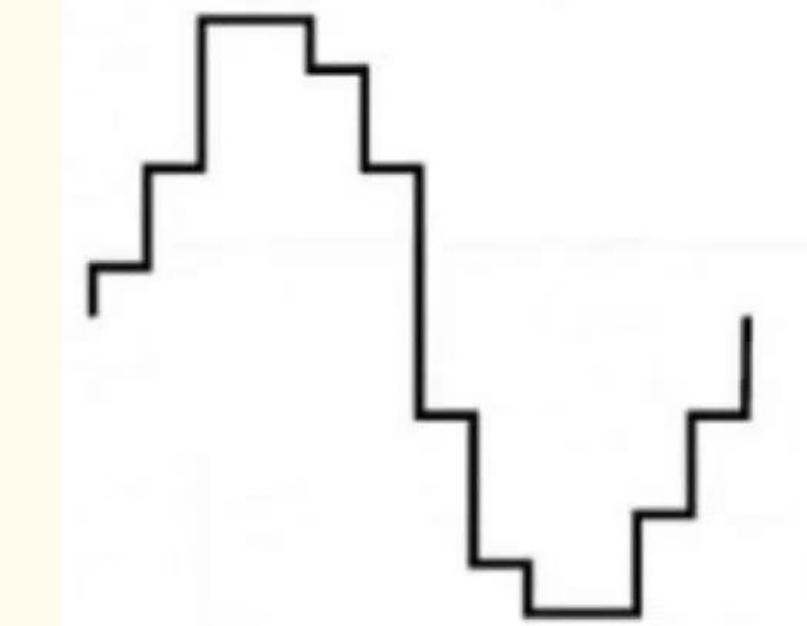
MIGRATE FROM TAPE TO FILE

METADATA

METADATA RETAINED EXACTLY

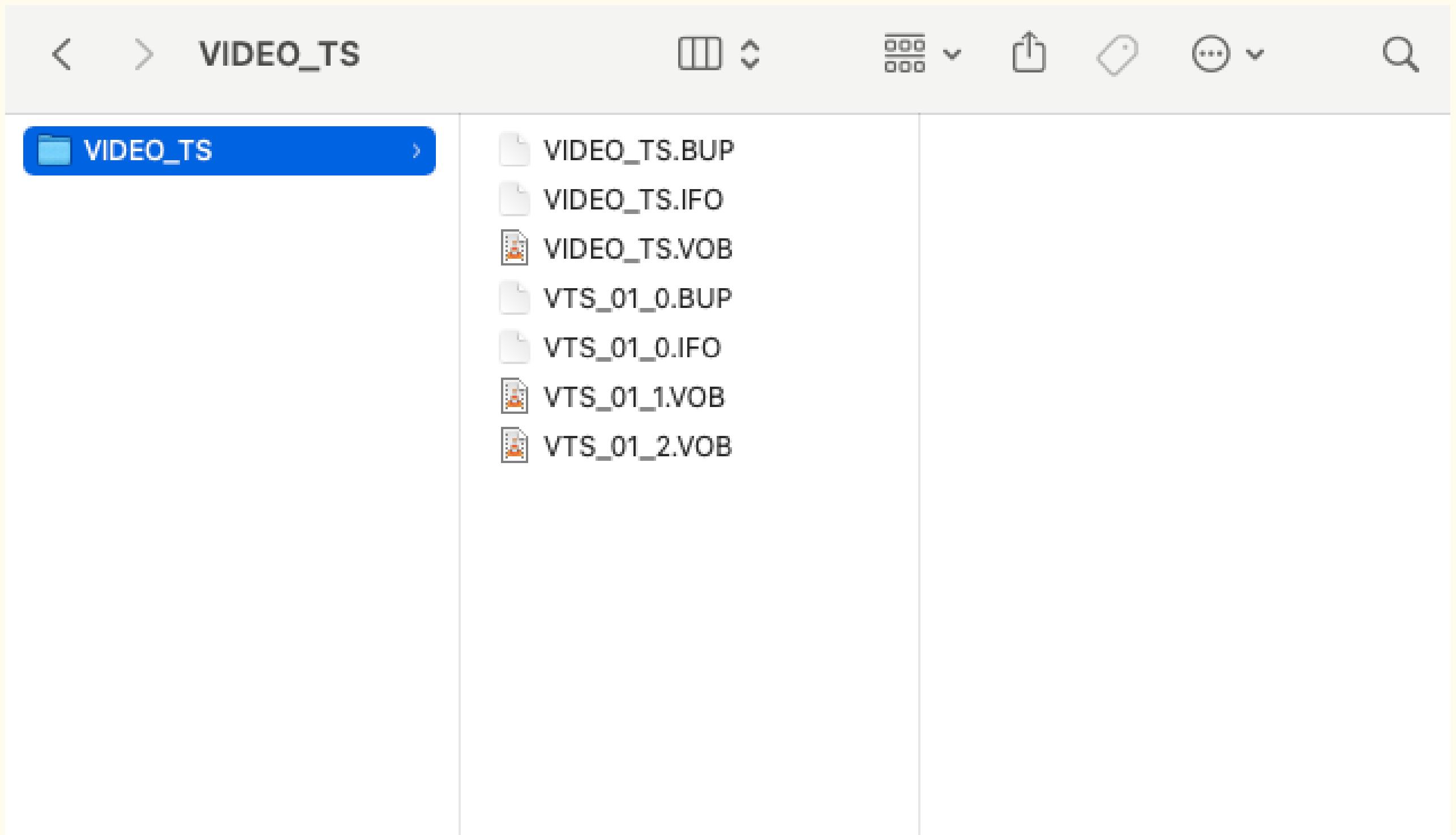
# PRES FORMATS FOR OPTICAL DISCS

SIMILAR TO DIGITAL TAPES, THE  
CONTENT IS ALREADY DIGITAL  
SO MIGRATE IT TO A FILE

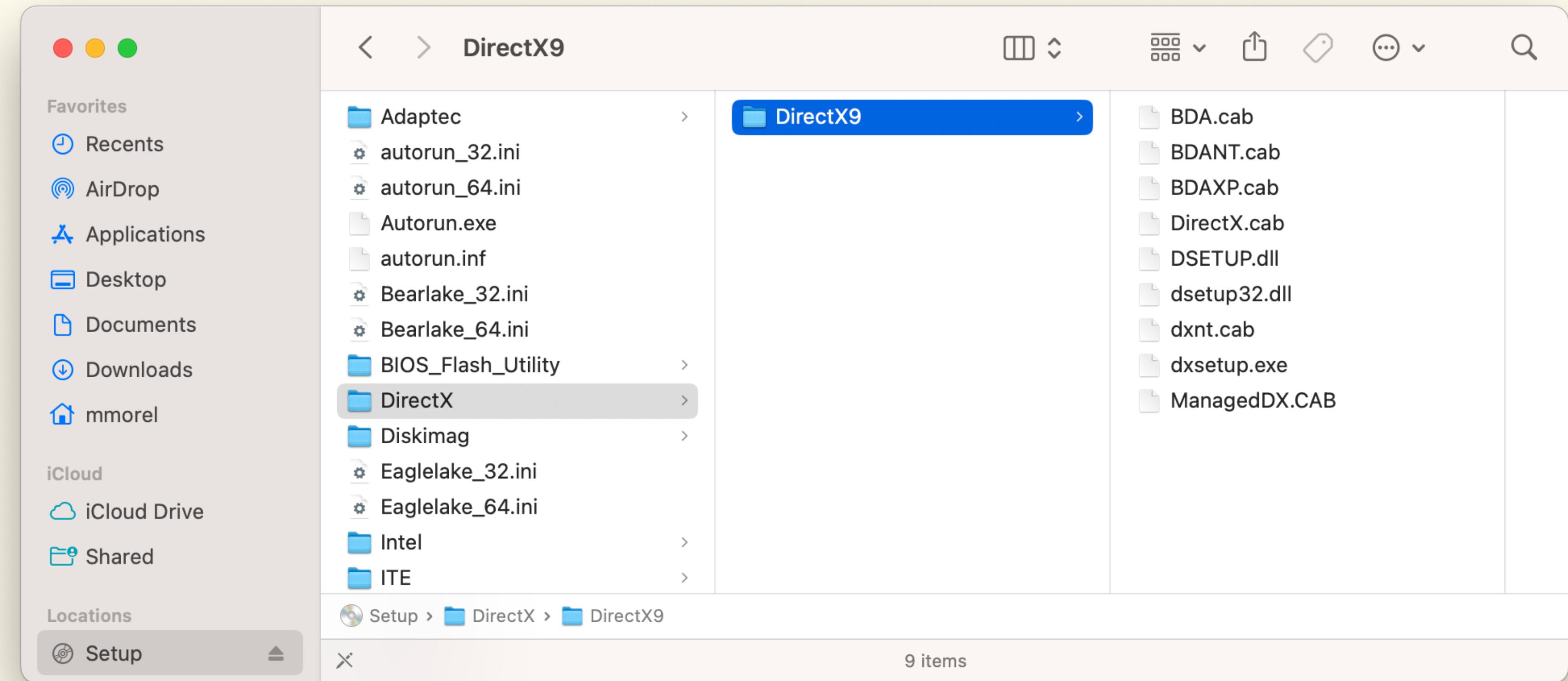


COMPLEX IN THAT DIFFERENT  
TYPES OF DISCS HAVE DIFFICULT  
FOLDER AND FILE STRUCTURES

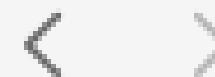
# DVD-VIDEO



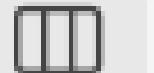
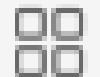
# DVD-ROM



# BLU-RAY



PLAYLIST



- AUXDATA >
- BACKUP >
- BDJO >
- CLIPINF >
- index.bdmv
- JAR >
- META >
- MovieObject.bdmv
- PLAYLIST > **PLAYLIST**
- STREAM >

- 00000.mpls
- 01900.mpls

# PRES FORMATS FOR OPTICAL DISC



MIGRATE  
TO



# ISO FORMAT FOR OPTICAL DISC

**QUALITY**

EXACT BIT-FOR-BIT COPY

**STREAM**

ALL STREAMS RETAINED EXACTLY

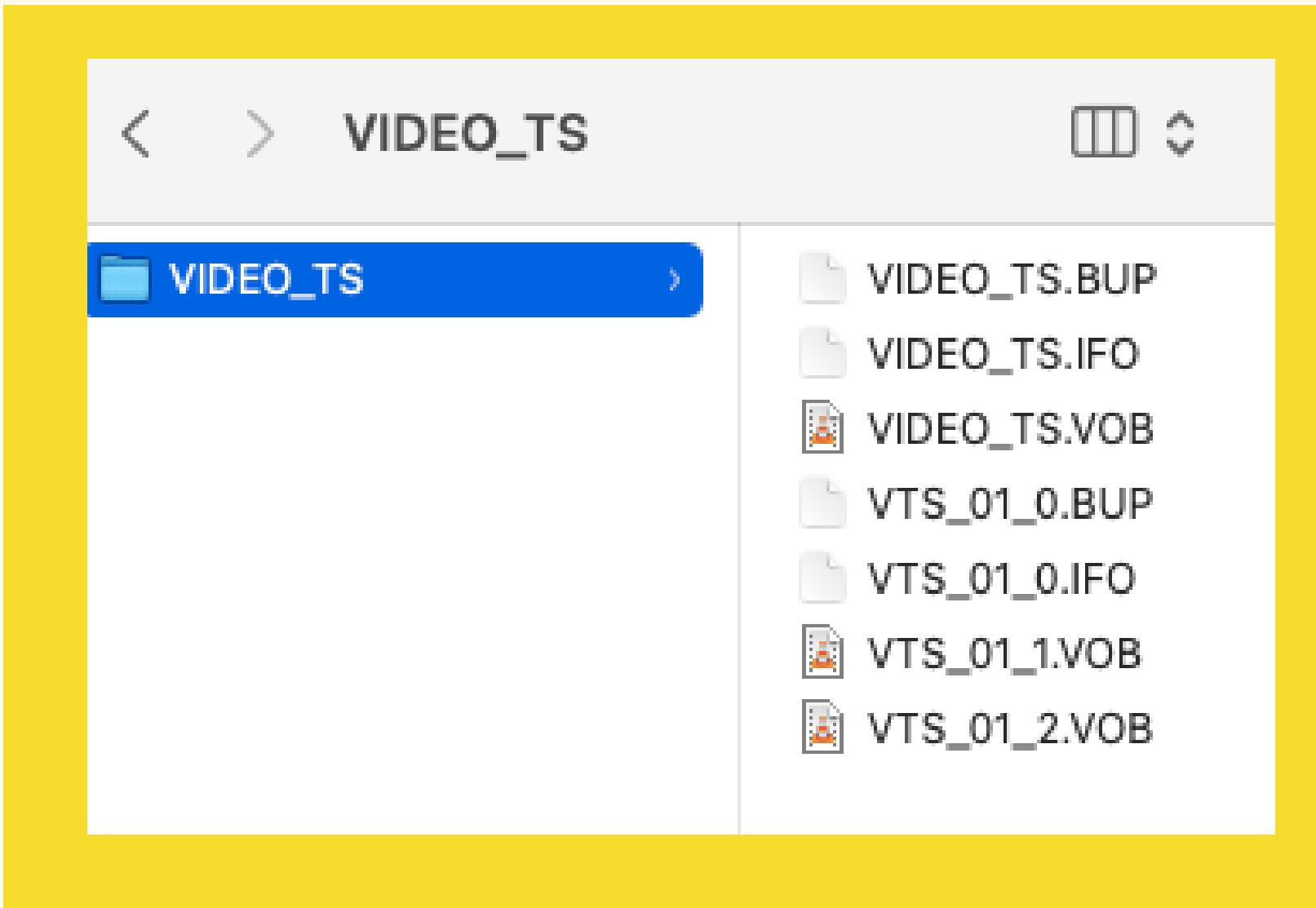
**ORGANIZATION**

ORGANIZATION RETAINED EXACTLY

**METADATA**

METADATA RETAINED EXACTLY

# PRESERVATION



# ACCESS

VS



# EXERCISE 2: PRES FORMATS



# EXERCISE 2: PRES FORMATS

ANALOG  
TAPE

1) MAINTAIN  
ORGANIZATION OF  
ORIGINAL

DIGITAL  
TAPE

4) UNCOMPRESSED

OPTICAL  
DISC

2) LOSSLESS  
COMPRESSION

COMPATIBLE WITH  
COMMON PLAYBACK  
SYSTEMS

3) COMPLEX STRUCTURE  
CAPABLE OF HOLDING  
VARIOUS FILES

OPEN SOURCE

# EXERCISE 2: PRES FORMATS

ANALOG  
TAPE

DIGITAL  
TAPE

OPTICAL  
DISC

1) MAINTAIN  
ORGANIZATION OF  
ORIGINAL

ANALOG  
TAPE

OPTICAL  
DISC

DIGITAL  
TAPE

2) LOSSLESS  
COMPRESSION

3) COMPLEX STRUCTURE  
CAPABLE OF HOLDING  
VARIOUS FILES

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5) COMPATIBLE WITH  
COMMON PLAYBACK  
SYSTEMS

6) OPEN SOURCE

# EXERCISE 2: PRES FORMATS

ANALOG  
TAPE

DIGITAL  
TAPE

OPTICAL  
DISC

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ORGANIZATION OF  
ORIGINAL

ANALOG  
TAPE

OPTICAL  
DISC

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ANALOG  
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COMMON PLAYBACK  
SYSTEMS

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# EXERCISE 2: PRES FORMATS

ANALOG  
TAPE

DIGITAL  
TAPE

OPTICAL  
DISC

1) MAINTAIN  
ORGANIZATION OF  
ORIGINAL

ANALOG  
TAPE

OPTICAL  
DISC

DIGITAL  
TAPE

2) LOSSLESS  
COMPRESSION

ANALOG  
TAPE

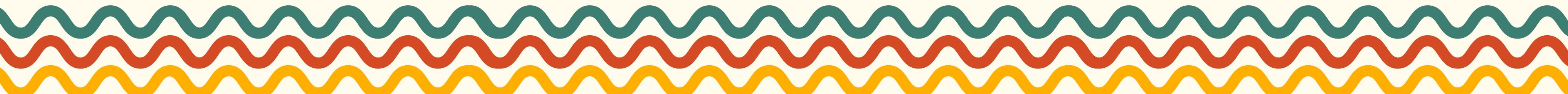
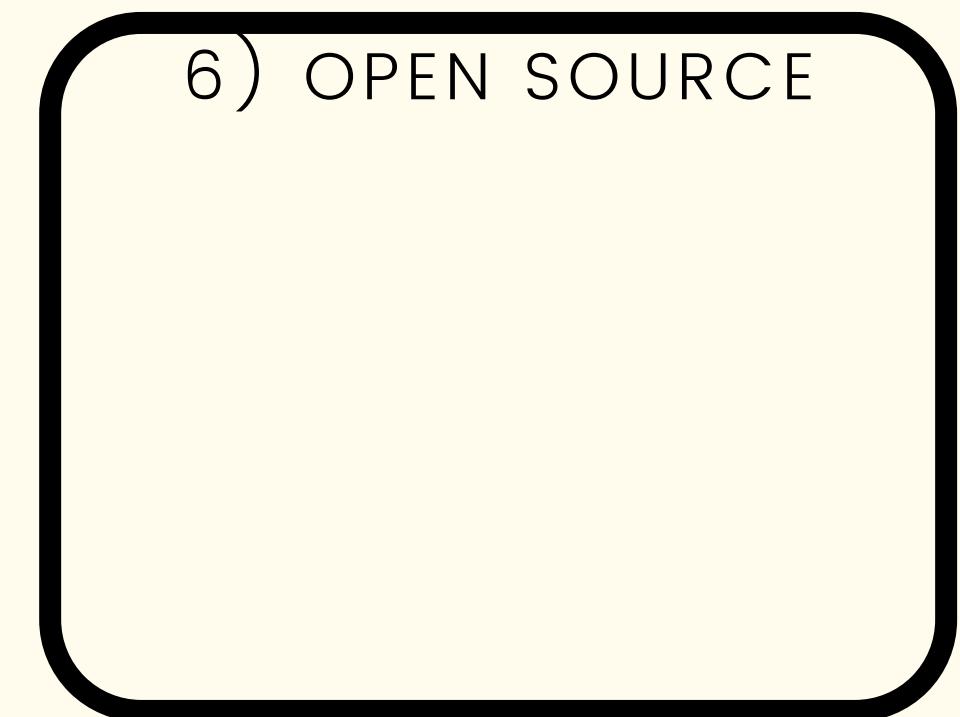
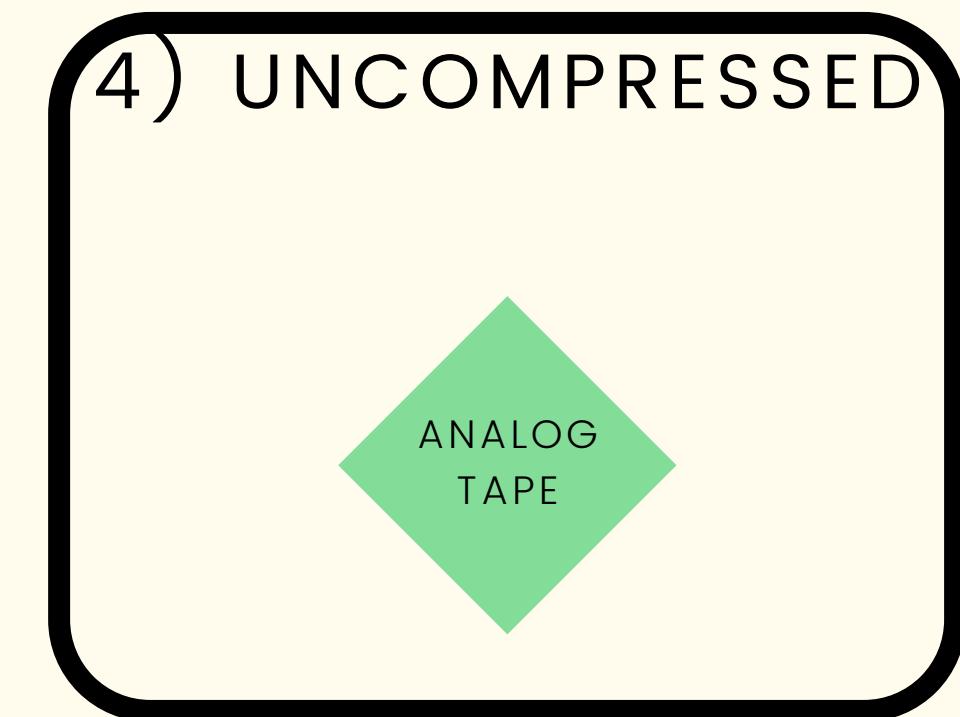
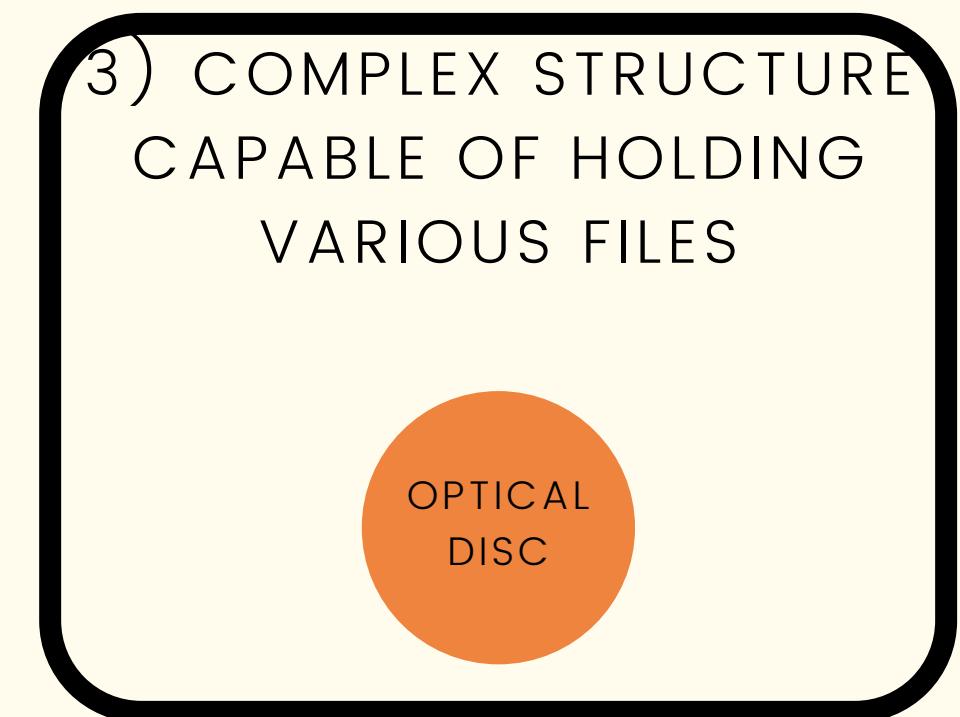
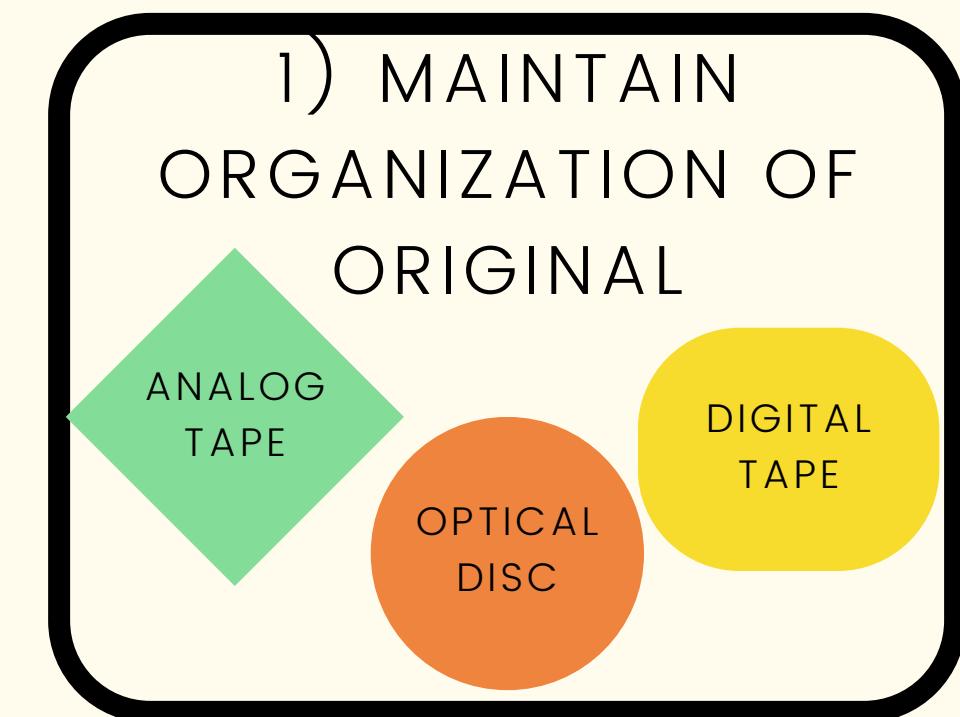
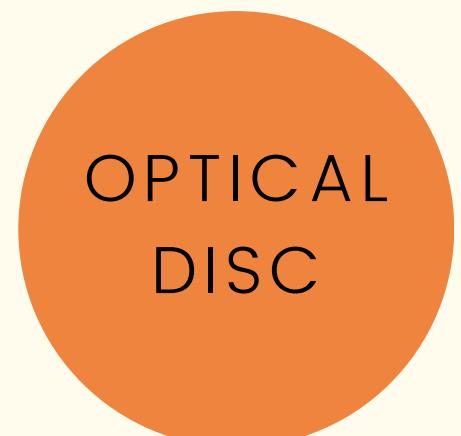
OPTICAL  
DISC

4) UNCOMPRESSED

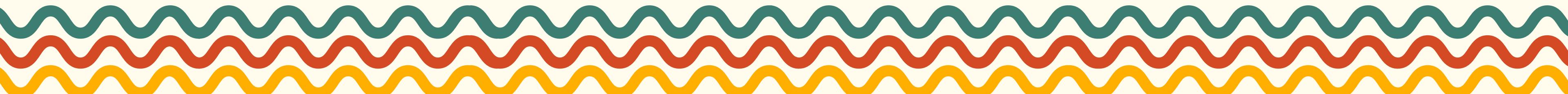
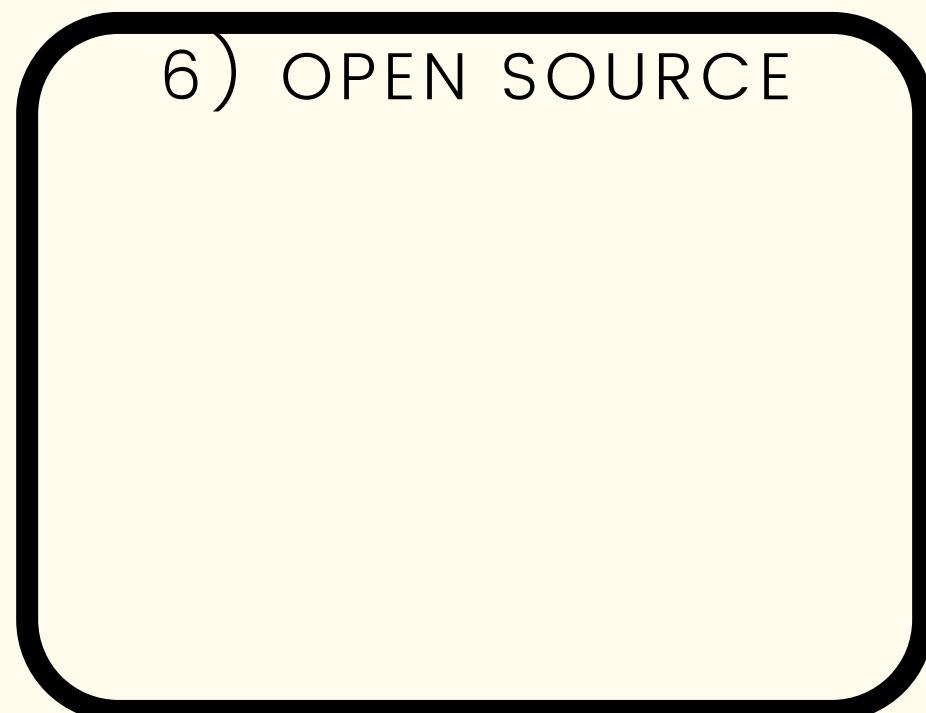
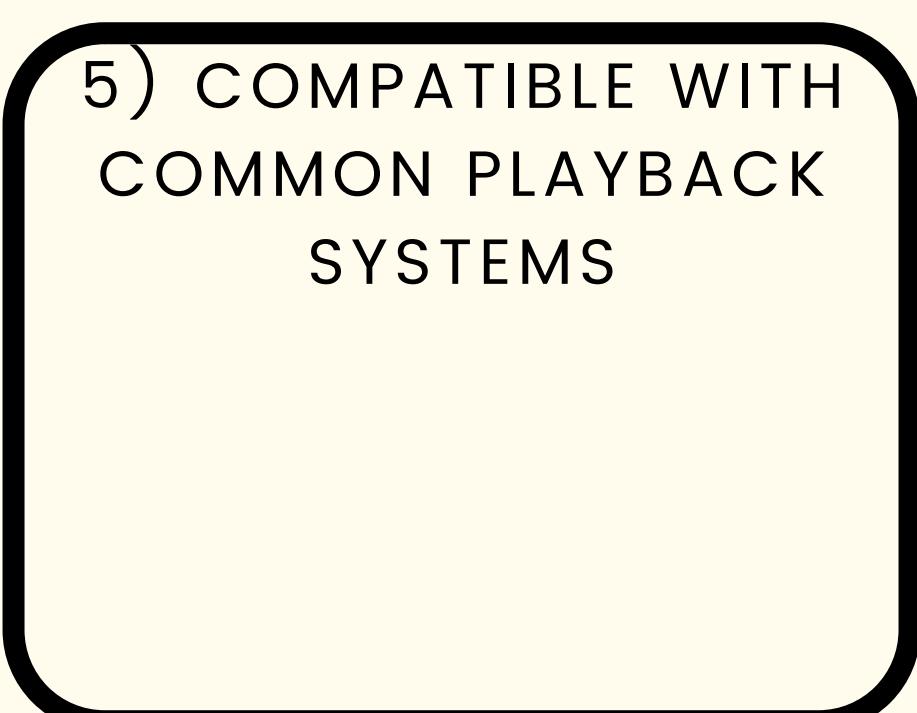
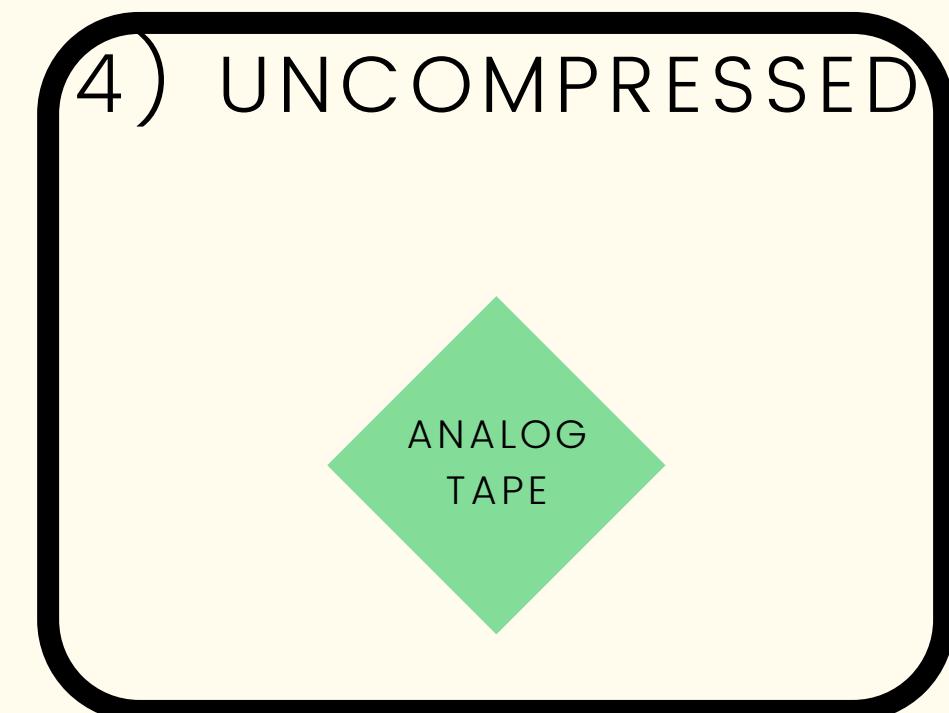
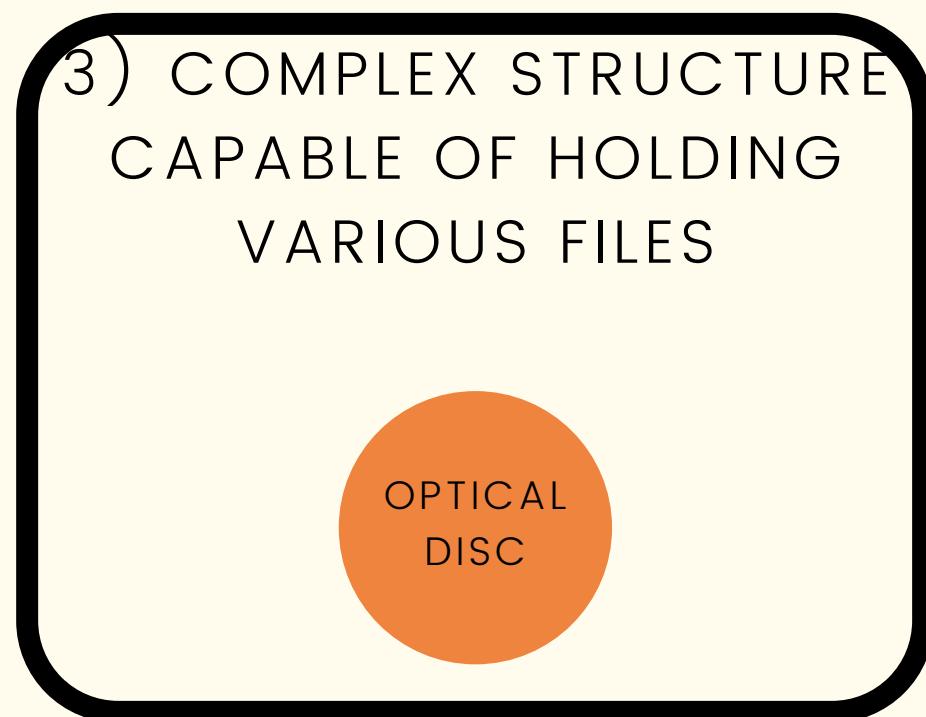
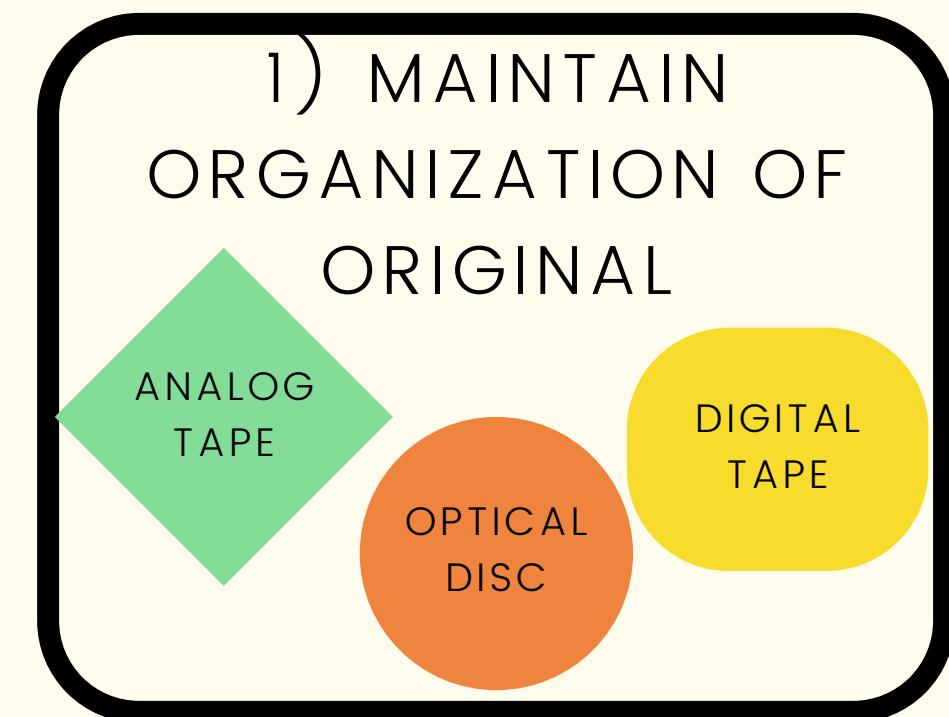
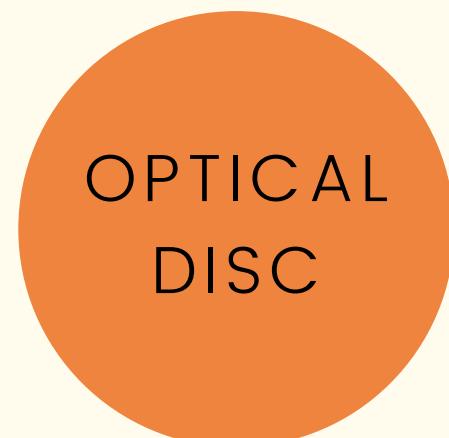
5) COMPATIBLE WITH  
COMMON PLAYBACK  
SYSTEMS

6) OPEN SOURCE

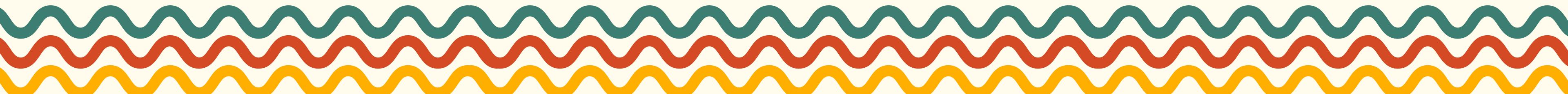
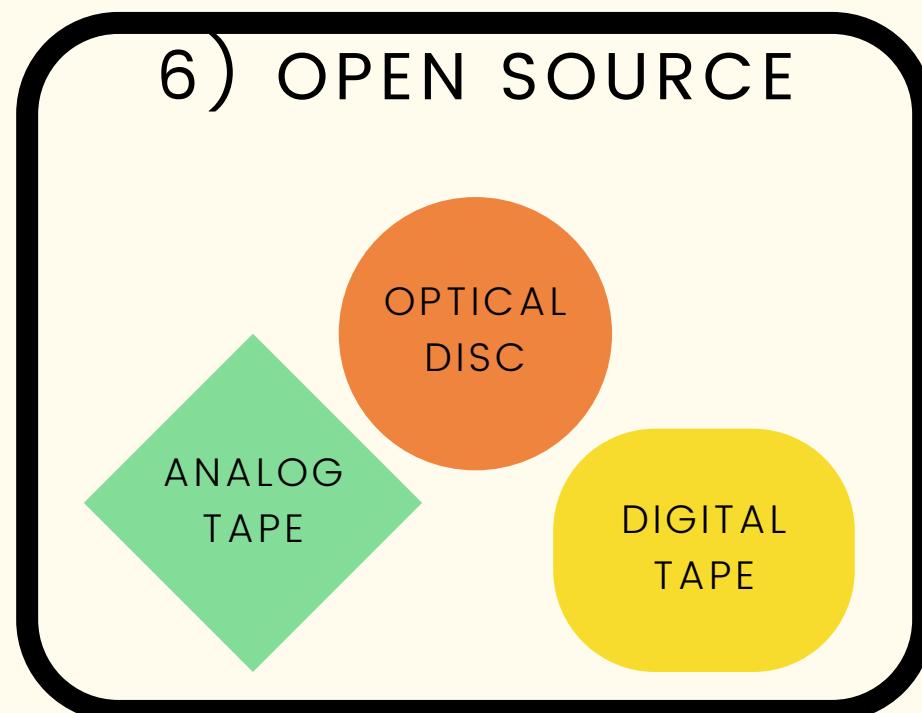
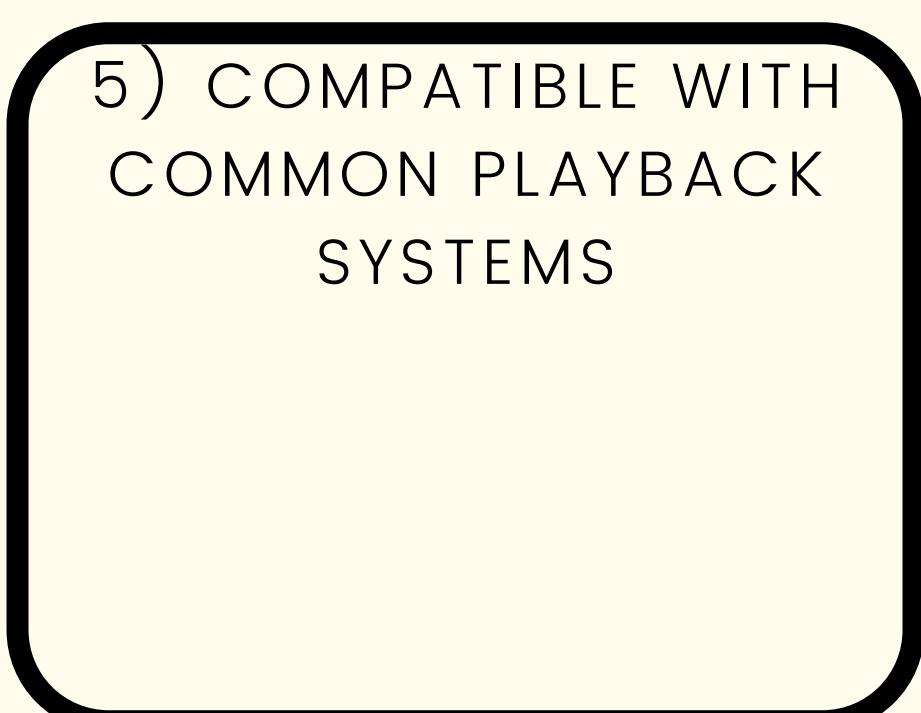
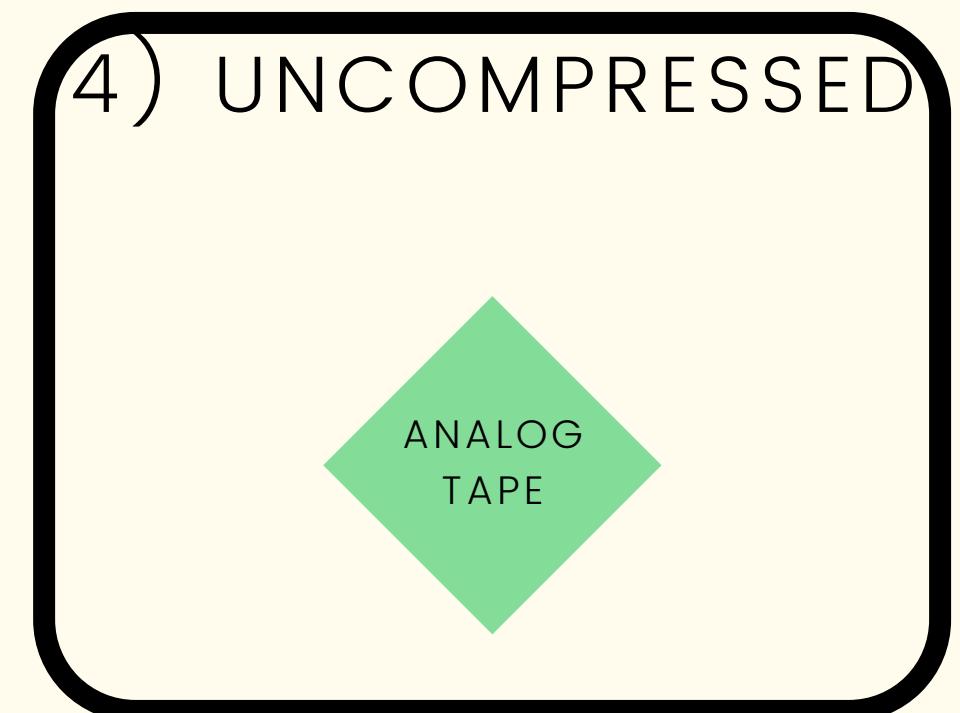
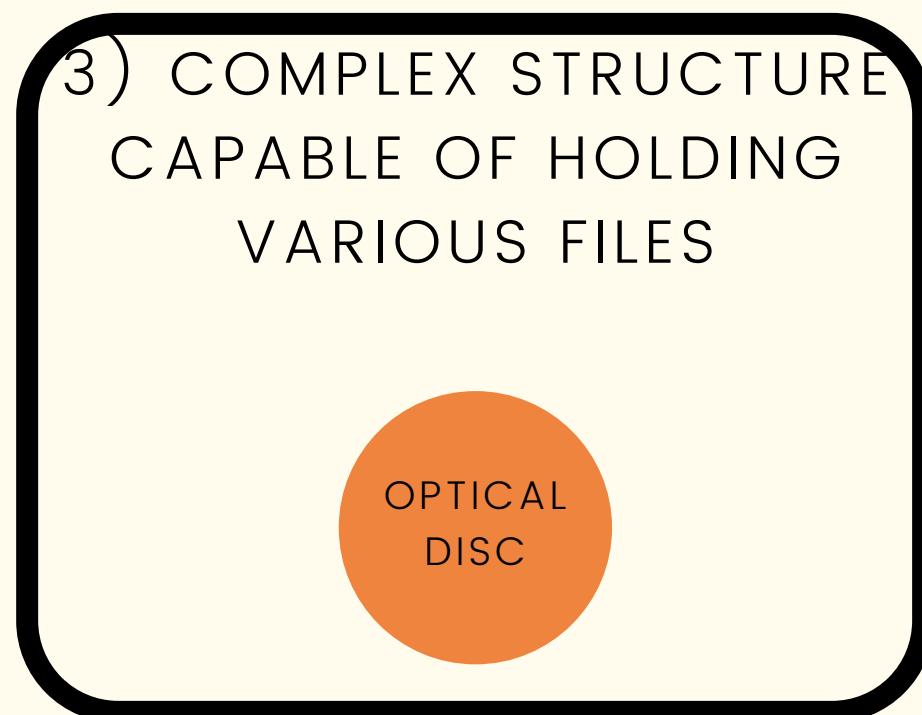
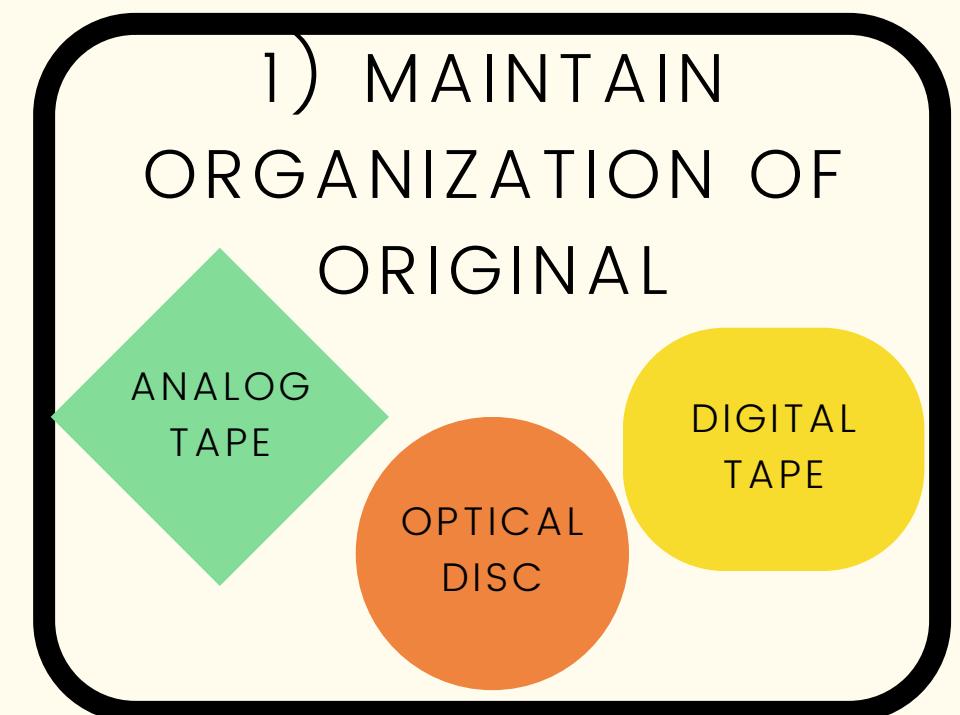
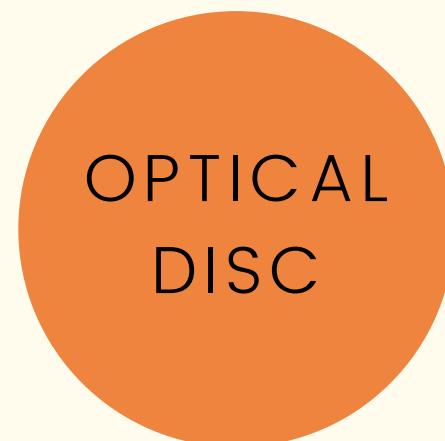
# EXERCISE 2: PRES FORMATS



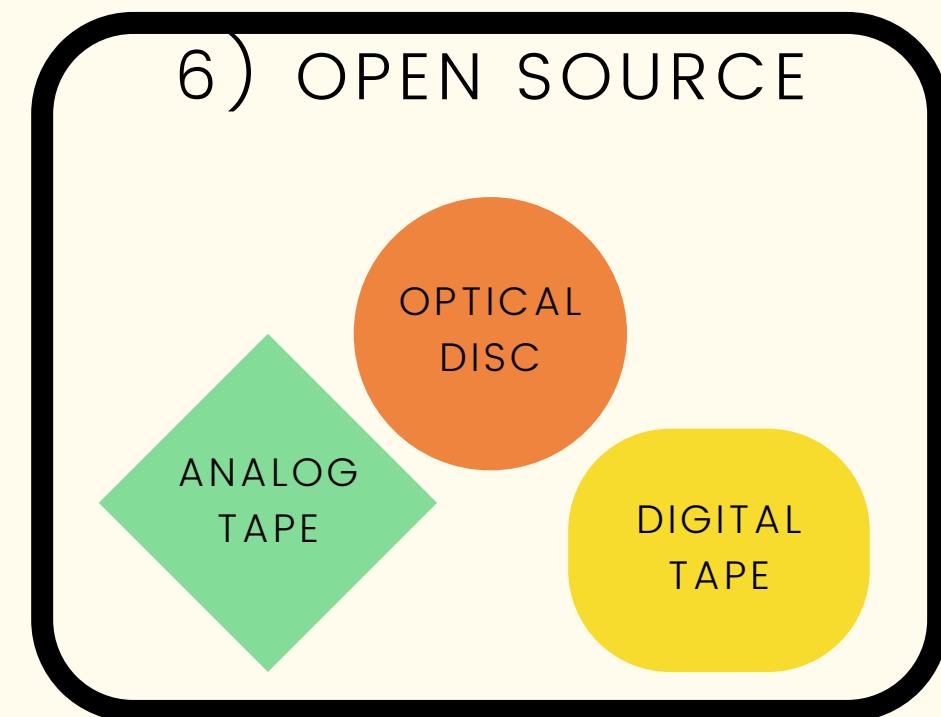
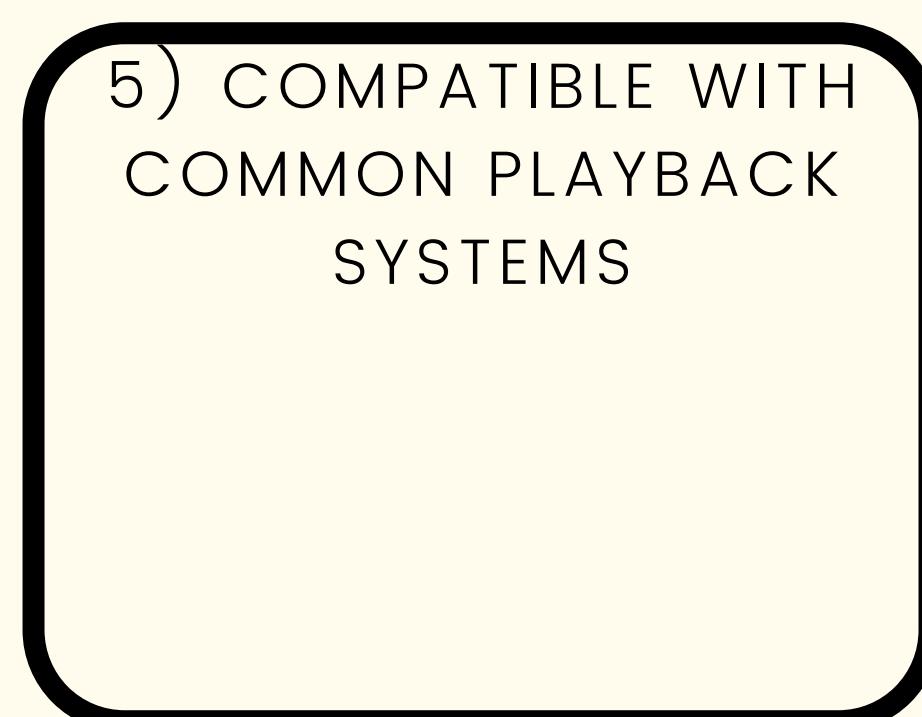
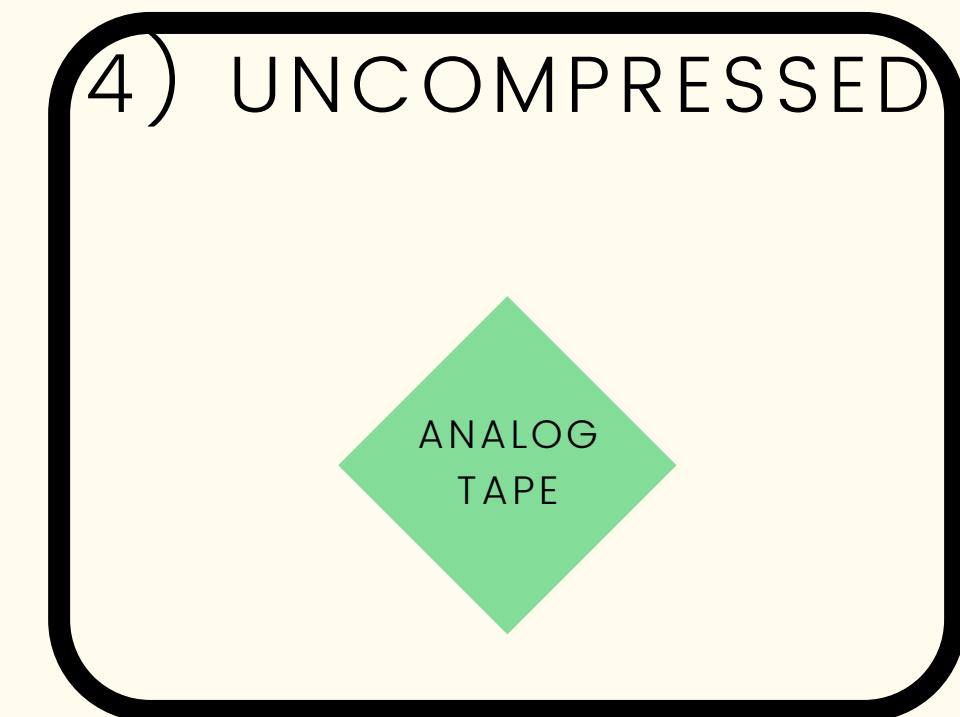
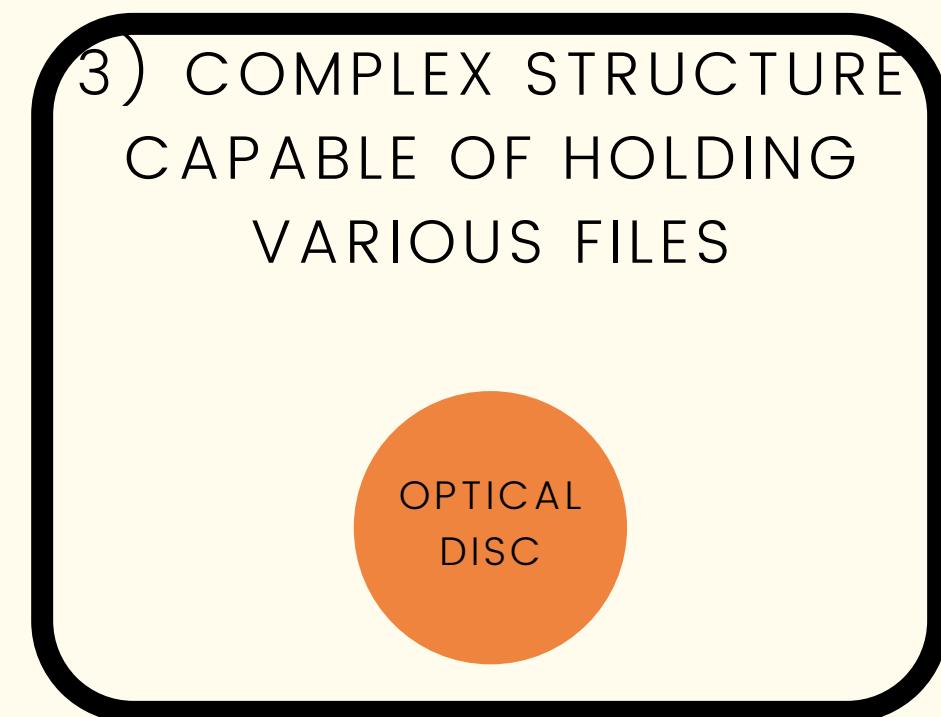
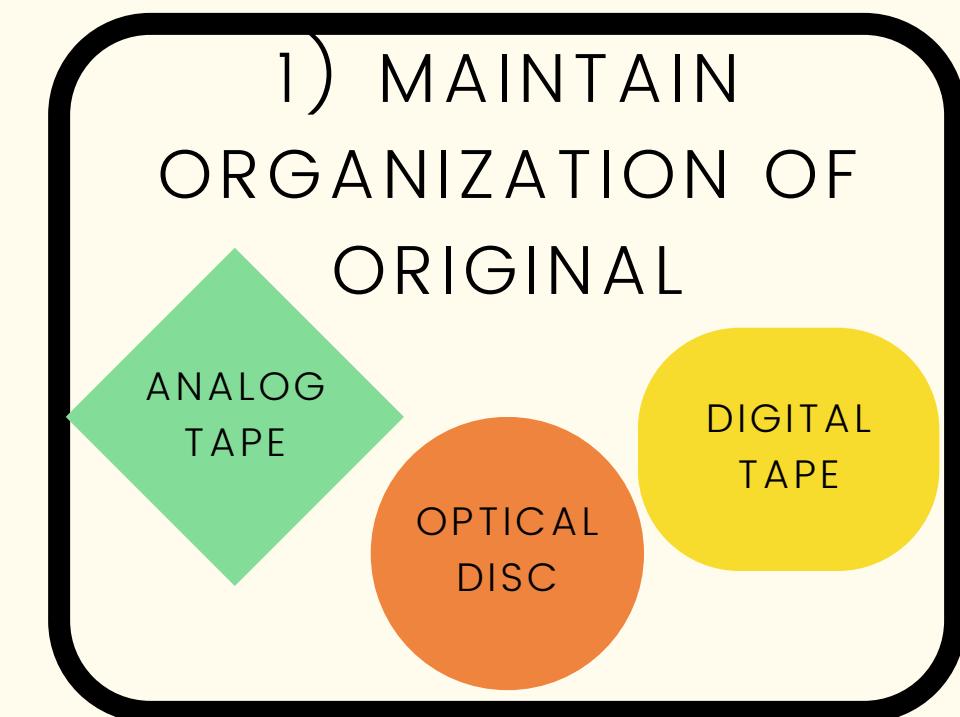
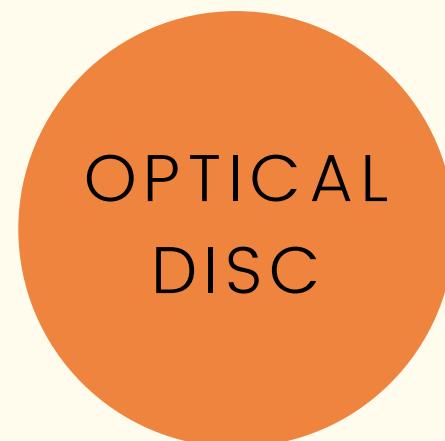
# EXERCISE 2: PRES FORMATS



# EXERCISE 2: PRES FORMATS



# EXERCISE 2: PRES FORMATS





# PRESERVATION SOFTWARE

# PRESERVATION SOFTWARE

## CREATING PRESERVATION FILES

Analog Tape

Digital Tape

Optical Disc

Access Files

vrecord



dvrescue



MakeMKV  
or...

ddrescue



Handbrake



# VRECORD

- Used for digitizing video files to various preservation formats
- Open Source, developed by archivists
- Currently requires command line use, and a slightly steep learning curve
- Requires expensive hardware

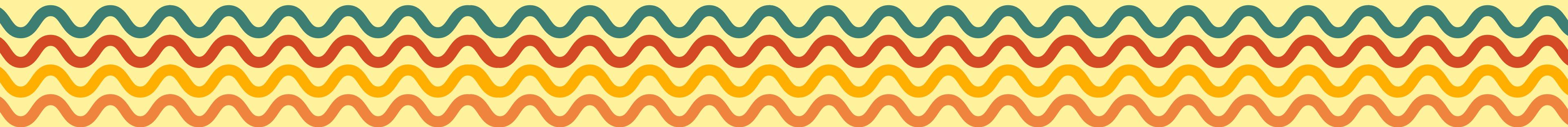




# DVRESQUE



- Used to migrate DV tapes to files
- Open Source, developed by archivists
- Relatively simple interface, improving every day
- Requires a DV decks and some cables





# MAKEMKV



- Used to create ISOs from DVDs and Blu-Rays
- Not free or open source (\$60)
- Can handle various types of discs, including oddballs



# DDRESCUE

- Used to create ISOs from DVDs and BRs
- Free, Open Source
- Can handle damaged and corrupted discs well
- CON: Command line only, harder to use

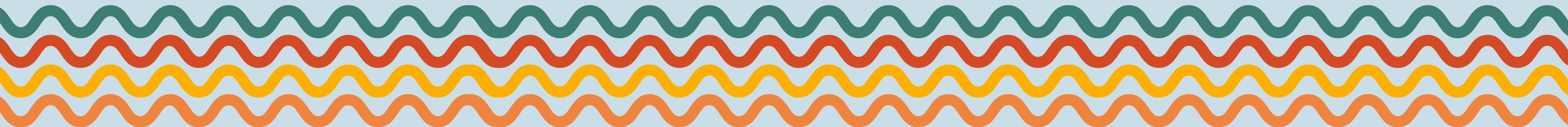




# HANDBRAKE



- Used to create access files from various preservation files
- free and open source
- Can handle various preservation file types, creates MP4s with many options



# PRESERVATION SOFTWARE

vrecord



dvrescue



MakeMKV

or...

ddrescue



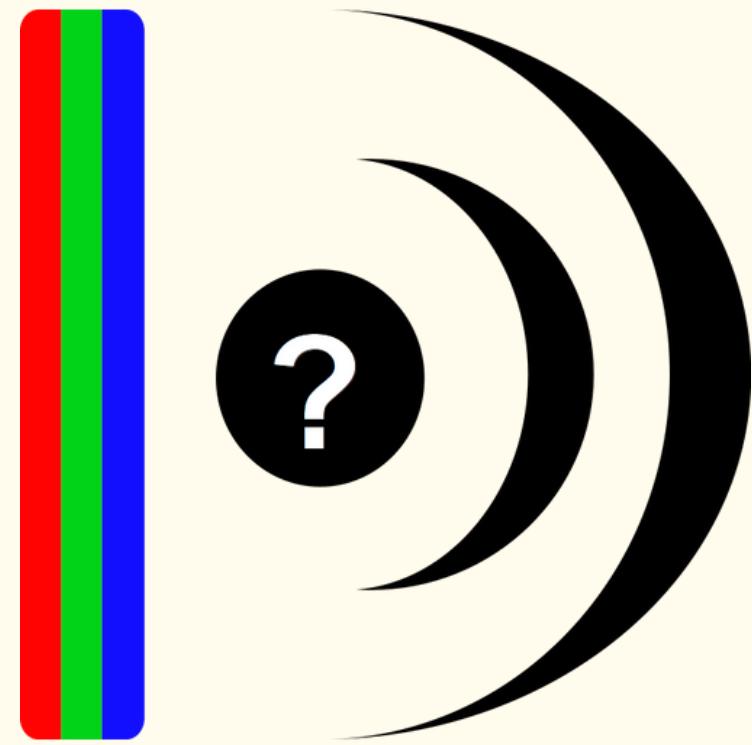
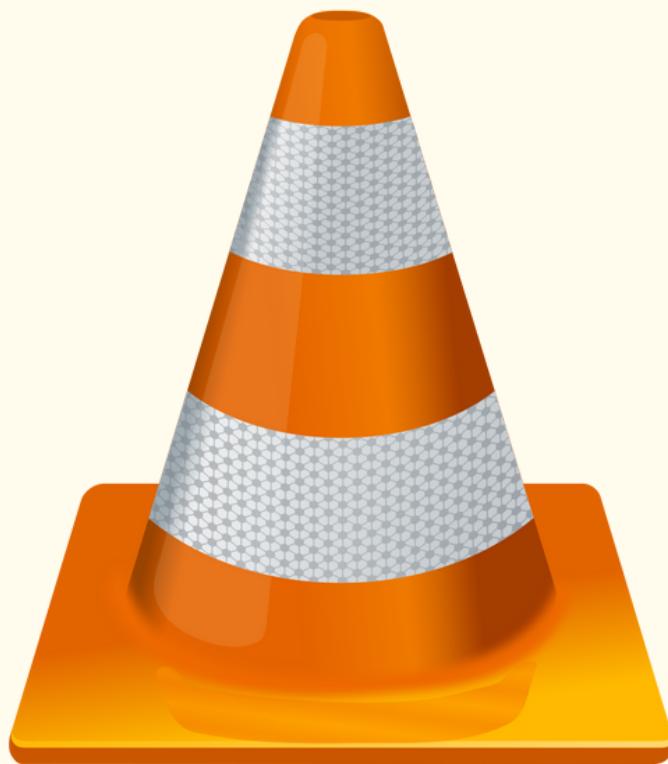
Handbrake

## DAY TWO WILL ALL ABOUT USING THESE!



# PRESERVATION SOFTWARE

## ANALYZING FILES



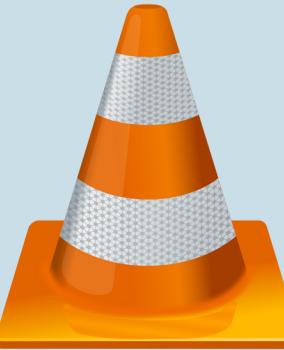
VLC

Mediainfo

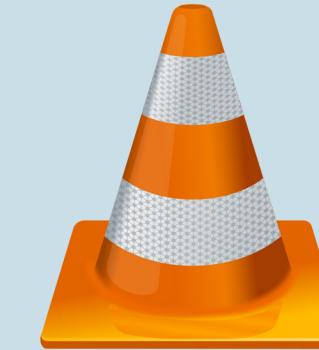
MediaConch

QCTools

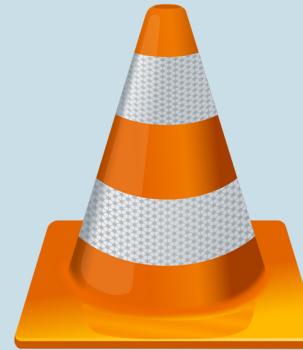
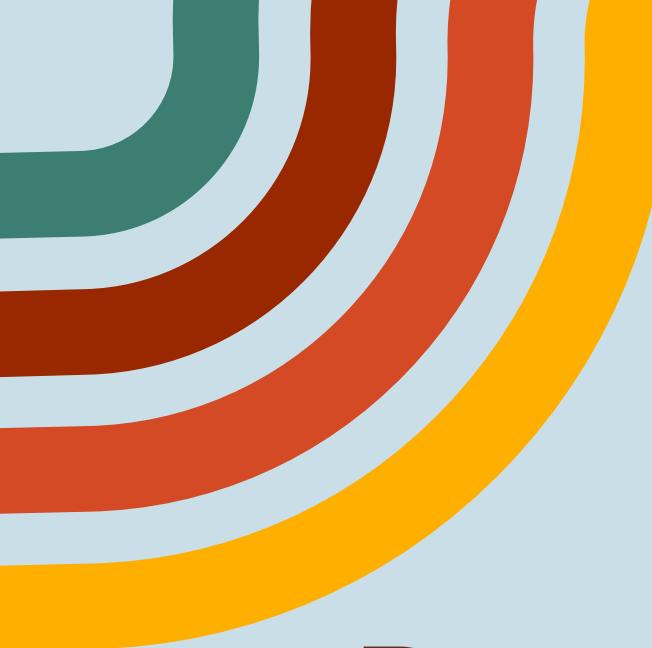




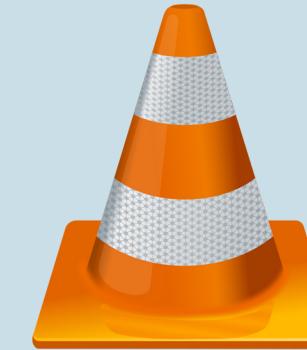
# VLC



VideoLAN Client (VLC) is a free and open source media player. It supports nearly any video format, and can play back complex streams



# VLC



## Pros

- Free! Open Source!
- Flexible, plays almost anything
- Lets you select various audio, video, and caption streams

## Cons

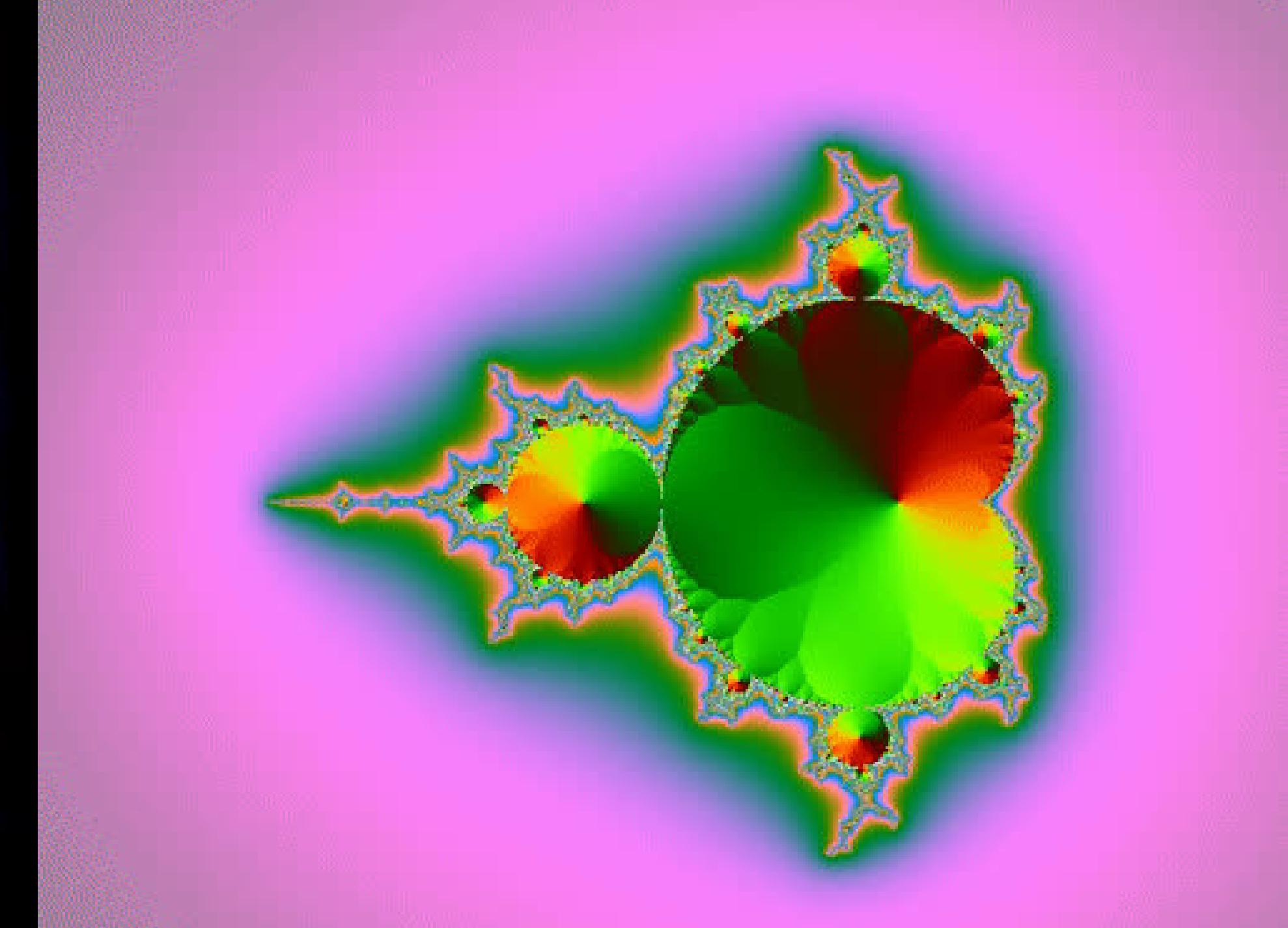
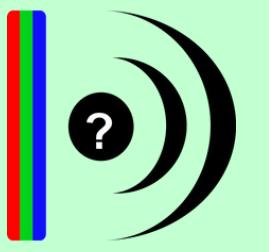
- Will play anything, even broken stuff
- Good for viewing, not good for testing to see if something is well-formed



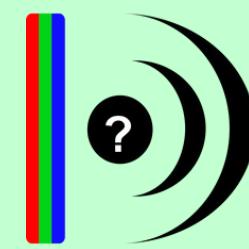
MedialInfo is a free, cross-platform and open-source program that displays technical information about media files



# CONSIDER THESE TWO VIDEO FILES

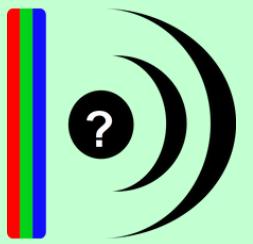


# ARE HOW THESE FILES DIFFERENT?



	SAMPLE VIDEO 1	SAMPLE VIDEO 2
Video ID	: 1	: 1
Format	: AVC	: AVC
Format/Info	: Advanced Video Codec	: Advanced Video Codec
Format profile	: High@L3	: High@L3
Format settings	: CABAC / 4 Ref Frames	: CABAC / 4 Ref Frames
Format settings, CABAC	: Yes	: Yes
Format settings, RefFrames	: 4 frames	: 4 frames
Codec ID	: avc1	: avc1
Codec ID/Info	: Advanced Video Coding	: Advanced Video Coding
Duration	: 10 s 0 ms	: 32 s 666 ms
Bit rate	: 1 000 kb/s	: 3 281 kb/s
Width	: 720 pixels	: 640 pixels
Height	: 576 pixels	: 480 pixels
Display aspect ratio	: 5:4	: 4:3
Frame rate mode	: Constant	: Constant
Frame rate	: 25.000 FPS	: 29.970 (30000/1001) FPS
Color space	: YUV	: YUV
Chroma subsampling	: 4:2:0	: 4:2:0
Bit depth	: 8 bits	: 8 bits
Scan type	: Progressive	: Progressive

# USE MEDIAINFO TO CONFIRM FILE SPECS



Frame rate mode	:	Constant
Frame rate	:	29.970 (30000/1001) FPS
Standard	:	NTSC
Color space	:	YUV
Chroma subsampling	:	4:2:2
Bit depth	:	10 bits
Scan type	:	Interlaced
Scan type, store method	:	Interleaved fields
Scan order	:	Bottom Field First
Compression mode	:	Lossless
Bits/(Pixel*Frame)	:	21.333
Stream size	:	802 MiB (99%)
Color primaries	:	BT.601 NTSC
Transfer characteristics	:	BT.709
Matrix coefficients	:	BT.601



# MEDIACONCH



- Media Conformance Checker
- Checks groups of files against policies
- Policies can be uploaded to or downloaded

from the web

BAVC Standard MP4

Maintainer: Morgan Morel  
License: Other

Add to my policies      Export





# MEDIACONCH



## Results

[Close all results](#)

[Apply a policy to all results](#)

Choose a new policy to apply ▾

Show 10 ▾ entries

Search:

Files	Implem	Policy	MediaInfo	MediaTrace	Status
SampleAccess01.mp4	✓ Valid	✓ BAVC Standard MP4	ⓘ ⓘ	ⓘ ⓘ	✓
SampleAccess02.mp4	✓ Valid	✗ BAVC Standard MP4	ⓘ ⓘ	ⓘ ⓘ	✓

Showing 1 to 2 of 2 entries

Previous 1 Next

- General/IsStreamable is Yes ✗ fail (Actual: No)
- Video/Format is AVC ✓ pass
- Video/Format\_Profile is High ✓ pass
- Video/Format\_Level is 3 ✓ pass
- Video/Format\_Settings\_CABAC is Yes ✓ pass
- Video/Format\_Settings\_RefFrames is 4 ✓ pass
- Video/CodecID is avc1 ✓ pass
- Video/Width is 640 ✗ fail (Actual: 720)
- Video/Height is 480 ✗ fail (Actual: 576)
- Video/Sampled\_Width is 640 ✗ fail (Actual: 720)
- Video/Sampled\_Height is 480 ✗ fail (Actual: 576)
- Video/DisplayAspectRatio is 1.333 ✗ fail (Actual: 1.250)
- Video/Rotation is 0.000 ✓ pass

# EXERCISE 3: EXAMINE FILES

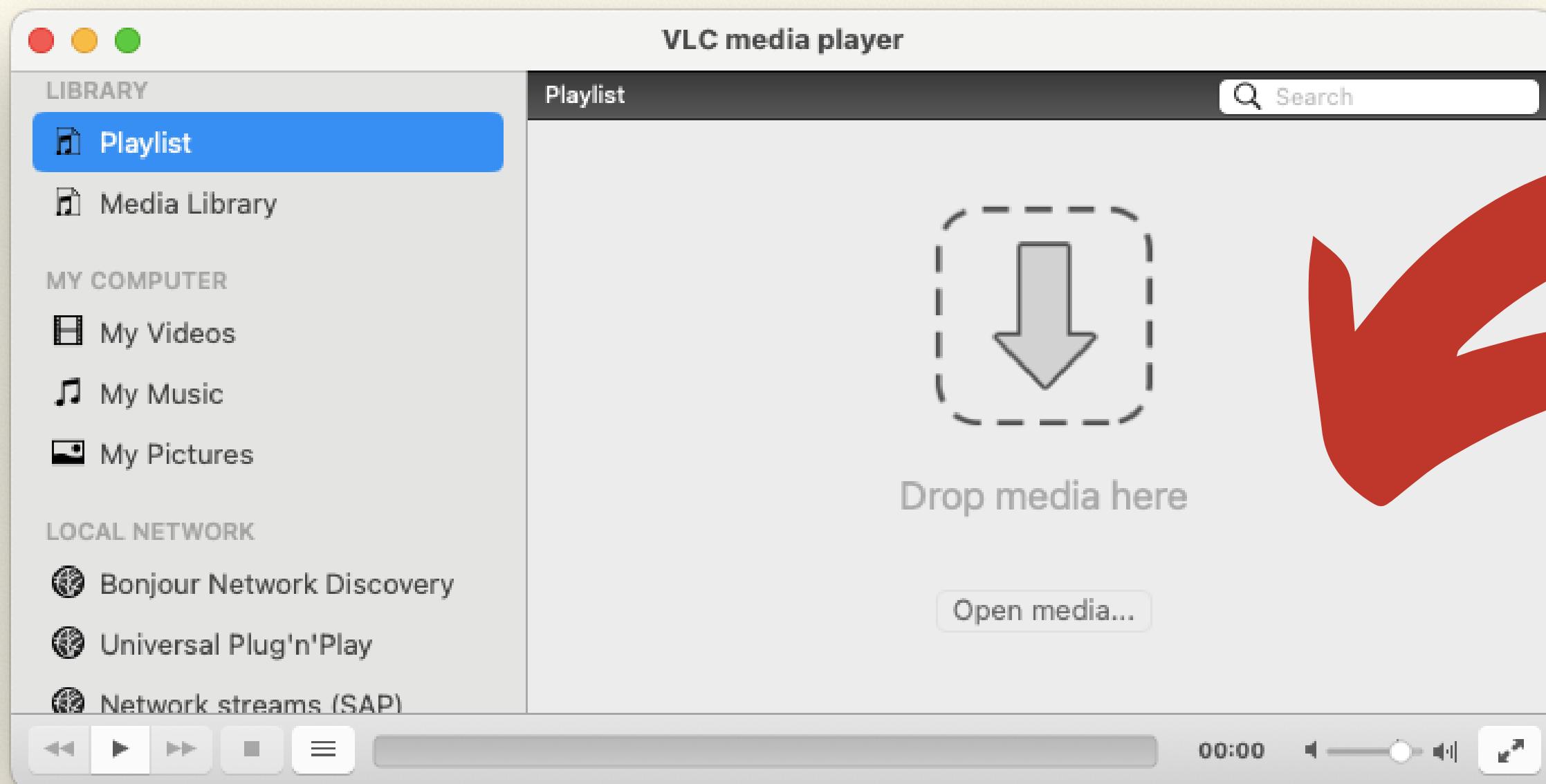
Examine the files in the Mystery Media folder you downloaded

- 1) View each file using VLC
- 2) Examine each file in MedialInfo
- 3) Run each file in the "Example MKV FFV1 digitization policy"  
MediaConch Policy



# EXERCISE 3: EXAMINE FILES

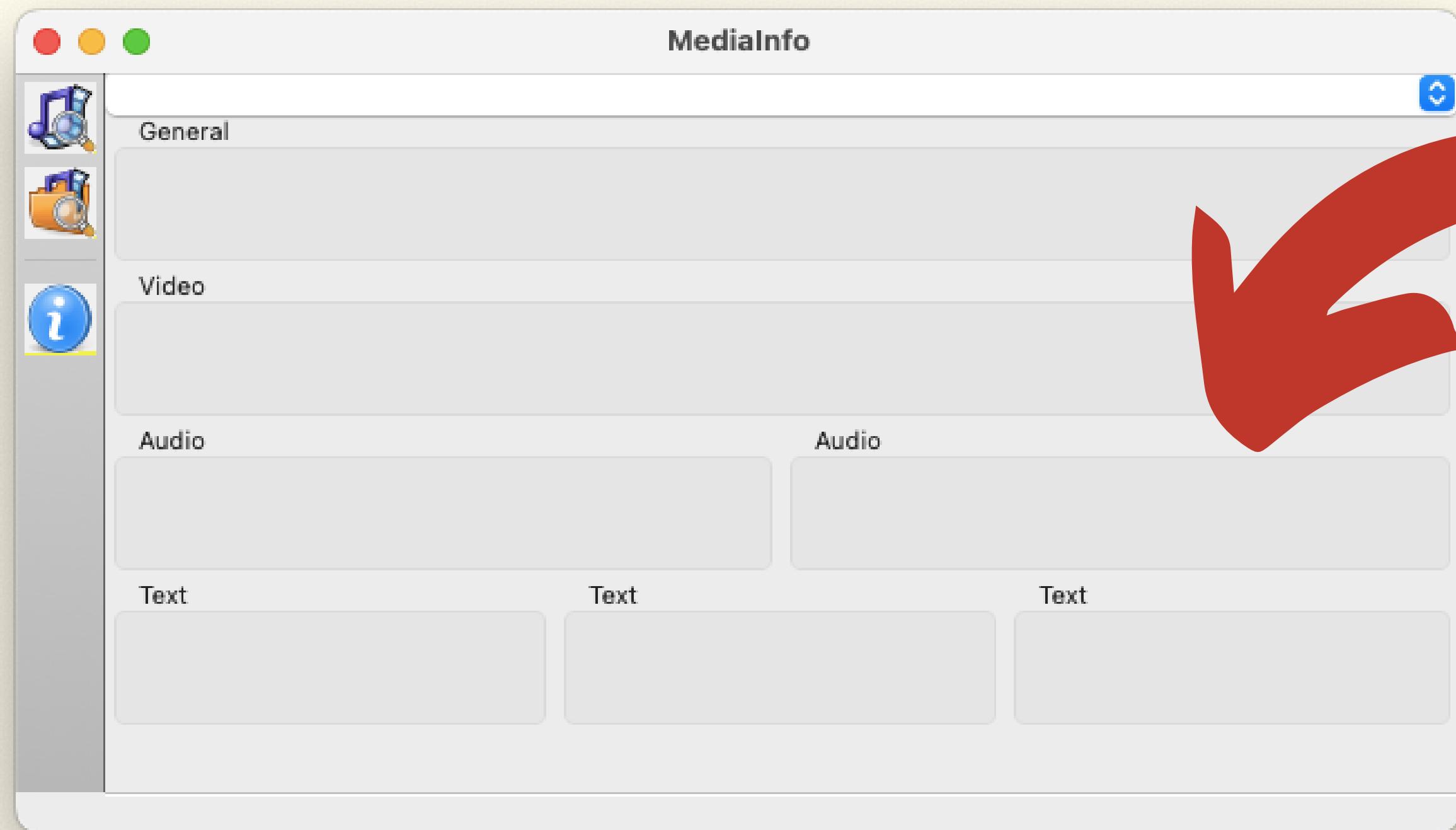
1) View each file using VLC



Drop the file  
in to view

# EXERCISE 3: EXAMINE FILES

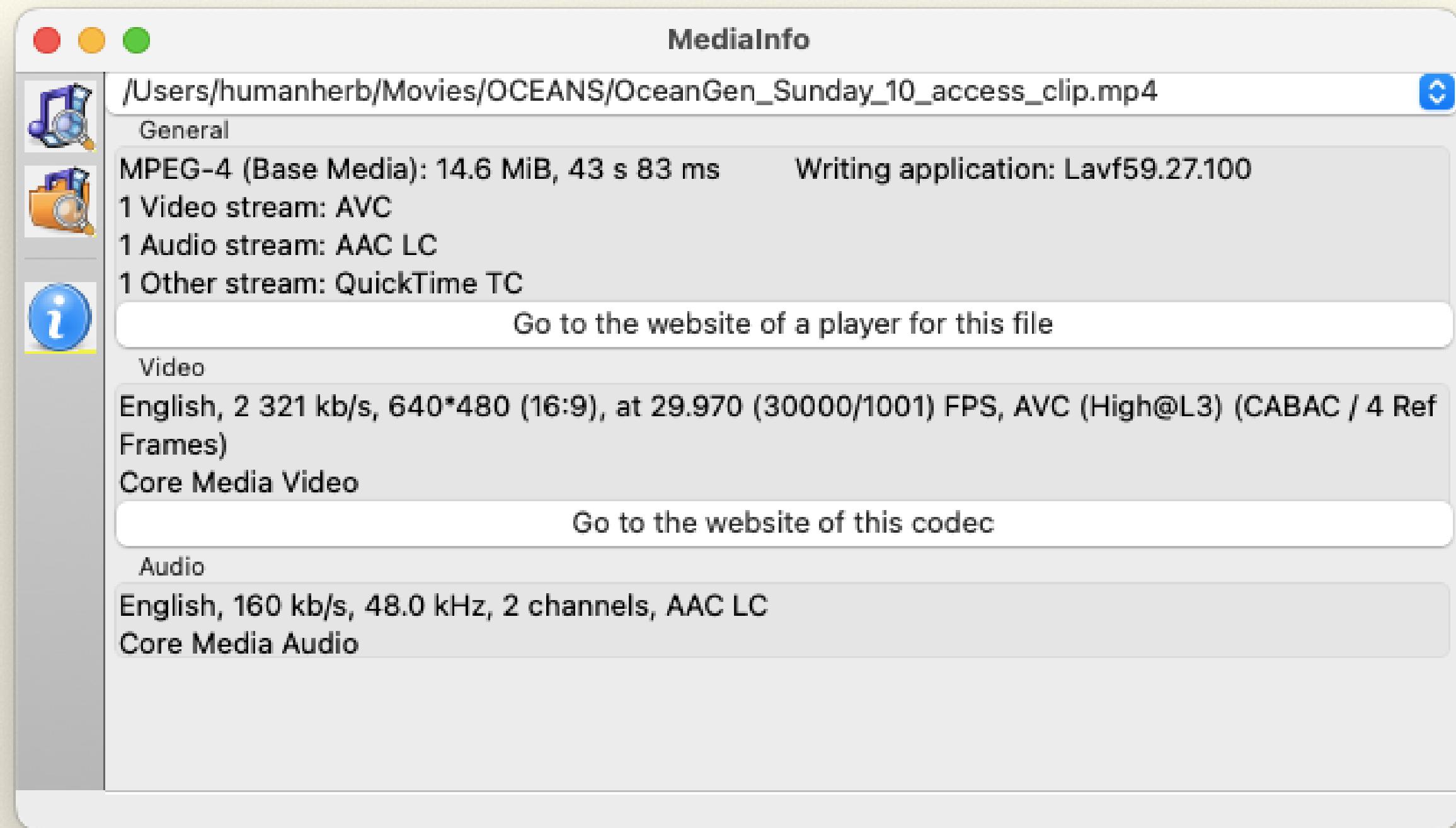
2) Examine each file in MediaInfo



Drop the file  
in to examine

# EXERCISE 3: EXAMINE FILES

2) Examine each file in MediaInfo



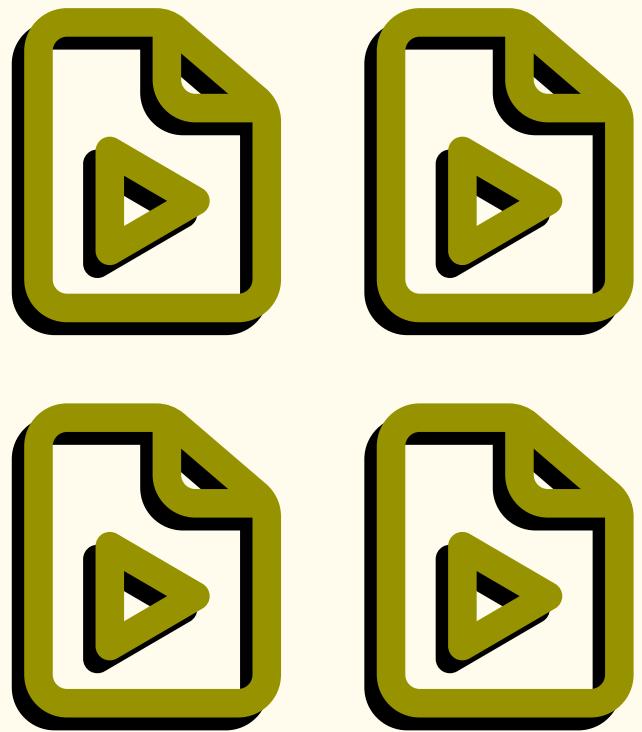
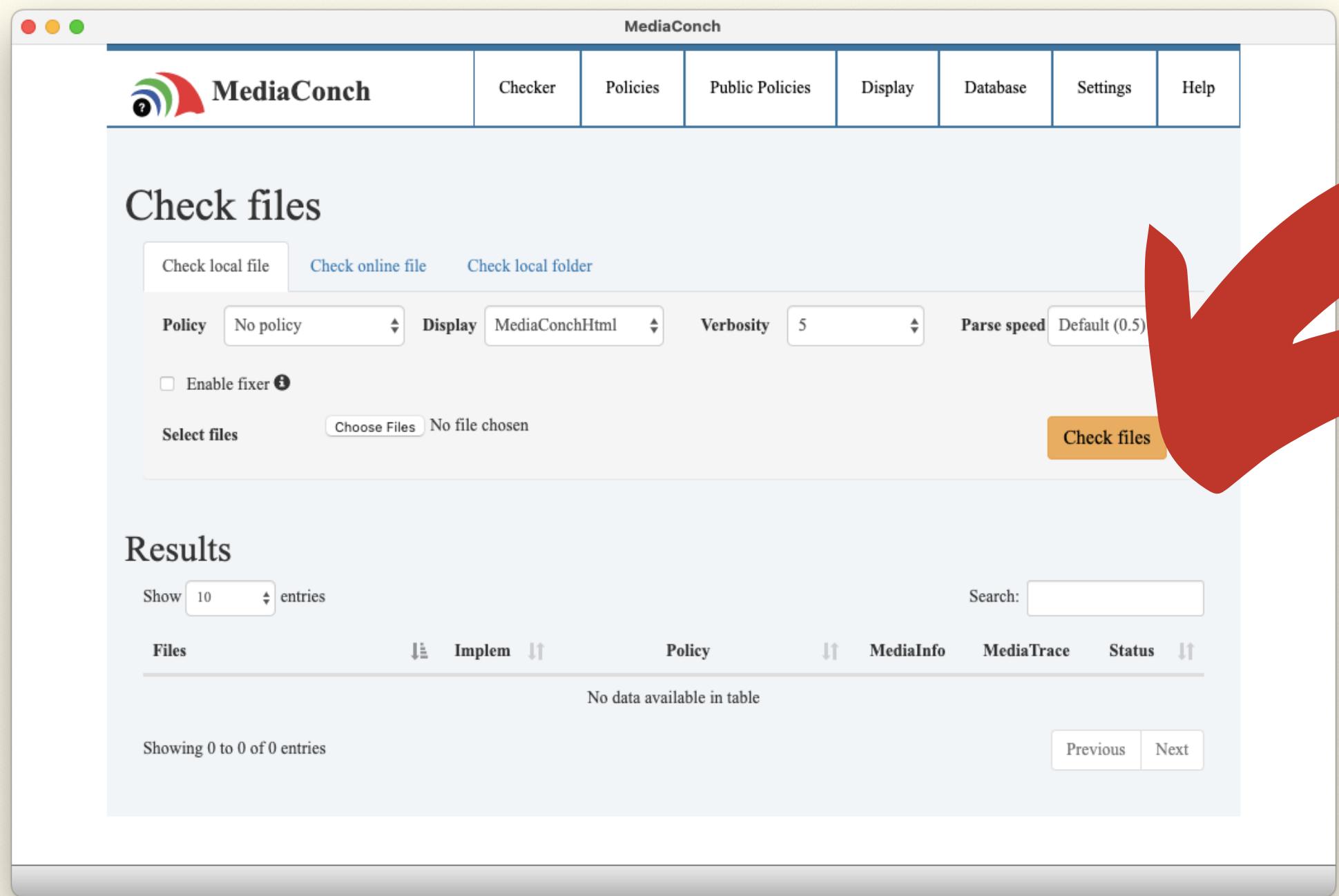
GENERAL FILE INFO

VIDEO STREAM INFO

AUDIO STREAM INFO

# EXERCISE 3: EXAMINE FILES

3) Examine each file in MediaConch



Drop all four files in  
to examine all at  
once

# EXERCISE 3: EXAMINE FILES

3) Examine each file in MediaConch

The screenshot shows the 'Results' page of the MediaConch application. On the left, there is a search bar with the placeholder 'Search' and a dropdown menu for 'Apply a policy to all results'. Below the search bar, it says 'Show 10 entries'. A section titled 'Files' lists an item: 'OceanGen\_Sunday\_10\_access'. To the right of the files list is a dropdown menu titled 'Choose a new policy to apply' which contains several options:

- Choose a new policy to apply
- System policies
  - Is this NTSC or PAL SD?
  - Example MKV FFV1 digitization policy** (This option is highlighted with a blue background)
  - Matroska is well described?
  - CAVPP Preservation Master
  - MemoriaV Video files Recommendations
  - TN2162 compliant?

Select "Example MKV FFV1 Digitization Policy" to see if the files meet the Preservation standard

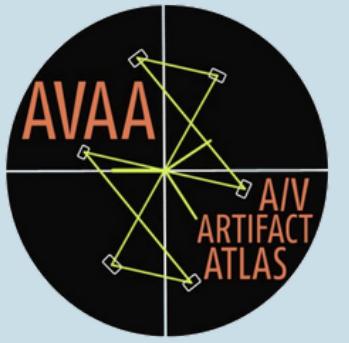


# QCTOOLS



QCtools attempts to automate and analyze  
some of the data you would perform with a  
visual spot-check, as well as other  
information that you wouldn't see





# AV ARTIFACT ATLAS



## VIDEO HEAD CLOG

Video

Analog

Media Failure

Cleaning

Head Clog

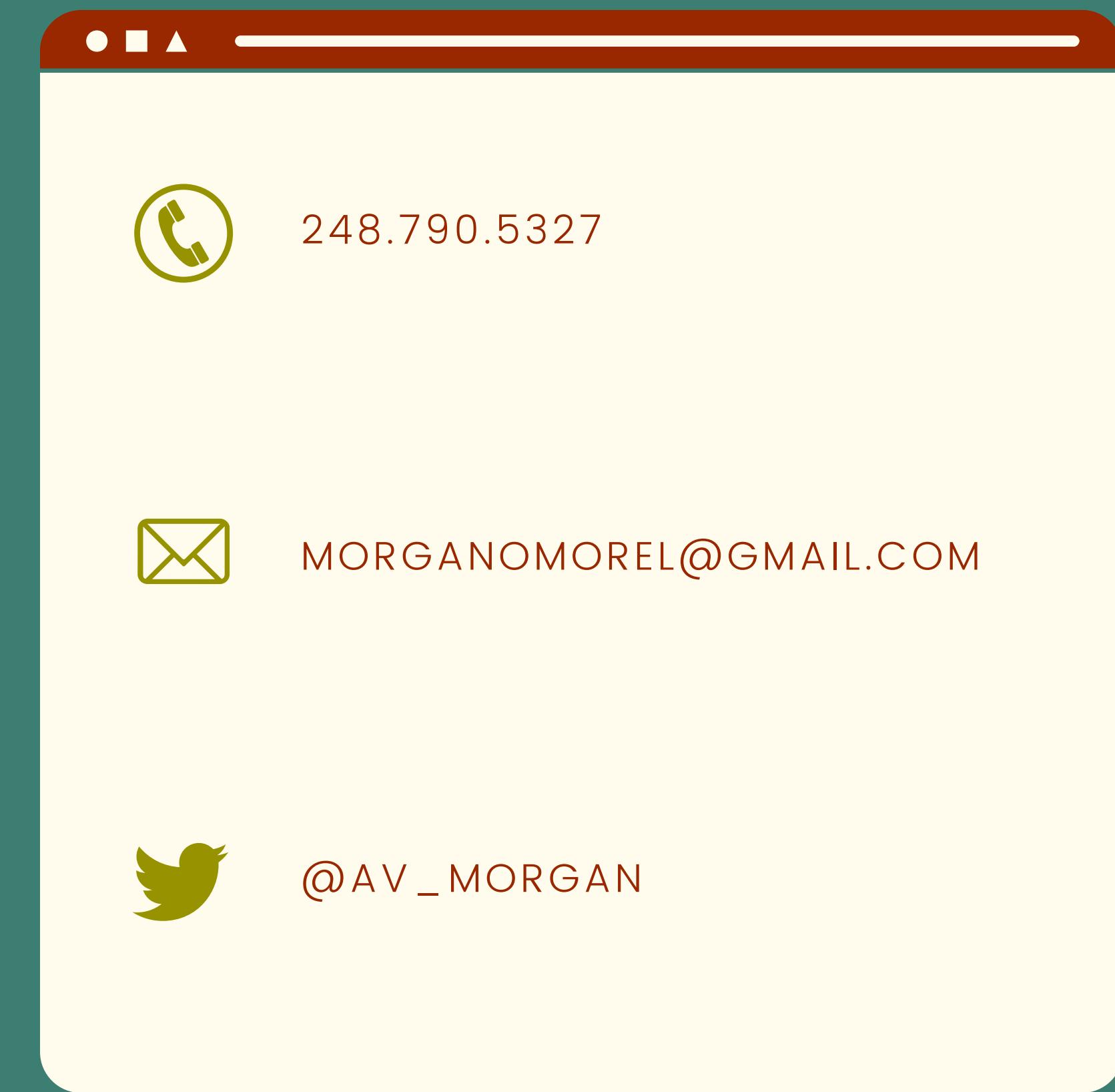
Common Artifacts

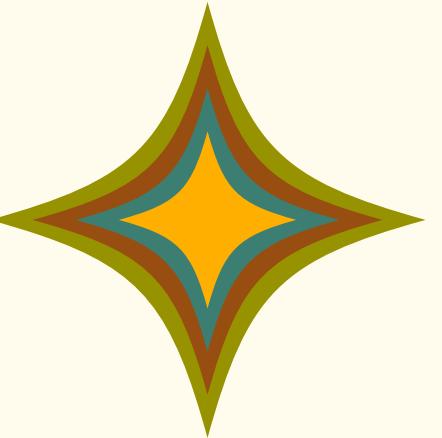
When loose oxide builds up in the tape path, it can travel with the tape to the drum assembly and prevent the video head from making contact with the tape. The result is a heavily obscured image or a complete loss of image. A video head clog requires thorough cleaning of the video heads if the clog obstructs RF completely during playback. In most cases, a severe head clog cannot be removed by playing a cleaning tape through the VTR. The head and drum assembly must be manually cleaned using a cleaning solution.

[HTTP://WWW.AVARTIFACTATLAS.COM](http://www.avartifactatlas.com)

QIA

# CONTACT ME





THANK YOU!



# CONSIDER THESE TWO VIDEO FILES

