



**ExplorNet's**

# *Digital Media*



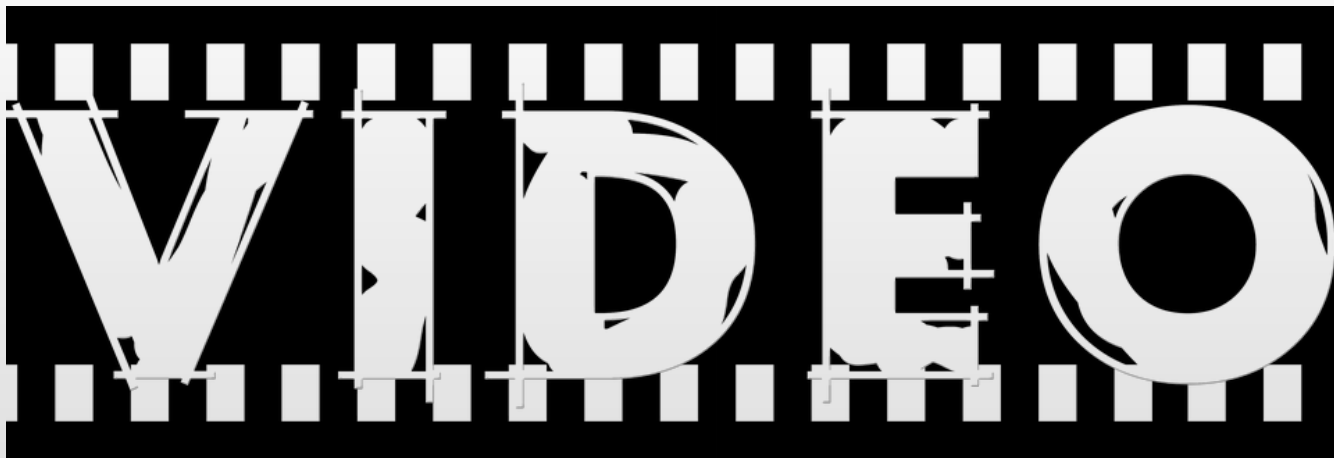
Objective 105.01

Explain concepts used to create digital video.



# **DIGITAL VIDEO**

- Moving images that have been captured, created, or edited electronically.
  - Digital video signals transmit information in the form of individual bits of data.
  - Analog (non-digital) video signals transmit information continuously in the form of a wave.





## ***QUESTIONS TO CONSIDER***

- Do you think most modern day movies are digital or analog?
- When you go to the theater are you watching a digital video or an analog video? Do you think you could tell the difference between the two?



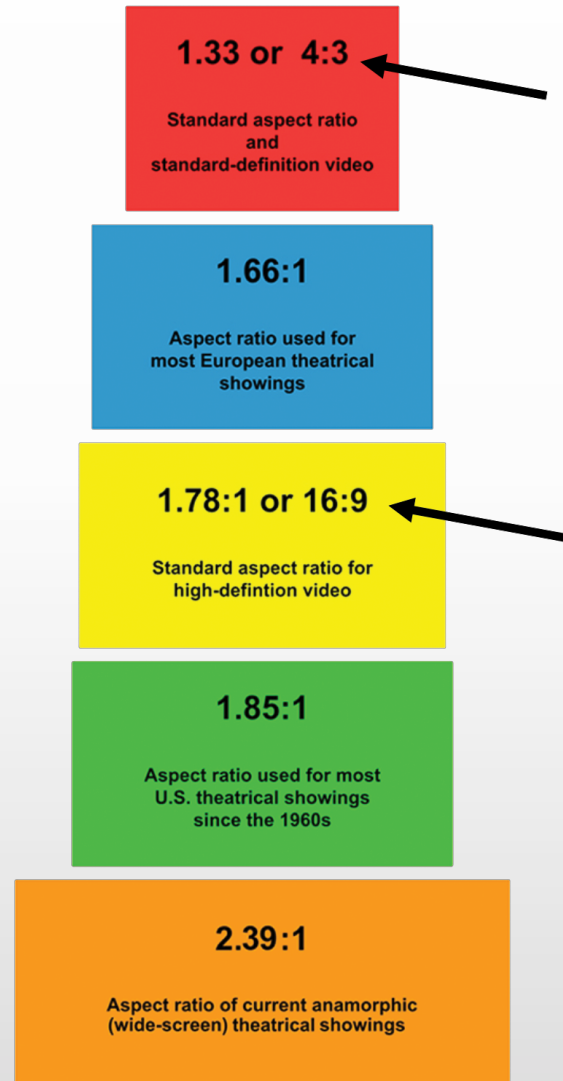
# CHARACTERISTICS OF VIDEO

## ○ Aspect Ratio

- Ratio of a video screen's width and height dimension; common ratios are standard (4:3) and widescreen (16:9).

## ○ Frame Rate

- Speed at which video frames appear on a screen; measured by frames per second (FPS).





# ***CHARACTERISTICS OF VIDEO***

- Scanning Method
  - Method by which video picture appears on a screen (720p, 1080i, etc.).
- Interlaced (I)
  - Displays half of the video picture at a time (odd lines, then even); alternates too quickly for human eye to notice.
- Progressive (p)
  - Displays the entire video picture at all times; greatly reduces any flickering of picture; better quality image than interlaced.



## **QUESTIONS TO CONSIDER**

- Why might someone use interlaced scanning instead of progressive scanning video? Can you think of any possible advantage of only seeing, or having, half of the image appear at once?

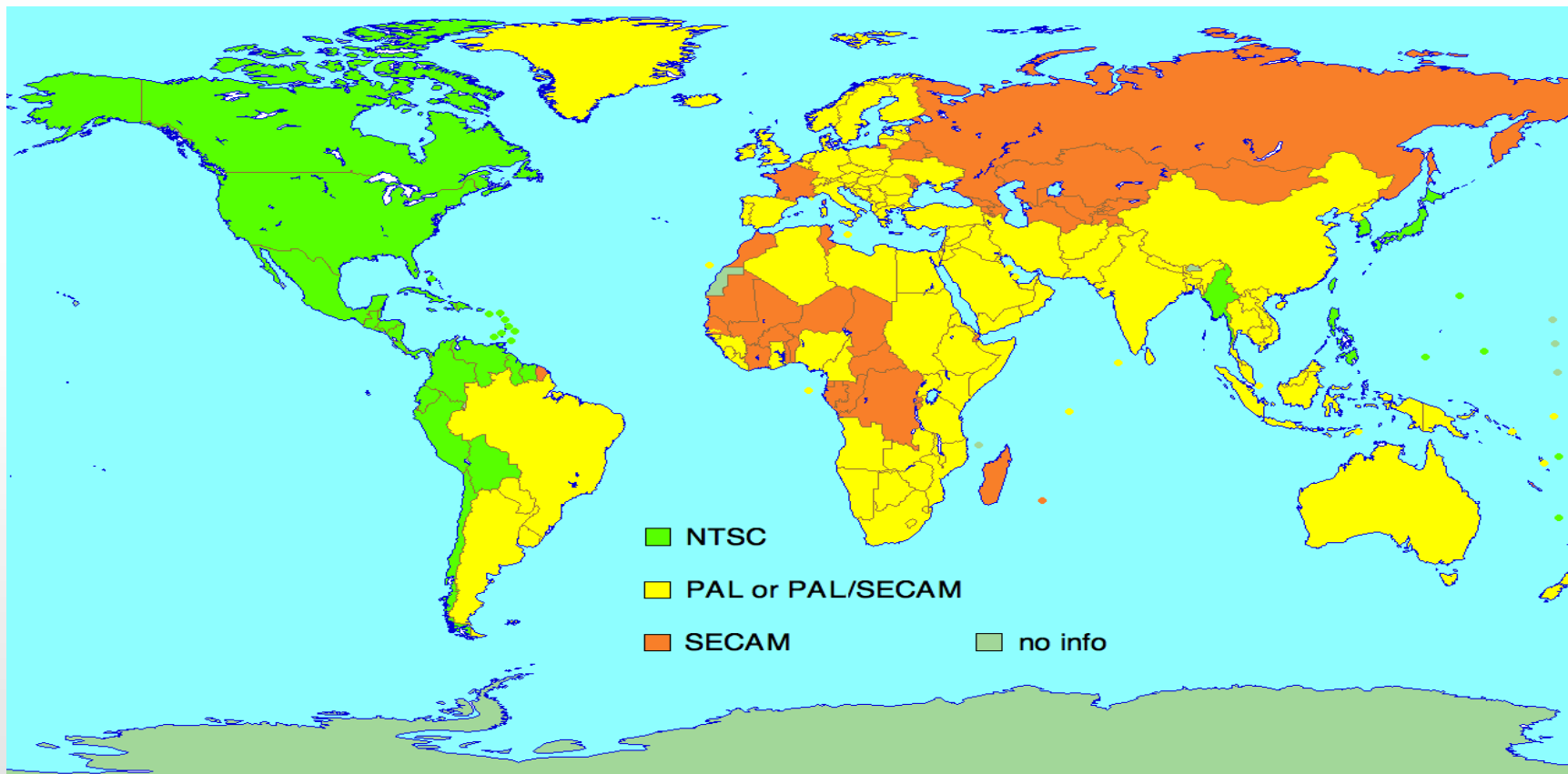


# **BROADCASTING SYSTEMS**

- National Television System Committee (NTSC)
  - Standard used in North America and most of South America. In NTSC, 30 frames are transmitted each second.
- Phase Alternating Line (PAL)
  - Standard mostly used overseas. In PAL, 25 frames are transmitted each second.
- Sequential Color with Memory (SECAM)
  - French and Asian broadcast television standard.



# **BROADCASTING SYSTEMS**







# **DM** **STREAMING VIDEO**

- Transmitting video files that can begin playing over the Internet as the remaining data is still being downloaded.
- Creates little to no wait time to begin viewing the video file.
- Example websites that use streaming video technology include: YouTube, Netflix, Vimeo, UStream, etc.



## ***QUESTIONS TO CONSIDER***

- How has streaming video changed the way we watch videos?
- What do you think are some of the most important aspects of creating videos for streaming? What possible problems exist for streaming videos?



# **VIDEO FILE FORMATS**

## **.MOV**

- Uses the Quicktime player for video playback.
- Standard video format for Apple computers.

## **.AVI**

- Standard video format for Microsoft PCs.



# DM

## **VIDEO FILE FORMATS**

### **.WMV**

- Uses the Windows Media Player for video playback.
- Microsoft file format used for streaming on the Internet.

### **.FLV**

- Uses the Adobe Flash Player for video playback.
- Commonly used for embedding videos on the Internet.



# DM **VIDEO FILE FORMATS**

## **.MPEG-2**

- Format used for DVDs.

## **.MPEG-4**

- Format used for Blu-Ray Discs (better quality than MPEG-2).
- Standard for streaming videos over the Internet.