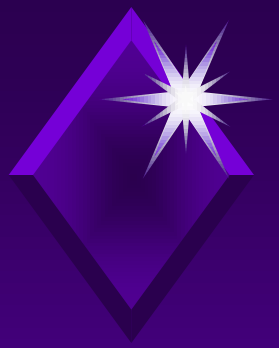


Temporal Media Types

- Audio
- Analog Video
- Digital Video
- Music
- Animation
- Speech

Analog Video -1

- Analog video is *not* stored and manipulated within the computer.
- Knowledge of analog video is important since digital video often enters and leaves the computer as analog video.

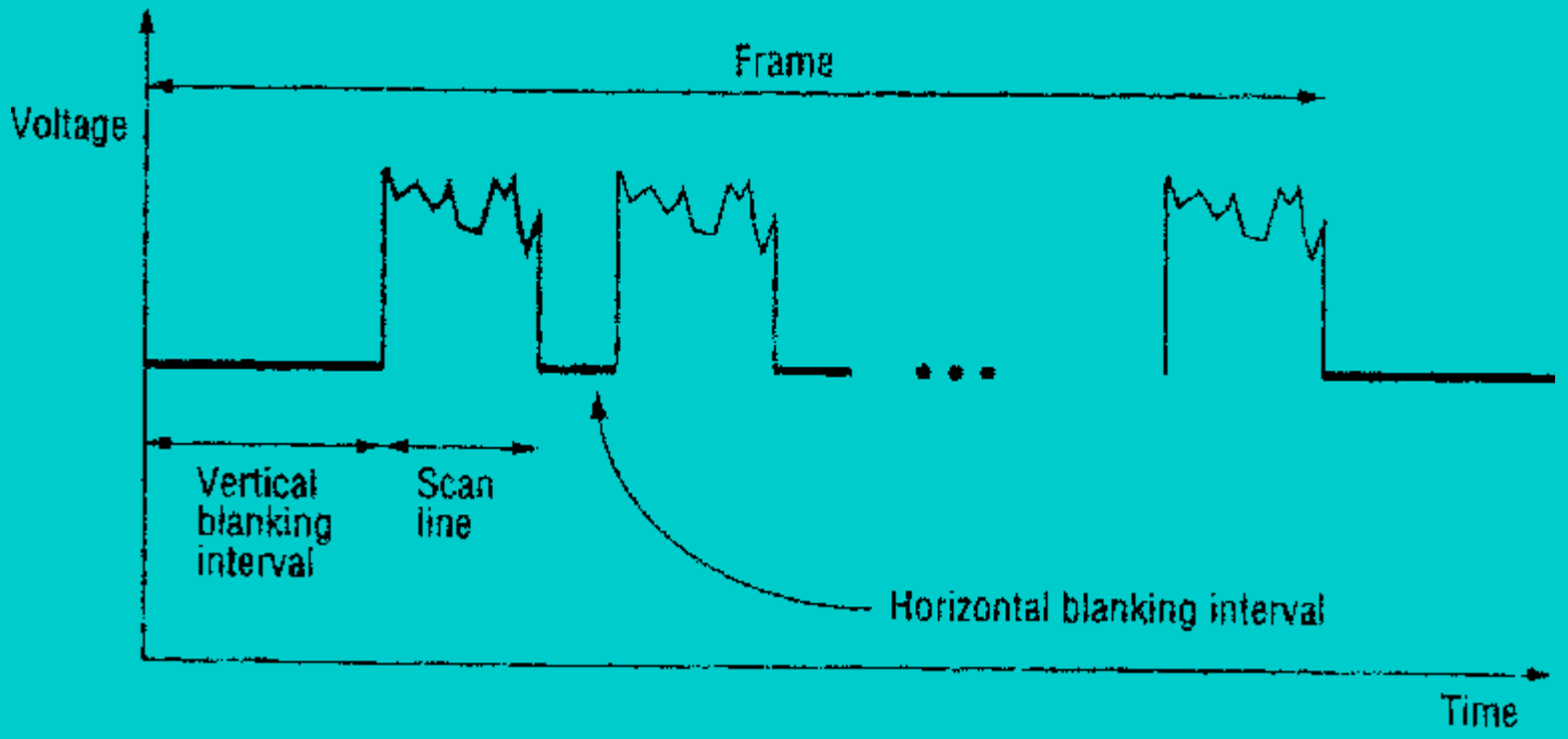
Analog Video - 2

Media type Analog video

Representation

- Frame rate
- Number of scan lines
- Aspect ratio
- Interlacing
- Quality
- Component versus composite

Analog Video - 3



Analog Signal Formats

Signal format	Components	Frame Rate (Hz)	Scan lines	Aspect Ratio	Interlacing
NTSC	1	29.97	525	4:3	2:1
YUV 525/60	3	29.97	525	4:3	2:1
PAL/SECAM	1	25	625	4:3	2:1
YUV 625/50	3	25	625	4:3	2:1
RGB	3	~25-75	~200-1000	varies	Usually 1:1
HDTV ??	3	25/30	1125/1250	16:9	2:1

Analog Video - 3

Operations

- Storage
- Retrieval
- Synchronization
- Editing
- Mixing
- Conversion

Mixing - Transitions/Effects 1

- Cut -

  mixer switches abruptly from *A* to *B*

- Fade -

  transition from a single input to a constant background (black)

- Dissolve (cross-fade) -

  The contribution of *A* is lowered while that of *B* is increased

Mixing - Transitions/Effects 2

- Wipe -

  A is pulled to reveal *B*

- Tumble -

  B tumbles in to cover *A*

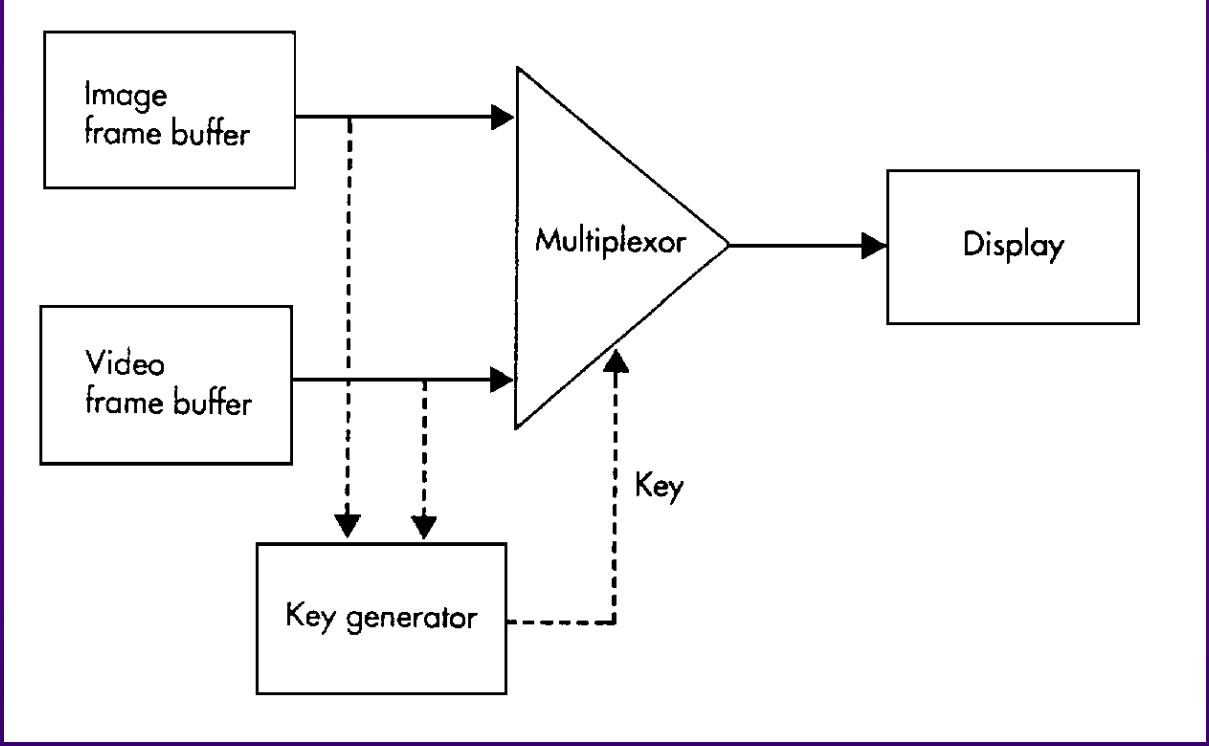
- Wrapping -

  One input is wrapped around a simple 3D object

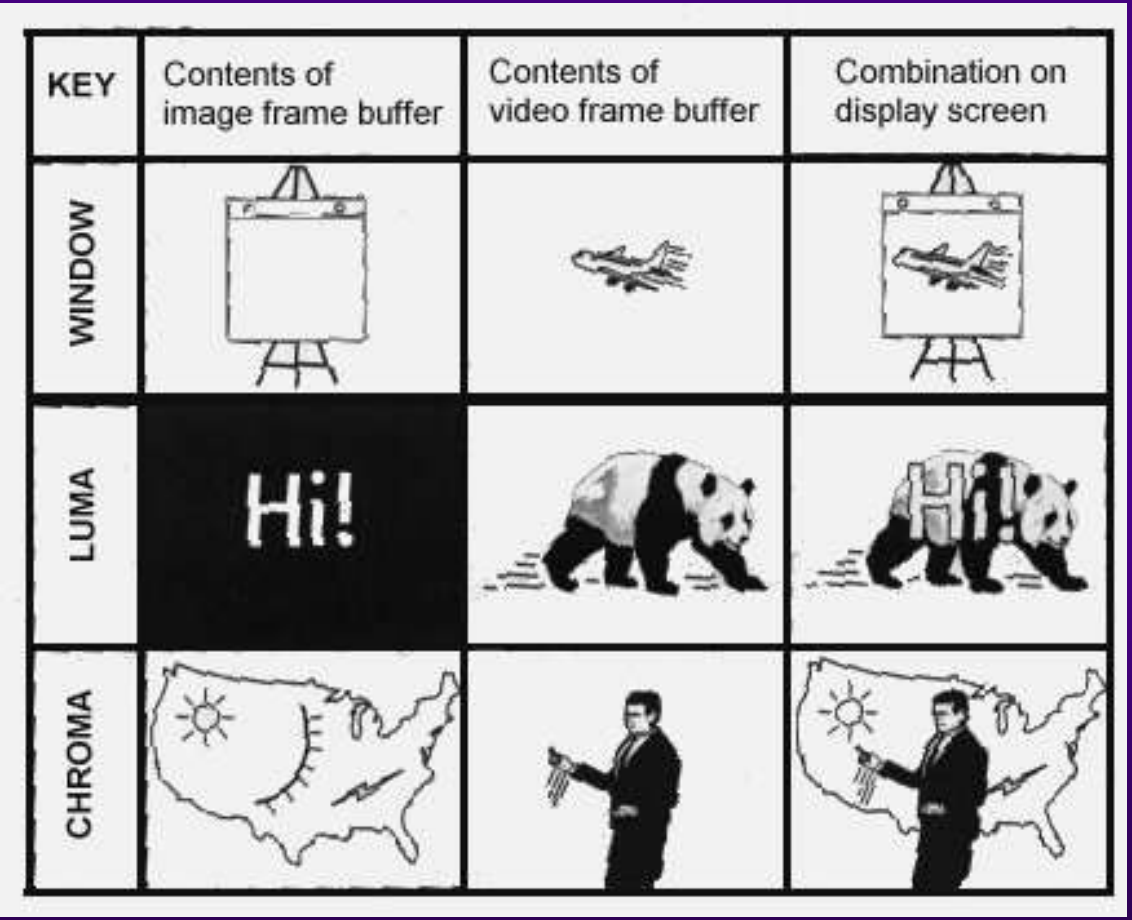
- Keying -

  An effect used to overlay two inputs.

Keying: Display multiplexor



Window, luma, & chroma keying



Digital Video - 1

Media type Digital video

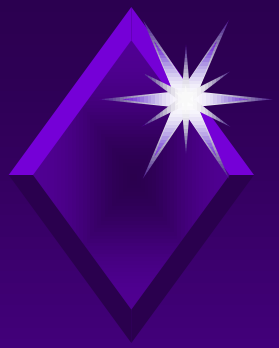
Representation

- Analog formats sampled
- Sampling rate
- Sample size and quantization
- Data rate
- Frame rate
- Compression
- Support for interactivity
- Scalability

Scalability

Scaleable video allows control over video quality

- Transmit Scalability: The encoded data rate is chosen at *compression* time.
- Receive Scalability - the decoded data rate is chosen at *decompression* time in order to match playback requirements.



Common Formats

- DVI - *Digital Video Interactive*
- MPEG - *Moving Pictures Expert Group*
- Motion JPEG - *Joint Photographics Expert Group*
- DV - *Digital Video*

Digital Video - 2

Operations

- Storage
- Retrieval
- Synchronization
- Editing
- Effects
- Conversion