Computer Science E-7
Exposing Digital Photography

Lecture 1: Welcome!
August 31, 2010

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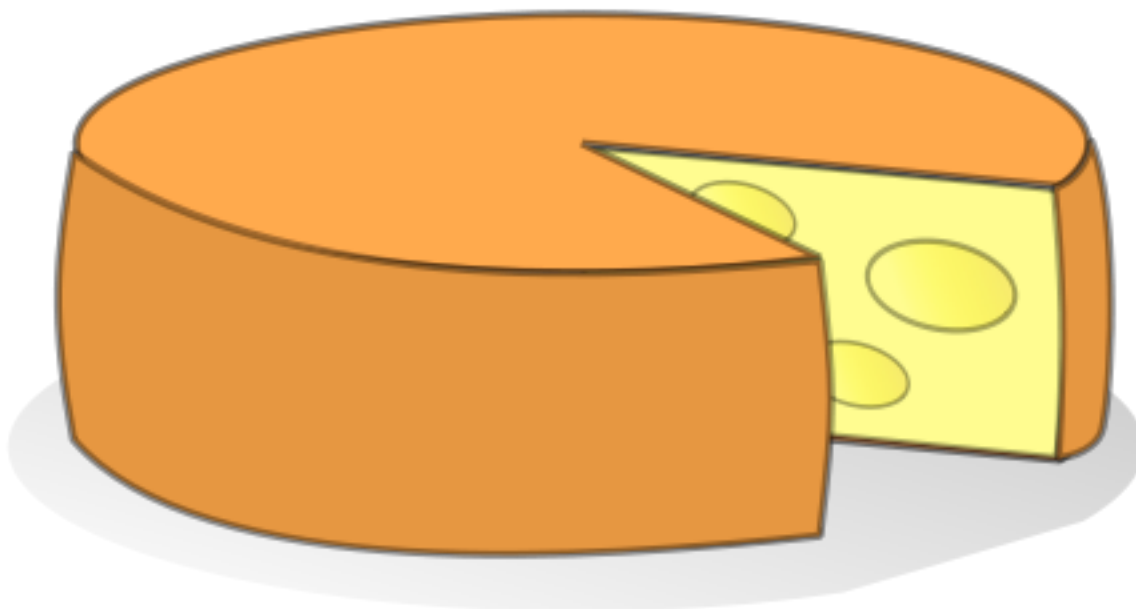


Cameras

Pinhole Cameras

Cameras

Pinhole cameras

Cameras

Single Lens Reflex (SLR)

Cameras

Non-SLRs

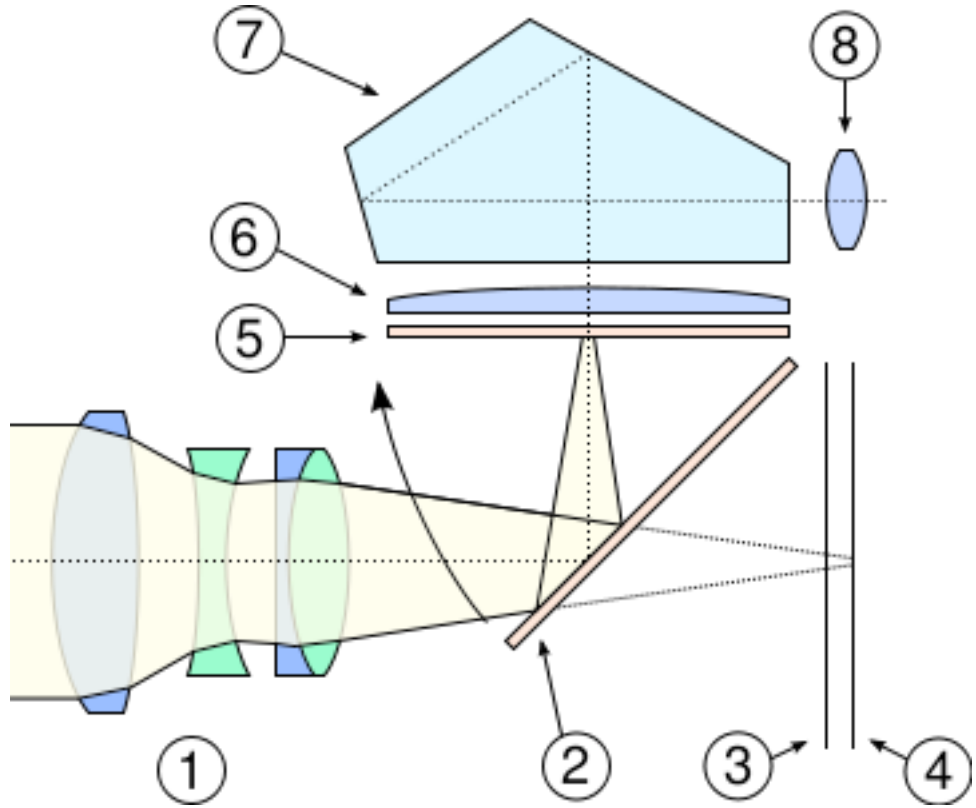


Image from http://en.wikipedia.org/wiki/Single-lens_reflex_camera

Cameras

Film Plane

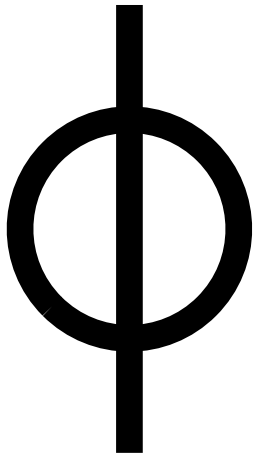


Image from http://www.dpreview.com/reviews/canoneos40d/page7.asp

Cameras

Location of the Focal Plane

Image from Digital Photography Review, http://www.dpreview.com

Cameras

Exposing SLRs

Photo by Dan Armendariz, 2007

Cameras

Exposing Dust

Photo by Dan Armendariz, 2007

Cameras

Exposing Dust

Image from Digital Photography Review, http://www.dpreview.com

Cameras

Exposing SLRs

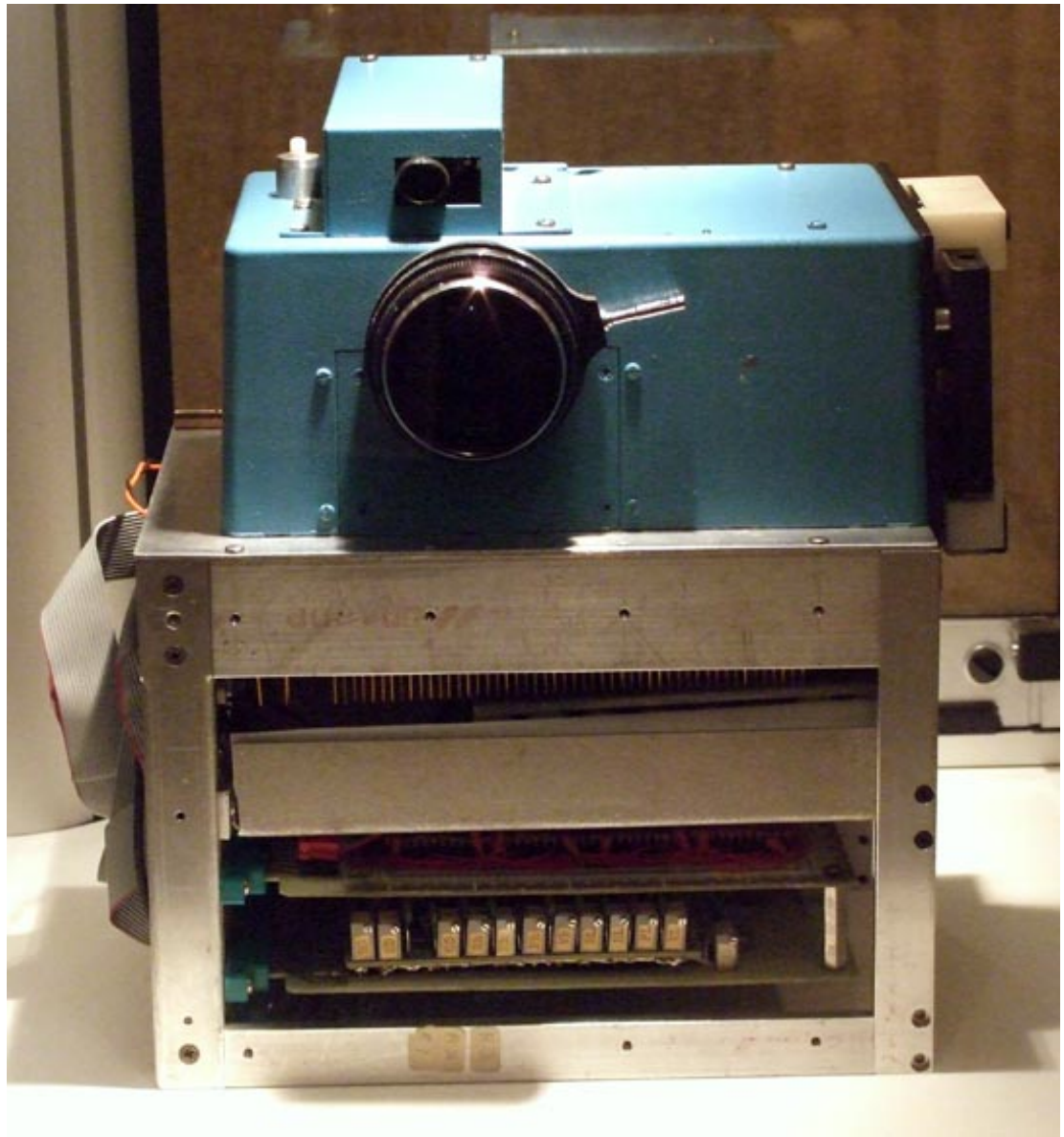


Image from CNET.co.uk: http://crave.cnet.co.uk/digitalcameras/0,39029429,49293172-1,00.htm

Cameras

Exposing SLRs

Image from CNET.co.uk: http://crave.cnet.co.uk/digitalcameras/0,39029429,49293172-5,00.htm

Cameras

Exposing SLRs

Bit	0 or 1
Byte	8 bits

Bits and Bytes

Refresher

Kilo-	1024 bytes
Mega-	1024 kilobytes (1,048,576 bytes)
Giga-	1024 megabytes (1,073,741,824 bytes)

Photo by Dan Armendariz, 2007

Photo by Dan Armendariz, 2007

Bits and Bytes

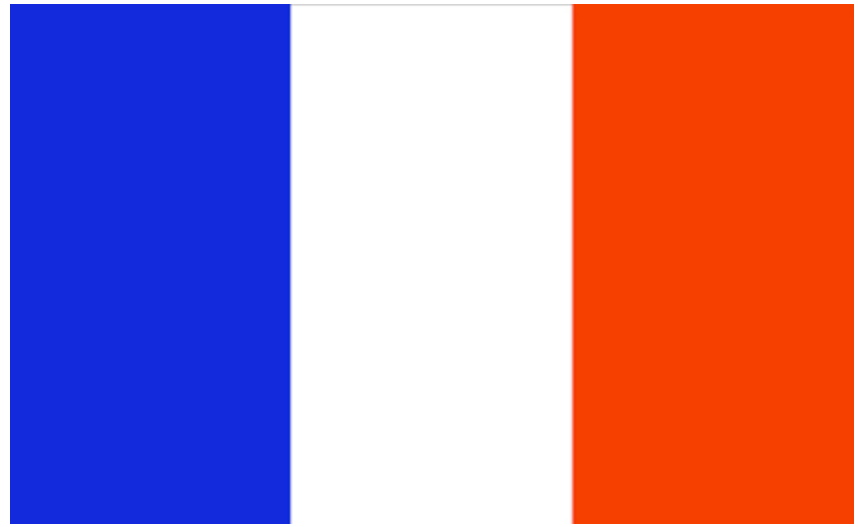
Photos

JPEG

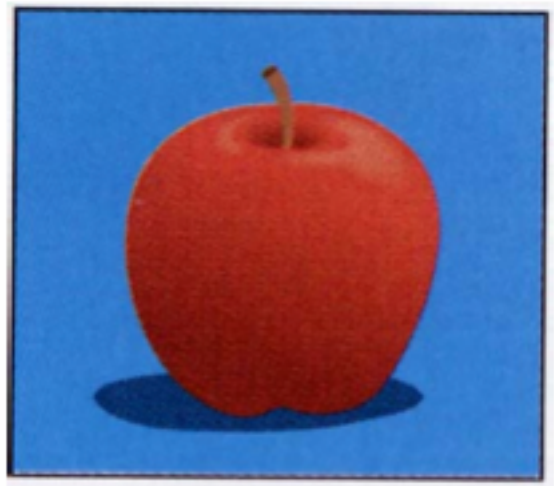
Red	Green	Blue
8-bit	8-bit	8-bit

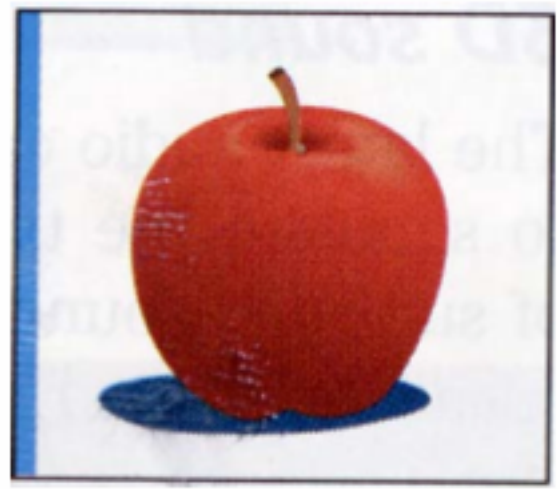
16-bit TIFF

Red	Green	Blue
16-bit	16-bit	16-bit



Flag images from http://www.worldatlas.com/, copyright © Graphic Maps.





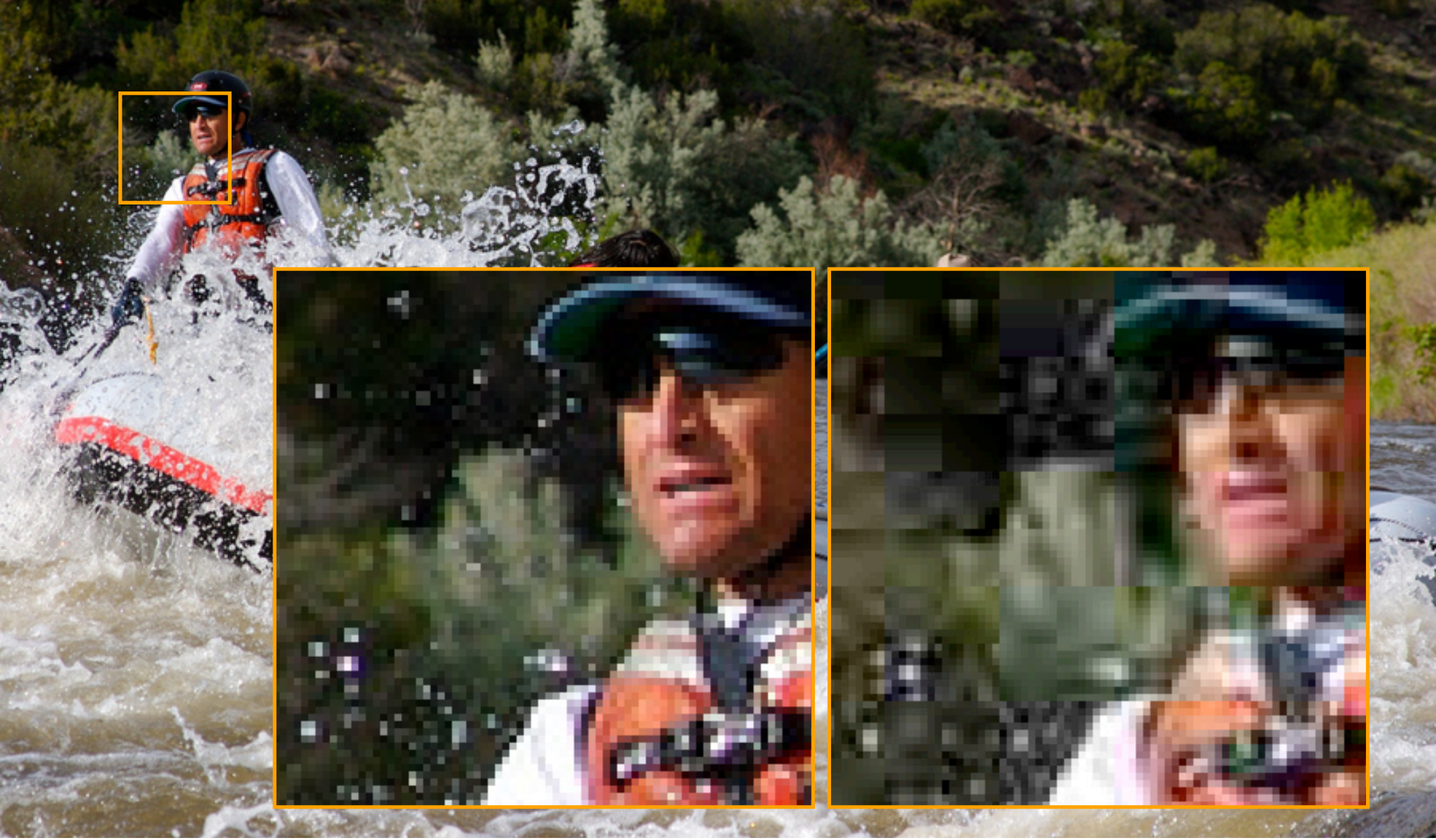


Photo by Dan Armendariz, 2007

Bits & Bytes

Lossless vs Lossy Compression

Name	Compression	Color	Alpha
JPG	Lossy	24-bit	No
GIF	Lossless	8-bit*	Yes
PNG	Lossless	24-bit	Yes**
PSD	Unknown (lossless)	48-bit	Yes
TIFF	Lossless	48-bit	No

* GIF contains an 8-bit palette (or subset of colors) from a 24-bit set of colors

** Some software does not properly display transparency in PNG files

Lecture 1: Welcome!
Lecture 2: Software Tools & Light
Lecture 3: Exposure
Lecture 4: Exposure (continued)
Lecture 5: Optics
Lecture 6: The Histogram
Lecture 7: Software Tools (continued)
Lecture 8: Assignment Slideshow
Lecture 9: Digital Cameras
Lecture 10: Digital Cameras (continued)
Lecture 11: Color
Lecture 12: Artifacts
Lecture 13: Even More Software Tools
Lecture 14: Assignment Slideshow II

Lectures
4 Assignments
1 Final Project
0 Exams

http://cse7.org/

staff@cse7.org

http://www.flickr.com/

http://www.flickr.com/groups/e7_2010

Image from http://www.dpreview.com/reviews/panasonicfz8/

Computer Science E-7

Cameras

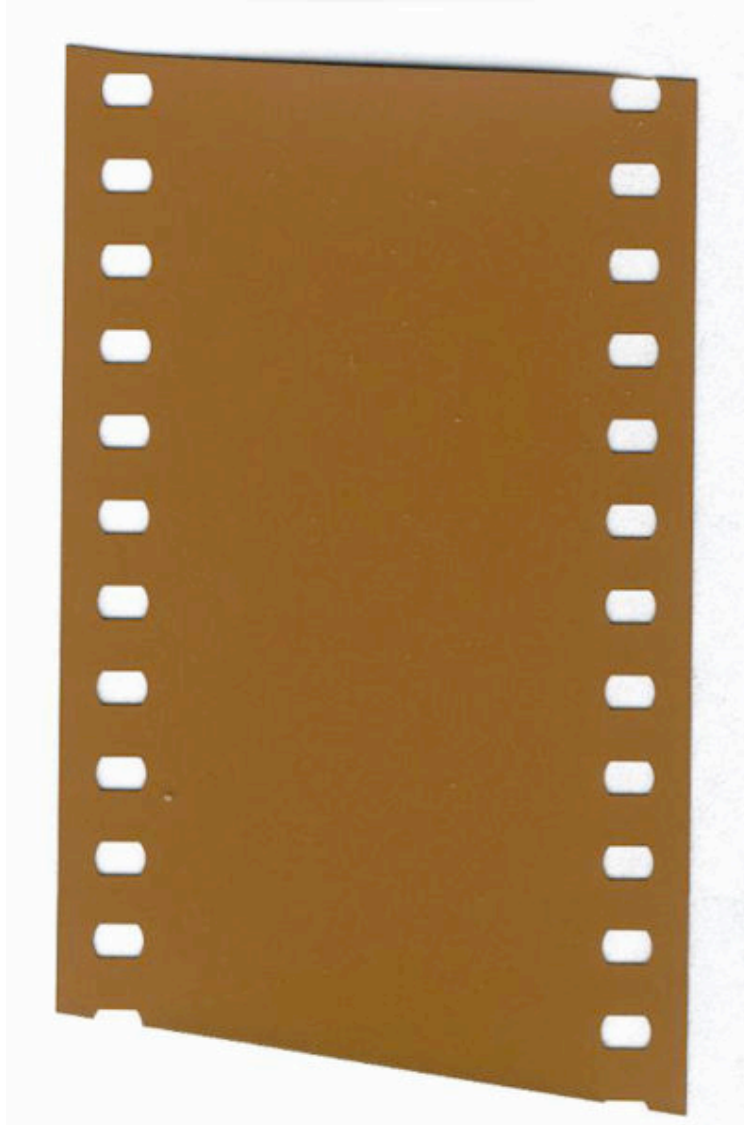


Image from http://en.wikipedia.org/wiki/35mm_film

Computer Science E-7

Similarity to Film

Photo by Dan Armendariz, 2007

Photographs

What makes a photo interesting?

Photo by Dan Armendariz, 2007

Composition

Rule of Thirds

Digital Photography

An Expensive Hobby

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