



Image and Video Optimization

In the context of
Fab Academy

FAB
ACADEMY

AALTO
FABLAB

A!
Aalto University

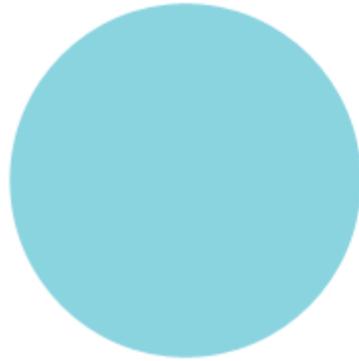
Overview

- **Background**
Image types, terminology, why optimize
- **Tools**
ImageMagick, ffmpeg and related
- **Demo**
Using the tools and updating website with optimized images and videos

Background

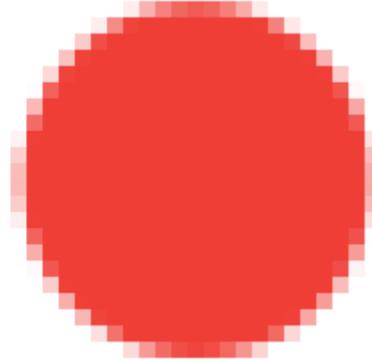
Two types of images

Remains crisp when zoomed
in at any level



Vector (.svg)

VS.



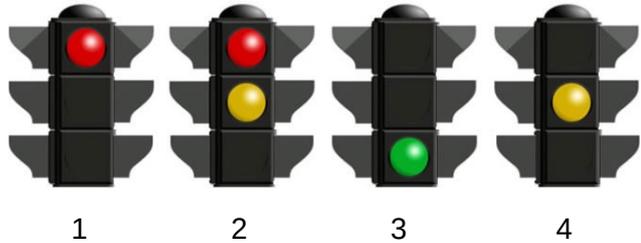
Raster (.png, .jpg)

Consists of limited amount of
rectangular "pixels"

These only web-related and most popular

Background

Videos



Sequence of raster
images



H.264

With video
compression applied



traffic.mp4

Packaged into
a file

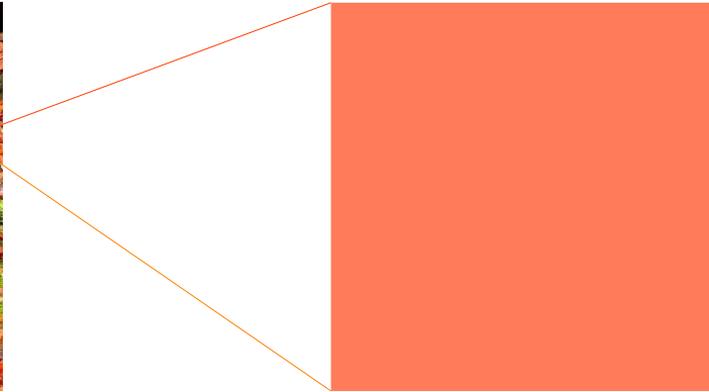
H.264 is the most popular compression algorithm on the modern web.
Video and audio streams are compressed and combined in .mp4, .webm and other containers.

Background

Pixels



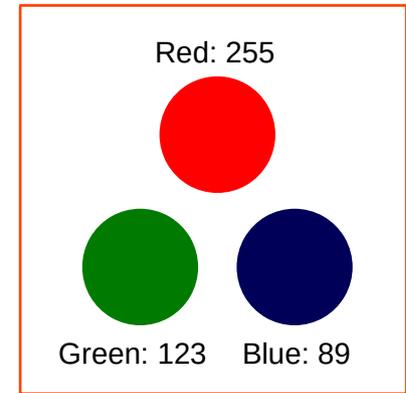
Image



One pixel

=
Optical
illusion

Each color has a
range: 0 – 255 (8 bits)



Any color can be made by
combining Red, Green
and Blue values

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Everybody
Knows
This
GIF



If not
Then
You do
Now

MakeAGIF.com

Tools

Image Production and Editing

Image capturing.
Sync your devices.



Screenshots



Dropbox



Gimp

Raster image.
Creation and editing.
Think Photoshop.



Krita



Scribus

Vector image.
Creation and editing.
Think Illustrator and InDesign.

Inkscape





Tools

Video Production and Editing

Video Production



OBS Studio

<https://obsproject.com/>

Video Editing



Kdenlive

<https://kdenlive.org/>

You can also use Zoom to record your lectures.

Tools

Image Optimization

With GUI



Preview
(Mac OS)

Installed by default



IrfanView
(Windows)

<https://www.irfanview.com/>



gThumb
(Linux)

<https://wiki.gnome.org/Apps/Gthumb>

Command Line



ImageMagick

<https://imagemagick.org>

Tools

Video Compression

With GUI



HandBrake
(all platforms)

<https://handbrake.fr/>

Command Line



gThumb
(Linux)

<https://ffmpeg.org/>

Demo Time !!!

Thank you!