



Gymnázium, Brno, Slovanské nám. 7

WORKBOOK

<http://agb.gymnaslo.cz>



Subject: Computer science

Student:

School year:/.....

Topic: Image files formats

Image file formats are standardized means of organizing and storing digital images. Image files are composed of either pixels, vector data, or a combination of the two.

Image file size—expressed as the number of bytes—increases with the number of pixels composing an image, and the colour depth of the pixels. The greater the number of rows and columns, the greater the image resolution, and the larger the file.

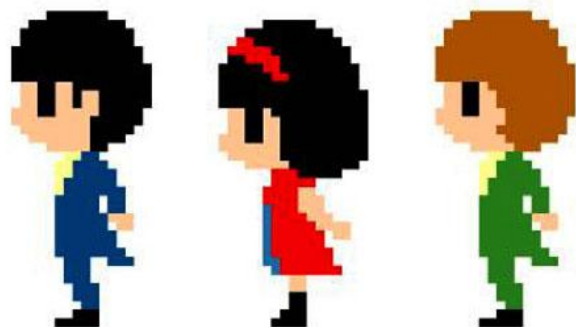
Image compression uses algorithms to decrease the size of a file. High resolution cameras produce large image files, ranging from hundreds of kilobytes to megabytes, per the camera's resolution and the image-storage format capacity.

There are two types of **image file compression** algorithms: lossless and lossy.

Lossless compression algorithms reduce file size without losing image quality, though they are not compressed into as small a file as a lossy compression file



Lossy compression algorithms take advantage of the inherent limitations of the human eye and discard invisible information. Most lossy compression algorithms allow for variable quality levels (compression) and as these levels are increased, file size is reduced. At the highest compression levels, image deterioration becomes noticeable as "compression artifacting".



Major graphic file formats:

Raster formats

JPEG (Joint Photographic Experts Group) is a compression method

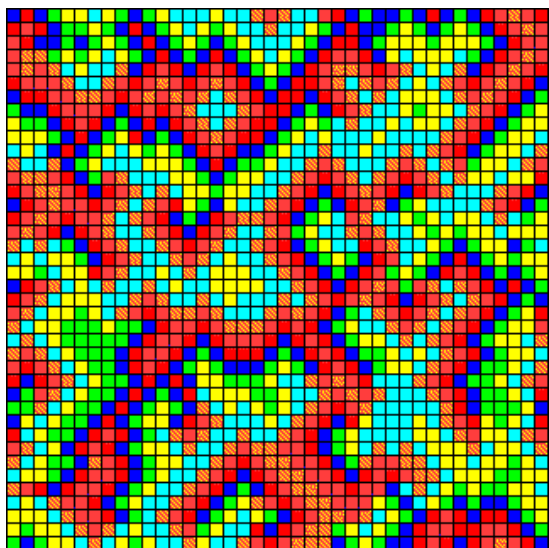
TIFF (Tagged Image File Format) usually using either the **TIFF** or **TIF** filename extension. TIFFs can be lossy and lossless.

PNG (Portable Network Graphics) file format was created as the free, open-source successor to the GIF. The PNG file format supports truecolor (16 million colors) while the GIF supports only 256 colors. The PNG file excels when the image has large, uniformly colored areas. The lossless PNG format is best suited for editing Picture.

GIF (Graphics Interchange Format) is limited to an 8-bit palette, or 256 colors. This makes the GIF format suitable for storing graphics with relatively few colors such as simple diagrams, shapes, logos and cartoon style images. The GIF format supports animation and is still widely used to provide image animation effects. It also uses a lossless compression that is more effective when large areas have a single color, and ineffective for detailed images .



BMP file format (Windows bitmap) handles graphics files within the Microsoft Windows OS. Typically, BMP files are uncompressed, hence they are large; the advantage is their simplicity and wide acceptance in Windows programs.



Vector formats

SVG (Scalable Vector Graphics) is an open standard

AI (Adobe Illustrator)

EPS (Encapsulated PostScript)





Sources:

<http://www.graphicshunt.com>

<http://pingmag.jp/2008/03/24/ymck-aesthetics-for-the-8bit-generation/>

<http://www.dejurka.ru/graphics/vector-for-free/>

