Aplicaciones Ofimáticas (Office Applications)

Unit 07. Basic editing of images, video and audio

Authors: Sergi García Barea, Gloria Muñoz González

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Licencia

Nomenclatura

A lo largo de este tema se utilizarán diferentes símbolos para distinguir elementos importantes dentro del contenido. Estos símbolos son:

📖 **Important**

❗ **Attention**

💬 **Interesting**

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Unit 07. Basic editing of images, video and audio

1. Images

1.1 Image Types

There are several types of images that are used in creating graphics and layouts. Some of the most common types of images are:

- **RAW images**: they are raw images that are saved in the format in which they were captured by a digital camera. These images are usually larger than other images and contain more detail and information, but require specialized software to open and edit. The most common RAW image formats are CRW, CR2, NEF and DNG.
- **Vector images**: they are images composed of lines and geometric shapes that are drawn using mathematical formulas. These images do not lose quality when enlarged or reduced, so they are used to representing images with high quality and resolution. The most common vector image formats are SVG and EPS.
- **Bitmap images:** they are images composed of small dots on a grid. Pixels can have different colours and are used to represent images with high resolution. The most common bitmap image formats are BMP, GIF, JPEG, and PNG:
  - **BMP** is an image format used on the Microsoft Windows platform. It is also known as a bitmap file or bitmap image file. BMP is an uncompressed image format that uses a bitmap to represent each pixel in an image. This allows for high image quality, but at the cost of a larger file size. BMP images are often used in image-editing applications and on graphics devices such as printers.
  - **JPEG** is a popular image format for photographs and other visual content with a full range of colours. It is a compressed format that allows for high image quality with a relatively small file size.
  - **PNG** is an image format often used for images with transparency and in web design. Like JPEG, it allows for high image quality with a relatively small file size, but with a different type of compression.
  - **GIF** is an image format often used for animations and other visual content with a limited number of colours. Unlike JPEG and PNG, GIF uses an image compression technique called bitmap, which allows for high image quality with an extremely small file size.

1.2 When is each image format appropriate?

Choosing the right image format depends on the use to which the image is going to be put and the characteristics that are desired. Here are some suggestions for when to use each of the most common image formats:

- **JPEG:** JPEG is recommended for photographs and other visual content with a full range of colors. JPEG is a compressed format that allows for high image quality with a relatively small file size.
- **PNG:** PNG is recommended for images with transparency and in web design. Like JPEG, it allows for high image quality with a relatively small file size, but with a different type of compression.
- **GIF:** GIF is recommended for animations and other visual content with a limited number of colors. Unlike JPEG and PNG, GIF uses an image compression technique called bitmap, which allows for high image quality with an extremely small file size.

- **BMP:** BMP is recommended for images that will be used in image-editing applications and on graphics devices such as printers. BMP is an uncompressed image format that uses a bitmap to represent each pixel in an image. This allows for high image quality, but at the cost of a larger file size.
- **SVG:** SVG is recommended for vector images that need to be scaled without losing quality. SVG is a vector-based image format that allows for high image quality with a relatively small file size. It also allows you to edit and modify the image easily.

1.3   Interesting links for image manipulation

Interesting links with image manipulation tools:

- Logos:
  - https://logomaster.ai/
  - https://coollogo.com/
- Edition:
  - https://www.remove.bg/es
  - https://onlineimagetools.com/
  - https://tinywow.com/
  - https://letsenhance.io/
- AI Generation:
  - https://www.craiyon.com/
  - https://huggingface.co/spaces/multimodalart/latentdiffusion
  - https://stablediffusionweb.com/

2.   VIDEO

2.1   Most Common Video Formats

The most common video formats are those that are widely supported by most devices and players. Some of the most popular video formats include:

- **MP4**: it is a video container format widely used in mobile devices and media players. It supports a wide variety of codecs, allowing for high video quality and a good file size ratio.
- **AVI**: it is an older video container format, but it's still supported by a large number of desktop players and media storage devices. The format isn't as efficient in terms of file size as MP4 or MKV, but it does support a wide variety of codecs.
- **MKV**: it is a video container format used for high-definition content and subtitles. It is a very versatile container format that allows you to store multiple audio streams, subtitles, and metadata in a single file.
- **WMV**: it is a video format developed by Microsoft and is mainly used on Windows devices. It is a highly compressed video format that offers acceptable image quality at a small file size.
- **MOV**: it is a video container format developed by Apple and is used primarily on Apple devices. It supports a wide variety of codecs, allowing for high video quality and a good file size ratio.
- **FLV**: it is a streaming video format used to stream content online, such as YouTube videos. This format is highly compressed to allow for low latency streaming and fast uploading over a slow internet connection.

2.2   Interesting links for video manipulation

Interesting links with video manipulation tools:

- Editors:
  - https://shotcut.org/
  - https://kdenlive.org/es/
  - https://www.openshot.org/
- Format converter:
  - https://handbrake.fr/

3.   Audio

3.1   Audio types

- **MP3**: It is a compressed audio format that uses a compression algorithm called "MPEG Audio Layer III". Compression is done by removing sounds inaudible to the human ear, allowing file size to be reduced without significantly affecting sound quality. It is compatible with most audio players and devices and is widely used for online music and song downloading.
- **AAC**: It is an audio format developed by the industry standard MPEG-4. It uses a more advanced compression algorithm than MP3, allowing you to achieve better sound quality with a smaller file size. It is the format used by iTunes and on Apple devices such as the iPhone and iPad.
- **WAV**: It is a lossless audio format, which means that the file contains all the original audio information without any quality loss. WAV files are large in size due to lack of compression, making them less convenient for storage and streaming over the Internet. However, they are widely used in audio editing and studio recording due to their high sound quality.
- **FLAC**: It is a lossless audio format similar to WAV, but with higher compression, which means that the files are smaller in size without loss of quality. It is a free and open source format, and is compatible with a wide variety of audio players.
- **OGG**: It is a free and open source audio format, developed by the Xiph.org Foundation. It uses a compression algorithm similar to MP3 and AAC, allowing you to achieve good sound quality with a smaller file size. It is compatible with a wide variety of audio players, but it is not as popular as MP3 or AAC.

3.2   Interesting links for audio manipulation

- Editor:
  - https://audacity.es/
- Online editing tools:
  - https://audiotoolset.com/
  - https://www.adobe.com/es/products/audition.htm
- Text to speech:
  - https://fakeyou.com/
  - https://www.text2speech.org/
  - https://voicemaker.in/
  - https://fliki.ai/

4. What goes into the exam?

We call this section that way because for students, it is always more attractive than "What should I learn in this topic?" :D. Next, we indicate from this topic the main ideas that you should prepare for the exam:

- Know the different types of image, video and audio formats.
- Know the adequacy of each multimedia format to its most appropriate uses.
- Be able to edit images, video and audio, as indicated during the activities of this unit

> **!** **Attention:** In addition to these notes, what has been worked on is included in activities and in the challenge.