5   COMPUTER GRAPHIC BASICS, WORKING WITH PICTURES

5.1   VECTOR AND RASTER

Computer graphics can be divided into two categories. It is a vector graphics and raster graphics. Both types have their advantages and disadvantages, and each type is useful for other purposes.

Each type uses a different "basic building block" and of course other types of files. This also means that there are programs for editing vector graphics and different programs for editing bitmap graphics.

5.1.1 VECTOR GRAPHIC

Vector drawing consists of individual objects, which are rectangle, ellipse, line, curve, outline, fill, and text. All these objects are made up of curves which stores information about the starting and ending point, and the directional vector of the curve. The result is a file that compared with grid is much smaller (in terms of data volume).

The advantage of vector graphics is the possibility of unlimited modifications without loss of quality. these objects can be variously magnified, rotated, etc., and the drawing remains good. (We cannot say this about the raster). The disadvantage of this format is that it is not suitable for describing complex patterns (such as images) and sometimes problematic transfer between vector programs

5.1.2 RASTR GRAPHIC

A raster image is made up of small dots called pixels. Each point in raster image stores information about color. When you place the points next to each other and under each other, we get the final image. Number of points is determined by the quality of the picture. The more points is, the better. This format can be found mainly in photos

One advantage is that it can display grid using complex models (photo) and also convert between raster formats is easy. The disadvantage is the large amount of data and most information loss (deterioration) in various adjustments (zoom, rotate, etc.

Původní obrázek   Detail vektor   Detail rastr

5.2   GRAPHIC FORMATS

Graphic formats provide rules under which the image is saved in the file. Some of the file formats can also store additional information such as preview image in low resolution, exposure information, date and time of acquisition and the like. The basic division we have already discussed - vector and bitmap.

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To save disk space needed to store the image (its size is in MB) data compression for images is automatically applied. Therefore, we divide graphic formats depending on the type of compression (Important, it's something other than compression - packing files, which was mentioned in one of the previous chapters):

- Lossless compression - even after compression the files retain information identical to the original. This prevents the loss of image quality. Usually not as effective data compression. These are mainly the following file types: TIF, TIFF, BMP, PSD

- Compression with loss - the compression of graphics discards information. It is used where it is possible to tolerate the loss of some information and some distortion where disadvantage is more than offset by a significant reduction in file size. These are mainly the following file types: JPG, JPEG, GIF, PNG

Currently, the most common compressed graphic format is JPG / JPEG - used primarily for routine work, the Internet, and presentations.

The most commonly used format in a lossless compression is TIF / TIFF - is used primarily for storing high quality photos in high resolution

Note.: Vector formats do not use data compression

5.3 VIEWING PHOTOS SAVED ON THE COMPUTER HARD DRIVE

Try to view the stored graphic files using system tools. The Windows systems has the ability to let you display thumbnails of image files. Just go to the selected folder in the View menu, select the option Thumbnails.

Windows also includes the Image Viewer program, which is run by double-clicking on the picture. The window displays the entire image.

5.4 VIEWING GRAPHIC FILES USING SPECIAL PROGRAMS

Currently there are many image viewers available for free (often for non-commercial and educational use). These contain tools (unlike Windows viewer) for image editing and format conversion options.

One such program is called IrfanView (it can be downloaded for free from www.slunecnice.cz example). Once installed, allows us to open virtually any text format, change the size (resolution) and save the image in any size in raster format.

5.5 USING PRINT SCREEN KEY

Print Screen is a function used to capture the actual content of the screen (e.g. content of error messages, documentation, procedures, etc.).

Use the Print Screen key to copy the entire screen as you see it on the monitor. (create the screenshot) to the Windows clipboard, and then the resulting image can paste (CTRL + V) into any program - for example, IrfanView and then to an image saved as a TIF / JPG file.