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VECTOR AND RASTER GRAPHICS IN WEB DESIGN

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Introduction. Technologies related to graphics and digit began to develop at a rapid pace with the accession/entering of society into the digital era. Web design is one of the newest areas that forms the basis for developing and designing web pages and web applications. It is an integral part of the modern world of digital design and includes a number of features associated with the use of graphics, composition and color. In particular, graphics is divided into vector and raster, each of which has its own peculiarities and is used to some extent when creating web pages and the interface.

Objectives. The basic objectives of this research are:

- to examine the use of vector and raster graphics when creating web pages and application interfaces;

- to analyze the peculiarities of the two varieties of graphics and indicate where and how raster and vector graphics are used in web design;

- to determine their main advantages and disadvantages that affect the overall look and quality of web pages.

Presenting main material. The development of websites and their design, which consists of graphic elements, is of great importance to information technology. Therefore, the qualification requirements for web design specialists include mastering the skills of preparing graphic images for web pages and developing design. Graphic elements are an important part of the original design, they also complement and revive the content of the text, help readers to understand better what the author is trying to convey to them. A single bare text can't convey the same amount of information as a text in combination with several well-chosen images. Graphics in this case is the main element without which no web designer can manage. After all, the main feature of the design of web pages – the need to place the maximum amount of information in a relatively small space.

The format of graphics is very important when creating the interface of any web page. It has its own peculiarities. There are two types of graphics – vector and raster – in web design. It is created using various programs, sometimes even using scripts, but essentially the image consists either of colored dots or is a set of curve lines [3].

However, it should be noted that there is no ideal graphic format, since each kind of graphics has its own disadvantages and advantages. For example, the advantage of raster graphics is that you can create any complexity of the picture and use a huge amount of filters and plugins with its help. The main drawback – raster graphics can't be stretched without loss of quality. Large drawings must be drawn large firstly, and photographs should be made with high resolution.

There is no vector stretching problem. Vector patterns are given by mathematical descriptions of lines and angles, rather than the color and the arrangement of dots in the picture. A vector image consists of separate guiding lines (vectors, curves) that form an image. Vector images are easily editable. All vector graphics or part of it can be transformed without loss of quality [2].

The use of any one type of graphics in web design is almost impossible, since a good web designer will not be able to do just the bitmap format. Design elements for some sites have to be created in vector form, especially if the site design has many sharp corners and straight lines.

A designer creates a layout of the website in Photoshop, using the received files in different formats: vector and raster graphics. There are certain formats that determine the type of graphics. In general, they store images, for example, for web graphics such standard formats are:

• JPEG (Joint Photographic Expert Group);

- GIF (Graphic Interchange Format);
- PNG (Portable Network Graphic);

From the three above mentioned JPEG format is mainly used to display multi-color photographs, while the GIF format most often applies to applications, illustrations, and drawings [3]. In general, these formats are inherent only for bitmap graphics, while others are used for vector graphics:

- SVG and SVGZ (Scalable Vector Graphics);
- EPS (Encapsulated PostScript);
- VRML (Virtual Reality Modeling Language);

Modern image processing programs allow to mix vector and raster type of graphics in a single file. You can export a JPEG photo or a GIF logo in Adobe Illustrator or Corel Draw, and insert vector images in the form of smart objects in Photoshop.

The formats AI, CDR, FLA and PSD to some extent are intermediate for web design – browsers do not know how to display such graphics. The site design is created firstly either in Photoshop in PSD format, or in Flash in FLA format (without the help of Illustrator or CorelDraw it is happened rarely), and only then the graphics are converted into Internet formats [2].

The choice of raster or vector format depends on the goals and objectives and the complexity of the elements to be created. If you want the photographic precision of color transfer, then raster graphics are usually used. Vector format is more convenient for designing logotypes and banners. However, each specialist decides on its own, taking into account the specific order and features of the future graphic product.

Conclusions. Vector and raster graphics are not just used in web design but are the basis for creating a web page. The certain features of these types of graphics affect the quality and overall look of the finished product. Web page layouts are created in vector and raster-based editors. In addition, they are filled with various graphic elements, for example:

- photo;
- background;
- different buttons;
- logos;
- banners;
- graphic images;
- video.

All of this is part of a large and comprehensive tendency of vector and raster graphics that have their own peculiarities in the use and creation of web pages. Actually due to this, the scope of web design is developing rapidly and attracts more and more attention.

Key words. Vector graphics, raster graphics, web design, web page, format

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