Contemporary technologies and their impact on pixel art

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Introduction

The research displayed many modern technologies that in turn led to the development of pixel art and helped artists practicing this style of art in designing and implementing their works. In recent times, computer drawing programs specialized in producing two-dimensional drawings have varied, and their techniques and performance have varied and presented to the artistic product.

Research objectives:

1- Shedding light on the most important graphics programs used in pixel art

2- Study the strengths and failures of each program separately.

The importance of the research: - The researcher tries, by presenting the programs (what they are and the steps for action for each), to find ways to learn to work with these technologies for those working in pixel arts.

Research problem: - The research problem is represented in presenting some modern computer programs used in graphic arts, and the extent of their impact on pixel art.

Research boundaries: Research takes place in some countries of the world as spatial boundaries, just as research takes from the twentieth century until now time limits.

Research methodology: - Descriptive and analytical

Key words: - technologies - programs - pixels
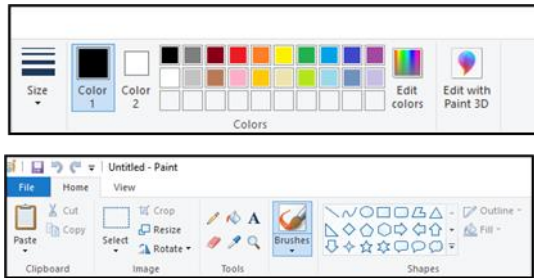
Definition - Pixel Art

Pixel art is a form of digital art wherein images are created and edited at the pixel level using graphics editing software. What defines pixel art is its unique visual style, in which individual pixels act as building blocks that make up the image. The effect is a visual pattern that is very similar to that of mosaic, cross stitch and other types of embroidery techniques (5).

Some drawing programs used for 2D drawing

There are many computer drawing programs specialized in producing two-dimensional drawings, and their techniques and performance have varied and presented to the artistic product, and here the study shows some of these programs and the most common and widespread among painters, there are several programs that can draw this type of graphics, some of them are simple and very easy and some are professional, the easiest and simplest of these programs It is the MS Paint program from Microsoft, which usually comes with the Windows operating system. To use this program, it is sufficient to use the pen tool with the smallest size of the font and enlarge the perspective to the largest degree, which is 800%, in order to be able to draw pixel graphics.

MS paint

Microsoft Paint is also known as MS Paint. It is a basic graphics drawing program that has been an indispensable part of all versions of Microsoft Windows OS. MSP provides easy ways to create different types of drawings with different tools. Tools include brushes, shape generators, pens, and erasers. Many Windows users might not be aware of its existence, due to the popularity of web-based graphics creation tools. Therefore, you need to know exactly where to access MS Paint. (4) (Figure 1) Microsoft Paint window
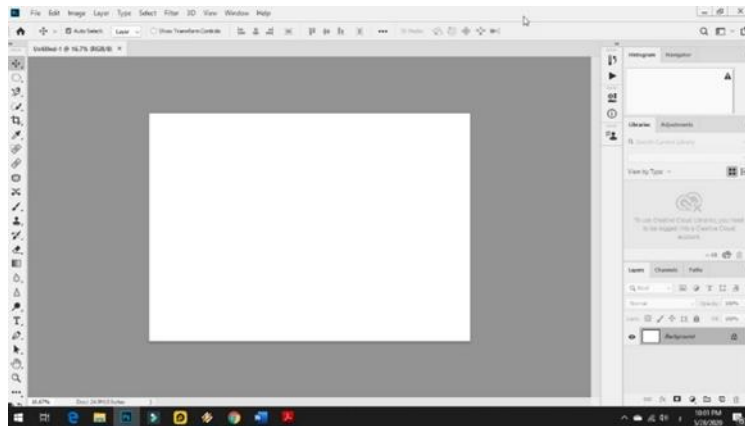

(Fig. 2, 3)   **(Figure 1) Microsoft Paint window**

Adobe Photoshop

It is one of the programs of the (Adobe) company that seeks to continuously develop this program until it reached its latest release (Adobe Photoshop CS6). It is an image editing program as well as it is one of the most used drawing programs by digital painters, as it deals with all kinds of digital images and is used for image processing The design also uses images and websites (8).

(FIGURE 4) PHOTOSHOP INTERFACE

(Figure 4) Photoshop interface to create transparent layers (Layers) superimposed on each other to form the required image from several layers and thus it is easy to deal with each layer without the other separately (16).

The program (Photoshop) contains the commands and tools distributed in the top, right and left of the program window. It is a program related to the field of drawing and the field of design alike. At the top of the program there is a drop-down menu bar that contains the following commands: (file, edit, image, layer, selection, filter, display , Window, instructions).

Adobe Illustrator program

Adobe Illustrator, is one of the programs of the Adobe company that specializes in designing vector graphics, and the program includes many features that have developed the design of logos, illustrations, and contributed to the work of motion graphics.

It is a favorite for those wanting to create graphics, illustrations and digital printing for all types of media, print, web, interactive, video and mobile.

The difference between Illustrator and Photoshop

(Figure 5) The difference between Illustrator and Photoshop

Photoshop and Illustrator are both design programs belonging to Adobe, but Photoshop specializes in raster designs, and Illustrator specializes in vector designs (Fig. 6) The difference between Illustrator and Photoshop.
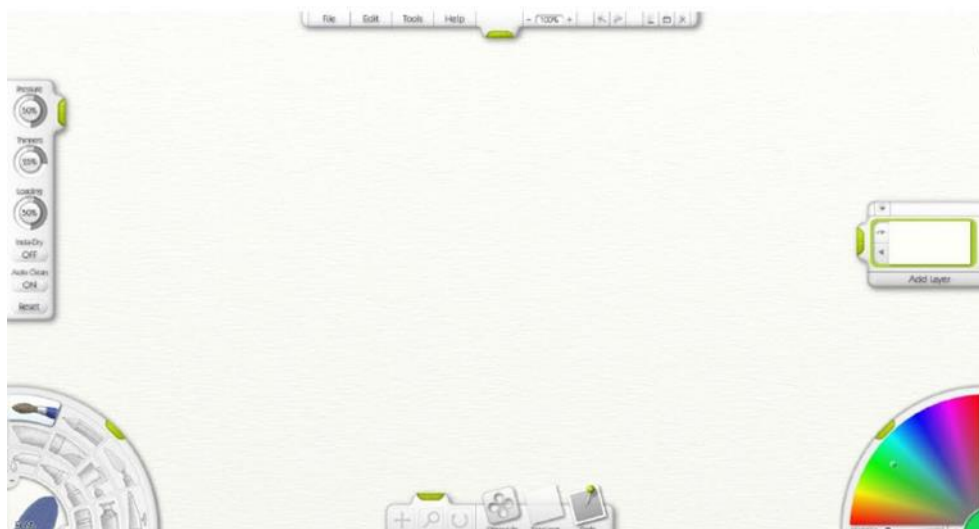
The bitmap is known by more than one term in English such as Pixel, Bitmap, Rasterize, and the vector image is known by terms such as Vector, Meta, Postscript, Scalable, the difference between the two is large even though they are both in the end is a digital image

(Figure 6) The difference between Illustrator and Photoshop

ArtRage software

Art Rage drawing program is one of the easy-to-use specialized drawing programs that appeared in several versions, the most recent of which is ArtRage 3 version (9), and when (Figure 7) opens the ArtRage window, we see a variety of tools and tools that the program contains distributed on its sides.

(Figure 7) Opening the ArtRage window

The upper part of the program window contains the menu bar that includes painting options, printing, saving, loading, and settings for the canvas and controls for setting the window size, the undo or return command, and other commands for choosing the type of brushes, color options, and layer options distributed on the lower sides and to The right side to be available to the artist to facilitate his work.
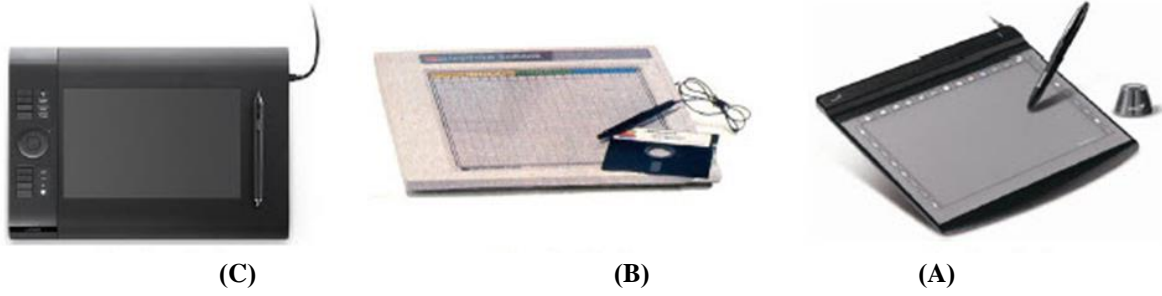
Input devices for digital graphics

Any drawing program from the programs mentioned above or others can only be achieved by using:

a. a. Digitizer Graphic Tablet
b. B. Light pen

They are two of the sensitive input devices that connect to the computer and operate the mouse function, as the light pen can point and move within the display screen, and by pressing the light pen on the surface of the board, each point is indicated by x-and-y coordinates that enter the computer, so the required drawing in the form of a group of Compressed points, and some digital graphic tablets provide a large number of pressure levels, up to (1024) levels of pressure, and you can sense the subtle and subtle differences in wrist and arm movement, such as tilt, joint and direction) (3).

 The digital drawing tablet is provided with special keys to perform a number of other functions, and the light pen can be directly connected with a wire to the computer or in other types. The optical pen is provided with a renewable battery upon consumption. Some digital artboards.

| **(C)** | **(B)** | **(A)** |

(Figure 8) The digital drawing tablet with special keys

Results :-

1- Computer programs have an effective role as tools that help artists in the current era, especially graphic artists

2- The multiplicity of graphic programs gave the artist the freedom to choose the best and most suitable according to the needs of the artist

Recommendations:

The researcher recommends paying attention to these programs and working to provide books and references in this field due to their scarcity, and the presence of many websites.

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