Image processing: It is the process of changing the nature of the image for the purpose of improving its quality, showing information from the image clearly, or hiding information from the image. However much we can improve the image, we can also distort the image. We will use the MATLAB program, which is an abbreviation for Matrix Laboratory. It relies in its work on matrices, as it treats the data entering it as if it were a matrix. The image consists of (pixels) which are in the form of squares that represent the colors within the image. Each color is represented by a number, and the number is represented by the intensity of the color within. The image (this means that the image is made up of matrices, and each matrix contains numbers, and the numbers represent the intensity of the colors within the matrix, which in the end gives a result of the contrast of the matrix, giving the conventional shape of the image). Since the image is made up of matrices and MATLAB relies on matrices, it is the most efficient program used in processing the pictures.

Image processing applications We can learn about the importance of image processing through applications in several fields, including in medicine. You can segment x-ray images and identify different areas, and this makes it easier for doctors to diagnose, as this method is used by biophysicists. Image processing is also used in analyzing aerial images through which you can identify On data and forecasting the weather, as well as in forensic evidence, because through image we

can eliminate the effect of movement (where if a person moves quickly in front of the camera, the speed with which he moves can be affected).

Types of images

1. Gray scale images: They are two colors, white and black, and the gradient is (0 255), where (0) represents black. And (255) represents white

2. Color images: Red Green Blue (RGB), which consists of three matrices (red, green, and blue matrix).

Some of the instructions or commands that we will use in image processing:

* Imread calls the image in the form of an array, which contains data related to the colors within the image and its display. To call, we will create a variable 0 (to store the image data (a=imread)
* Imshow=Display the image

 Histogram: It is considered one of the techniques used to modify the contrast of an image. It is a histogram used to represent the intensity of color intensity in the image. It is considered one of the tools used in analyzing data as it produces graphic drawings. These drawings give information about the simple shape of this image and enable the person to distribute the data and then analyze it. To

reach the desired result, it is worth noting that the histogram only works on grayscale images.

Implementation process

i=imread('ag.png'); Read the image

G=rgb2gray(i); Convert the image to grayscale

Figure,imshow (g) Image display

Figure,imhist(g) Display histogram

Histogram equalization: A technique used in digital image processing that adjusts the contrast of the image and makes its histogram distributed over the entire image. To implement it, we follow the following steps:

Eq=histeq(g);

Figure,imshow (Eq)

Figure,imhist(Eq)

Divides the figure into rectangular panes

Dividing the image display into more than one shape (displaying two or more images within one shape) and for this we use the Subplot function, which contains three parameters: the first is the number of rows, the second is the number of columns, and the third is the location in which we print the shape: To implement this we do the following:

Figure;

Subplot(1,2,1), imshow(a),title(‘1’);

Subplot(1,2,2), imhist (Eq),title(‘2’);