Introduction:

For the implementation of image processing system, we have implemented a code in which have taken one original file, we can convert this original file on gray scale. When we crop that gray scale, so we can see that gray scale into latitude and longitude after cropping. We have one dialog box which contain four options in which we have four images.

First image is original image, second image is the one which is converted on gray scale, third image is cropped or edited image and fourth image is the one which defines color combination i.e. it defines the color contrast of original image, color contrast in a sense like we are a normal user and we know which color is blue and we know its categories i.e. which one is sky blue, violet blue, ultra violet blue light blue etc. But computer don't know how to sense these colors, so computer senses these colors through color codes i.e. 200, 220 and 240. Its shows in the form of graph.

What is Image Processing?

An image is defined as an array, or a matrix, of square pixels (elements of picture) arranged in rows and columns. **Image processing** is defined as a means of translation between the human visual system and digital imaging devices. Some of the important applications of image processing in the field of science and technology include computer vision, remote sensing, feature extraction, face detection, forecasting, optical character recognition, finger-print detection and many more.

Why do we need Image processing system?

Nowadays, image processing is among rapidly growing technologies. It forms core research area within engineering and computer science disciplines too. Image processing is often viewed as random manipulating an image to support a preferred reality. The human visual system does not perceive the world in the same manner as digital detectors, with display devices imposing additional noise and bandwidth restrictions. The main differences between the human and digital detectors will be shown along with some basic processing steps for achieving translation. Image processing must be approached in a manner consistent with the scientific method so that others may reproduce and validate one's results. This includes recording and reporting processing actions and applying similar treatments to sufficient control images.

Image processing is now has become everything. AI requires it a lot. Some examples are given below:

- When you try to edit effects remember that you need image processing to do that. Changing effects is like you'll change each and every pixel's intensity and color.
- Think what if you can do almost everything using Image processing and machine learning and no humans required.
- Image processing and recognition has already become a part of our life.

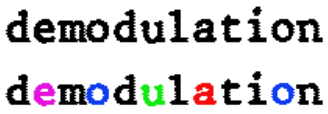
- Image processing is really powerful and imperative in now and future and we can do many things with it.

Nowadays, there is large list of image processing options available, For example:

- **Crop:** easily crop the image, taking the edges away.
- **Multi-zone detection:** to be able to define and crop several documents in a single document.
- **Image segmentation:** automatic detection of several images within the image.
- **Curvature correction:** flatten the pages bot both right and left pages will be at the same level.
- **Lighting correction:** to get a homogeneous light on the image.

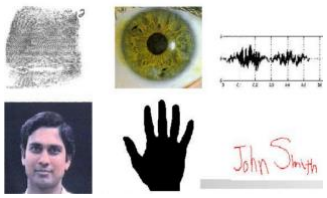
Image processing is used in various fields like:

- Character Recognition

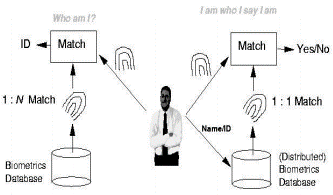


- Signature Verification

- Biometrics

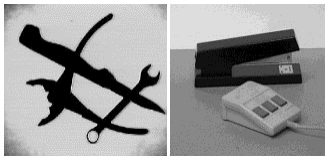


- Fingerprint Verification / Identification



- Automatic Target Recognition

- Object Recognition



- Traffic Monitoring

- Face Detection