**IMAGE PROCESSING**

**ABSTRACT**

The ultimate aim in a large number of image processing applications is to extract important features from image data, from which a description, interpretation, or understanding of the scene can be provided by the machine. Image processing can be defined as, the processing or altering an existing image in a desired manner. This system allows the user to take hard copy of the image using printer routines and allows the user to store screen image into the disk file using file format (bmp, jpg, gif). Image processing in its general form pertains to the alteration and analysis of pictorial information. We find instances of image processing occurring all the time in our daily lives. Probably the most powerful image processing system is the human brain together with the eye. The system receives, enhances and stores images at enormous rates of speed. The objective of image processing is to visually enhance or statistically evaluate some aspect of an image not readily apparent in its original form. The basic principle of image processing operations carried out will assist us in greater perception and vision but does not add any information content. This objective is carried out through development and implementation of processing means necessary to operate upon images.

The recent availability of sophisticated semi conductor digital devices and compact powerful computers, coupled with advances in image processing algorithms, has brought digital image processing to the fore front. Digital image processing has a broad spectrum and applications, such as remote sensing via satellites and other spacecraft image transmission and storage for business applications, medical processing, radar sonar and acoustic image processing, robotics and automated inspection of industrial parts.

There are various features provided by system to edit an existing image, which are as follows

Image scaling includes zooming and shrinking images. We can use enlarging to zoom in on the art of an image for closer examination. Image shrinking is useful for saving disk space, fitting a large image into smaller display and pasting several images into one image of the same size.

Image compression tool is an application, which works with BMP (bit map pattern File Format) gray scale images. The user will send images and according to the specification they will be modified.

Image rotation tool is used to rotate the image by the specified angle. Resembling is used to increase the size of each pixel by a certain factor. We have used various filtering techniques like lightening, darkening, embossing, sharpening, softening etc.

Edges characterize object boundaries and are therefore useful for segmentation, registration, and identification. Our system allows the user to detect the edges in a given image. We have developed a program, which can be used on compressed/uncompressed BMP, JPG, and GIF file formats to perform any of the above-mentioned functions.

**Existing System:**

There are applications is to extract important features from image data, from which a description, interpretation, or understanding of the scene can be provided by Machine. But there is no proper processing can be defined as, the processing or altering an existing image in a desired manner.

**Proposed System:**

The powerful image processing system is the human brain together with the eye. The system receives, enhances and stores images at enormous rates of speed. Image compression tool is an application, which works with BMP (bit map pattern File Format) gray scale images. The user will send images and according to the specification they will be modified. Image rotation tool is used to rotate the image by the specified angle. Resembling is used to increase the size of each pixel by a certain factor

**Modules:**

**Administrator**:

Admin is the authorized person to maintain Image Processing application.He can add uses of this application and can update and delete the users.

**User Module:**

User can load the images to be processed and can add the special effects and many other features to the existing application .

**File Module:**

In this module the files can be created, opened and loaded. A file can be selected to process the image .The files are of type image.

**Effects Module:**

Image can be blurred, sharpen , brightness can be increased and decreased. Image can be displayed in negative grayscale , Embossed and Engraved etc.

**Extras Module:**

In Extras module image height , width , measurements (inches and decimals ) can be changed .Image can be zoomed in and out. Mirror image can be displayed image can be flipped horizontally and vertically.

## **NECESSITY OF IMAGE PROCESSING:**

Even though human beings are adept at interpreting images there are certain thresholds beyond which we cannot detect just-noticeable differences in the imagery. For example an analyst can detect only 8 to 16 shades of gray, even when data is recorded with 256 shades of gray. Hence , one may not be able to interpret data in the remaining shades of gray. Also it is necessary to continuously track large amounts of data and its storage is also a problem. To avoid all these difficulties one shall prefer processing of images by digital computers, which processes at a much faster rate than human beings do.

APPLICATIONS OF IMAGE PROCESSING:

Applications of image processing include several fields such as

1. Remote sensing 2. Pictorial database

3. Radiology 4. Graphics design

5. High energy physics 6. Photo editing

7. Character recognition 8. Finger print matching

9. Cytology 10. Defense applications

11. Metallurgy

**SYSTEM REQUIREMENTS**

**Hardware Requirements**

* Hard disk: - 80GB
* RAM: - 512MB
* Processor: - P V
* Multimedia Key Board

**Software Requirements**

* Operating Systems: **WINDOWS NT** 4 / 2000 / XP
* Technologies Used: Java,SWING, jdbc, jsp
* Application Server: Apache Tomcat
* Front End: html,jsp
* Back End: Oracle 9.ior Access