Abstract:- lossless compression · lossy compression lossless compression:-

ABSTRACT:-   To transfer the image in many types are used this such as computer, mobile and internet etc. The transmission of images in computer, mobile and internet are etc. To store an image digital data are required in large quantities. To overcome the problem limited bandwidth, there is need to compress the image before transmission. To make clear the problem various image compression techniques have been developed in digital image processing.   This study presents a survey on   Image Compression Techniques.

Keywords: Compression, image compression, lossy compression, lossless compression. INTRODUCTION:-Digital images become popular for transferring visual information which is using the images over traditional camera film images. It produces instant images, which can be viewed as film processing. But these images are displayed in large size. To overcome the problem use of image compression technique is used to reduce to size without affecting the quality of image.   The reduction performed to store the more images in the disk or given memory space. To reduce the size required a bandwidth less and quickly to transfer the image or less time transfer the image related to cost.

The compression techniques are classified in two. One is lossless compression and another one is lossy compression. COMPRESSION TECHNIQUES:-The set of compression techniques used in image processing are for various applications.

·   Lossless Compression·   Lossy CompressionLossless Compression:-   Lossless compression perform in original image can

be perfectly recovered from the compression image which is provide a quality of image. It is also known as entropy coding since to eliminate the redundancy use decomposition technique. These are mainly used for application like medical imaging, technical drawing etc. Some of the methods using lossless compression technique. Ø Huffman CodingØ Area CodingØ Arithmetic CodingØ Run Length Coding HUFFMAN CODING:-   Huffman coding based occurs on the frequency and probabilities. The frequency occurs on the file. To reduce the file size by 10% to 50% for Huffman coding and irrelevant information can be removed.

Each pixel is treated as a symbol. The symbols are representing a higher frequency which is assigned a smaller number of bits which the symbol less frequency is assigned a relative large number of bits. Huffman algorithm used to an application for JPEG. The advantages of easy to implement and It is an optimal and compact code. The disadvantage is algorithm can relatively slow. It depends on the statistical model of data. The decoding process difficult and different code length AREA CODING:-   The area coding enhanced from run length coding of lossless compression technique. It is a highly effective which is provides a better compression ratio (CR).

It reflect the two dimensional character of image. But it produces a limitation. It cannot implement the hardware because of non-linear method. The advantage of the area coding technique using over lossless other methods. It is used to special code words which is identifying the large areas of contiguous 0's and 1's.

The image can be segmented into a blocks. Segments are classified as block. It only contains a black and white pixels or block with mixed intensity and all pixels of the block have same value. LZW CODING:-   LZW is a Lemple-Ziv-Welch. LZW based on the dictionary. The dictionary is classified in two. One is represent a static and another one is represent dynamic. The static perform a dictionary for fixed encoding.

Dynamic perform a dictionary is updated for decoding process. The applications are used as a TIFF and GIF files. The advantage of lzw coding is easy to implement and compression perform is fast. The disadvantages are to make string table is difficult and storage need an indeterminate. LOSSY COMPRESSION:-   Lossy compression techniques perform a data can be compressed and loss of information. Various lossless compression techniques compared higher compression ratio in reconstruction of the image.

It provides a quality of data for better compression. It performs to remove redundancy of the original images. The following methods are using for lossy technique. Ø Transform coding Ø Vector QuantizationØ Wavelet codingØ Fractal codingTRANSFORM CODING:-   Transform coding is one of the Lossy compression techniques in which the original image can be into small blocks of smaller size. This technique is used as a data audio signal or biomedical image.

This type of coding required a lesser bandwidth. Transform coding use DCT (discrete coding transform) which is perform as used to change the pixel of the original image. The widely used for the transform coding, JPEG image

compression standard adopted transform coding technique. VECTOR QUANTIZATION:-   Vector Quantization is one of the most lossy compression techniques. VQ is a very powerful technique for digital image compression. VQ extension of scalar quantization but with multiple dimensions.

VQ need to develop for code vectors which dictionary performs a fixed-size of vectors. Which means image again divided into non-overlapping blocks, this are knows as image vectors.   The dictionary is determined closest matching vector for each image vector. The original image vector is encoded which is use for the dictionary. It is widely used as a multimedia application.

The advantage VQ is simple decoder and no coefficient quantization. The Disadvantages is generating a slow codebook and Small bpp. WAVELET CODING:- Wavelet coding is one of the most popular lossy compression technique, Wavelet means a " smallwave" the waves are implies to a window function of finite length. Wavelet functions are approach mathematics. Wavelet Compression algorithm performing a Discrete Wavelet Transform (DWT). Such as a Embedded Zero Wavelet (EZT) performance is excellent. The compression quantization of the image which is specified the wavelet space image of sub-band.

Image compressions do the encoding of sub-band. Inverse or Reverse order successively perform the image decompression, or reconstruction and which decode, dequantize and inverse Discrete Wavelet Transformation.   The advantages is a high compression ratio, State-Of-The- Art, low encoding complexity and It produce no blocking artifacts. The Disadvantages is

Coefficient Quantization, Bit allocation and less efficient FRACTAL

CODING:-   It is one of the most lossy compression technique

used in digital images.

It mainly based on the fractals. This approach natural images, edge

detection, color separation, spectrum and textures analysis. It performs the

fact parts of an image and resembles other parts of the same image. This

are convert parts into mathematical data.

These data are called " fractal codes". Which are used to recreate the

encoded image. The advantage is a good mathematical encoding-frame and

resolution encoding.

The disadvantages is a slow encodingCONCLUSION:-   Basic concept

of image compression and various technologies used are discussed in

this paper. We have also discussed advantages and disadvantages of

some lossless image compression and lossy image compression

techniques. A survey is performed on the most essential and advance

compression methods, in lossless technique the image can be decoded

without any loss of information.

But in case of lossy compression it cause some form of information loss.

These techniques are good for various applications. Lossy compression is

most commonly used to compress multimedia data like audio, video, and still

images, especially in applications such as streaming media.

By contrast, lossless compression is required for text and data files, such as bank records and text articles. Quality of image, amount of compression and speed of compression.