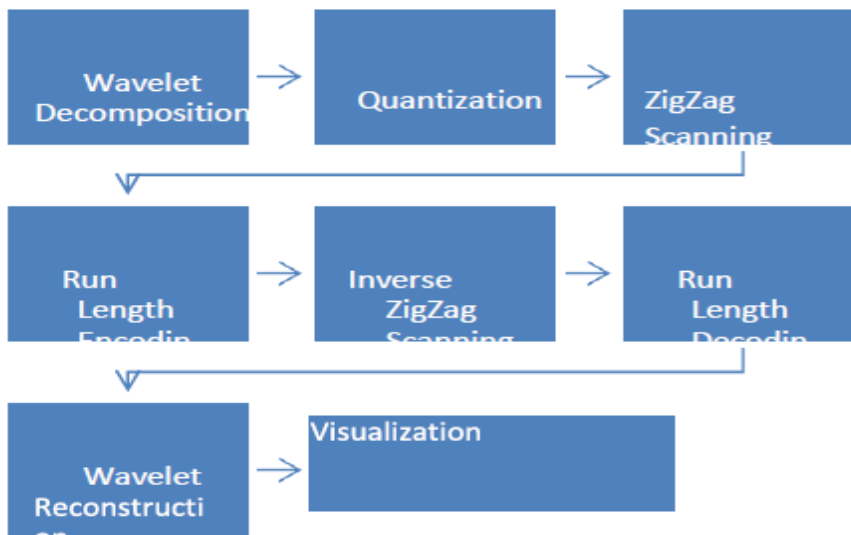
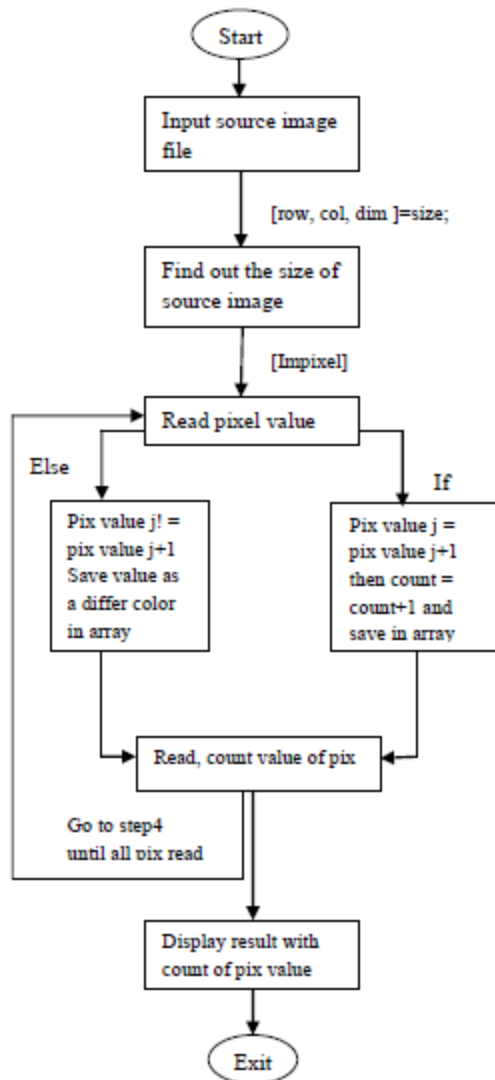


Image Compression Techniques

Image compression plays an impressive role in memory storage while getting a good quality compressed image. There are two types of compression such as Lossy and Lossless compression. Huffman coding is one of the efficient lossless compression techniques. It is a process for getting exact restoration of original data after decompression. It has a lower Compression ratio. Lossy compression is a process for getting not exact restoration of Original data after decompression. However, the accuracy of the reconstruction is traded with the efficiency of compression. It is mainly used for image data compression and decompression. It has a higher compression ratio. Lossy compression can be seen in fast transmission of still images over the internet where the amount of error can be acceptable. Enhancement techniques mainly fall into two broad categories: spatial domain methods and frequency domain methods. Spatial domain techniques are more popular than the frequency domain methods because they are based on direct manipulation of pixels in an image such as logarithmic transforms, power-law transforms, and histogram equalization. However, these pixel values are manipulated to achieve the desired enhancement. But they usually enhance the whole image in a uniform manner which in many cases produces undesirable results.

Block Diagram and Flow Chart

Run Length Encoding

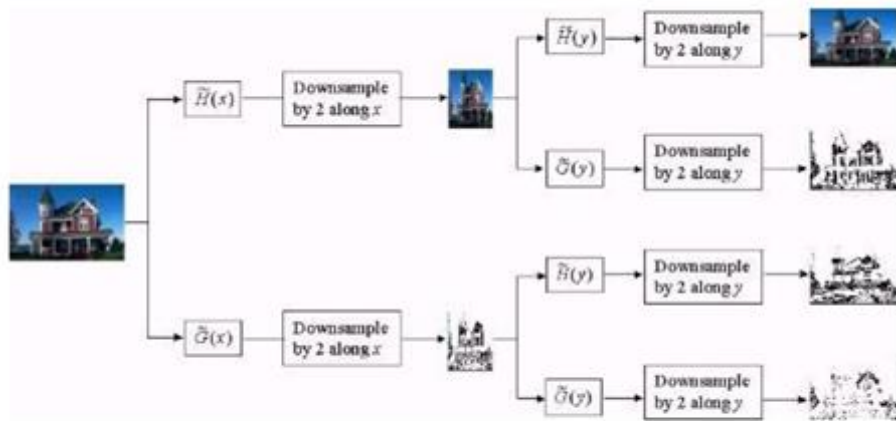


Input and Output

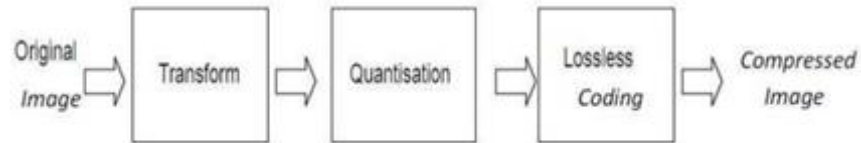


DISCRETE WAVELET TRANSFORM (HAAR TRANSFORM)

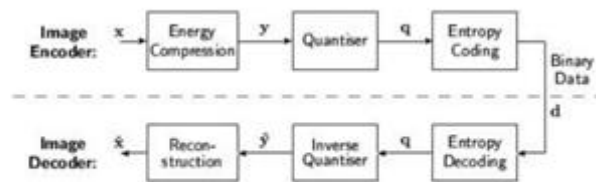
METHOD:



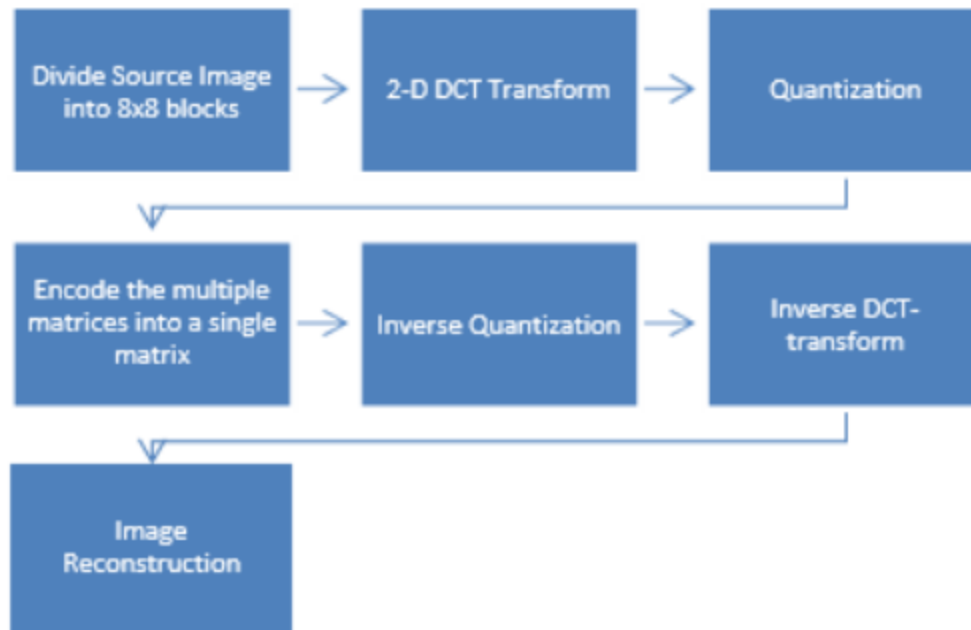
(a) Basic Block Diagram of Image Compression



(b) Image Compression Model



(c) Block Diagram of Encoder and Decoder



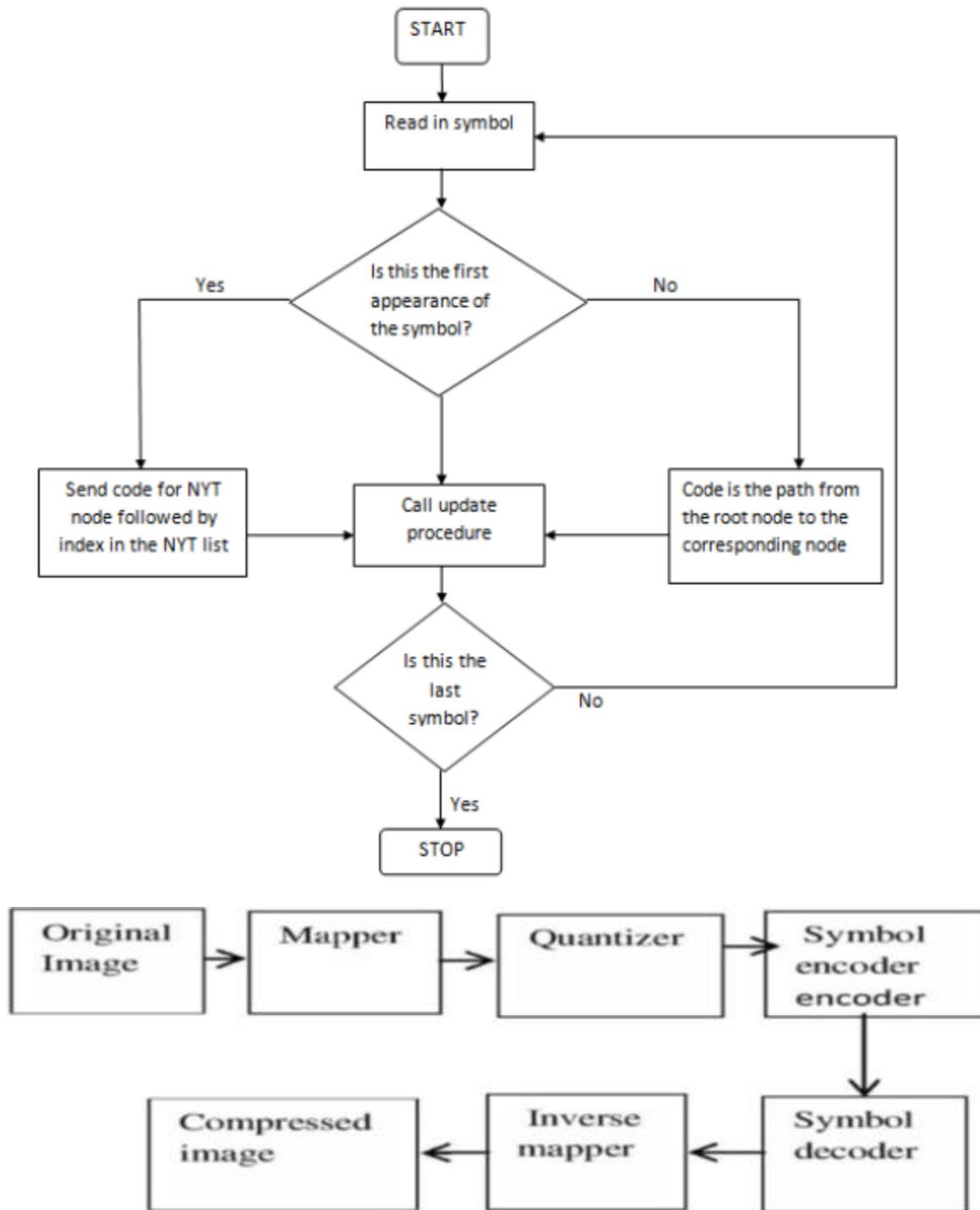
Input and Output



2-level reconstructed image



Adaptive Huffman Compression:



Input and Output:



Comparison:

S.NO	METHOD	COMPRESSED SIZE
1.	ORIGINAL	106 KB
2.	DWT	11.3 KB
3.	HUFFMAN	11 KB
4.	RLE	3.15 KB

It provides sufficient high compression ratios with no appreciable degradation of image quality. The effectiveness and robustness of this approach have been justified using a set of real images. To demonstrate the performance of the proposed method, a comparison between the proposed technique and other common compression techniques has been revealed. From the experimental results, it is evident that the proposed compression technique gives better performance compared to other traditional techniques. Wavelets are better suited to time-limited data and wavelet-based compression technique maintains better image quality by reducing errors.