

Signal And Systems Project

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For this semester's final project we are going to solve a real world problem. We talked about DCT (discrete cosine transform) and how to exploit It to compress a signal. Every image is a 2D signal and we can use DCT for image compression, in fact JPEG images are compressed with DCT. This project is composed of a obligatory main part and a optional part for extra points.

1 Main Task

For the main task you are expected to code a program capable of

- read a black and white image
- transform it into discrete cosine space (compute the coefficients)
- discard unimportant coefficients using quantization
- reconstruct the image using coefficients (the output image should be slightly different from the original image)

2 Extra

Try to compress further quantized coefficients using Huffman coding.