

# ASSIGNMENT - 3

## REPORT

### Part2: Denoising

Haar Denoising:

PSNR for Hard Thresholding = 22.2817149295

PSNR for Soft Thresholding = 23.7242571272

Pyramid Denoising:

PSNR for Hard Thresholding = 22.1093425029

PSNR for Soft THresholding = 23.1349682922

From the above results, we figure out that soft thresholding works best in both cases. The performance of hard thresholding is comparable in both cases whereas soft in pyramid works best of all.

### Part3: Compression

Photographic image:

K = 20

PSNR = 30.7058855467

Binary File Size = 134.6Kb

K = 30

PSNR = 27.9512516985

Binary File Size = 90 Kb

K = 40

PSNR = 25.3088779246

Binary File Size = 54.4Kb

Constant color image:

K = 20

PSNR = 39.564084703

Binary File Size = 3.5kb

K = 30

PSNR = 37.9321022018

Binary File Size = 3.2kb

K = 40

PSNR = 35.3380042215

Binary File Size = 2.9kb

As we can see the difference between image size value at 20, 30 and 30, 40 are almost the same so we can easily infer that the image size is directly proportional to the percentage of bits ignored.

Further, we can see that the technique is highly effective to compress images with large regions of constant color as the image size decrease drastically.