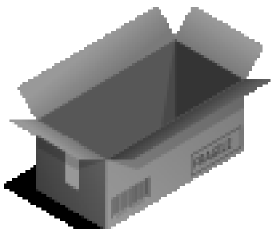
Results

I have used my program on 4 images, 3 being the ones given and one of my own for debugging.

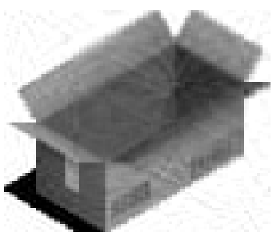
The original images can be found in the `figs/imgs` folder, while the output images are in the `figs/outs` folder.

Image 1 (test.png)

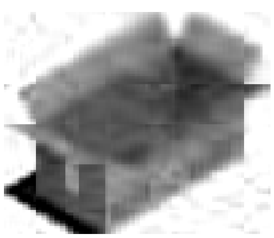
Original Image:



Compressed Image ($k = 20$):



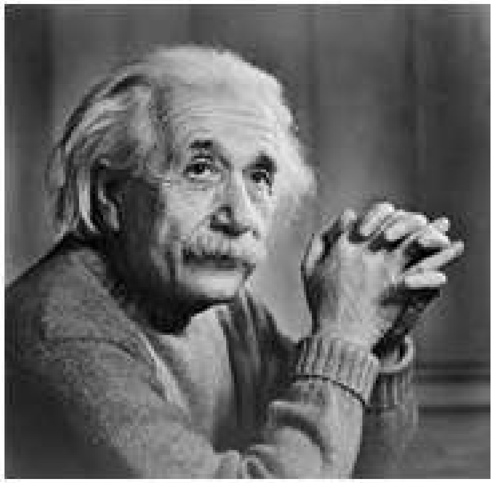
Compressed Image ($k = 10$):



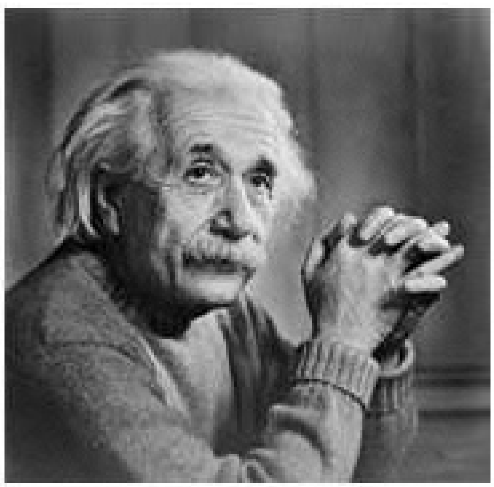
Here I have used the value $k = 20$ and $k = 10$. It is clear that using a lower value of k gives us a higher lossy compression. Using $k \geq 80$ results in a compressed image that is very similar to the original image, as this is a `100x80` image.

Image 2 (einstein.png)

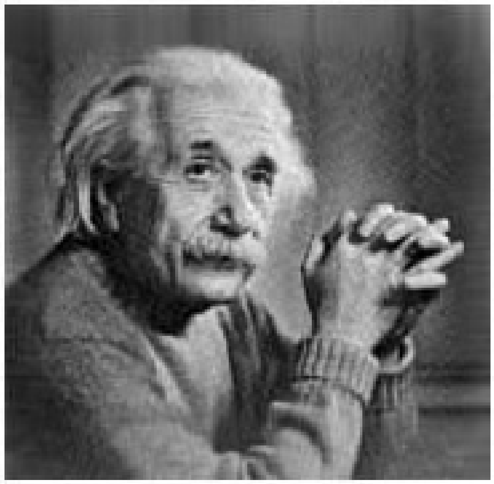
Original Image:



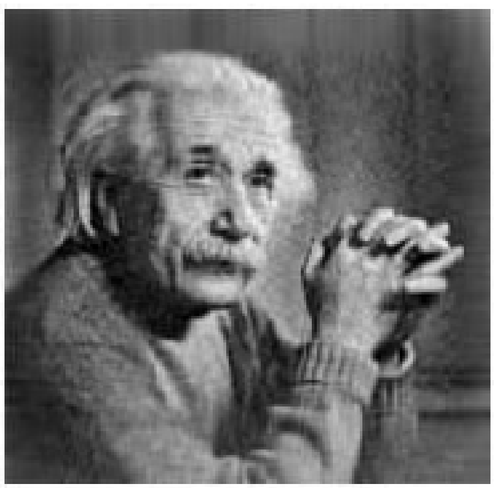
Compressed Image ($k = 80$):



Compressed Image ($k = 40$):



Compressed Image ($k = 30$):



Compressed Image ($k = 20$):

Compressed Image ($k = 10$):

Image 3 (globe.png)

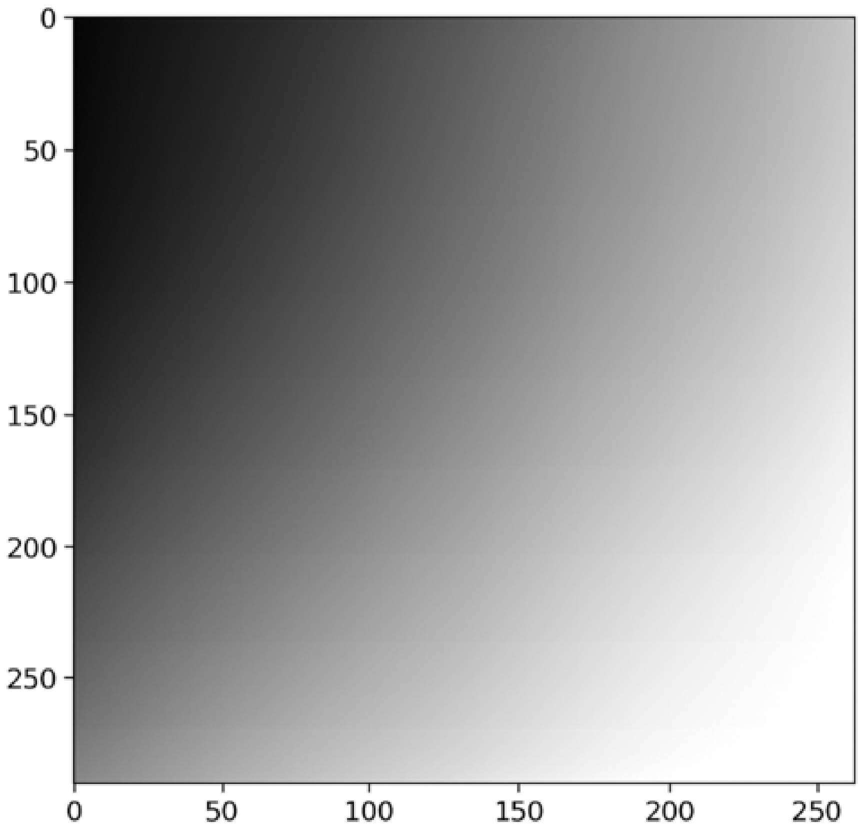
Original Image:

Compressed Image ($k = 20$):

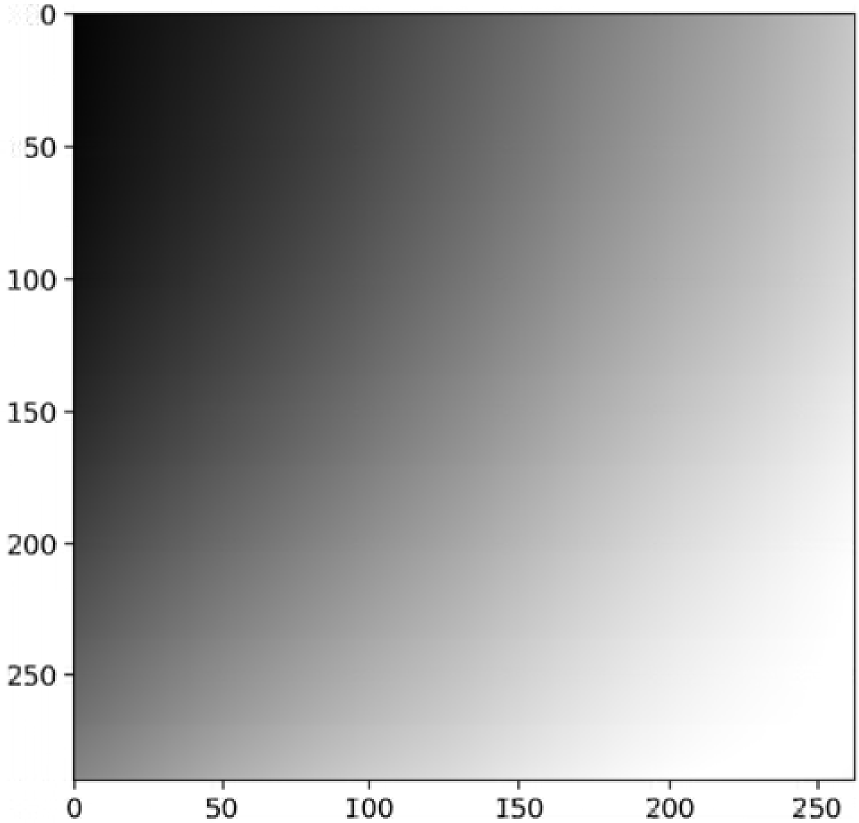
Compressed Image ($k = 10$):

Image 4 (greyscale.png)

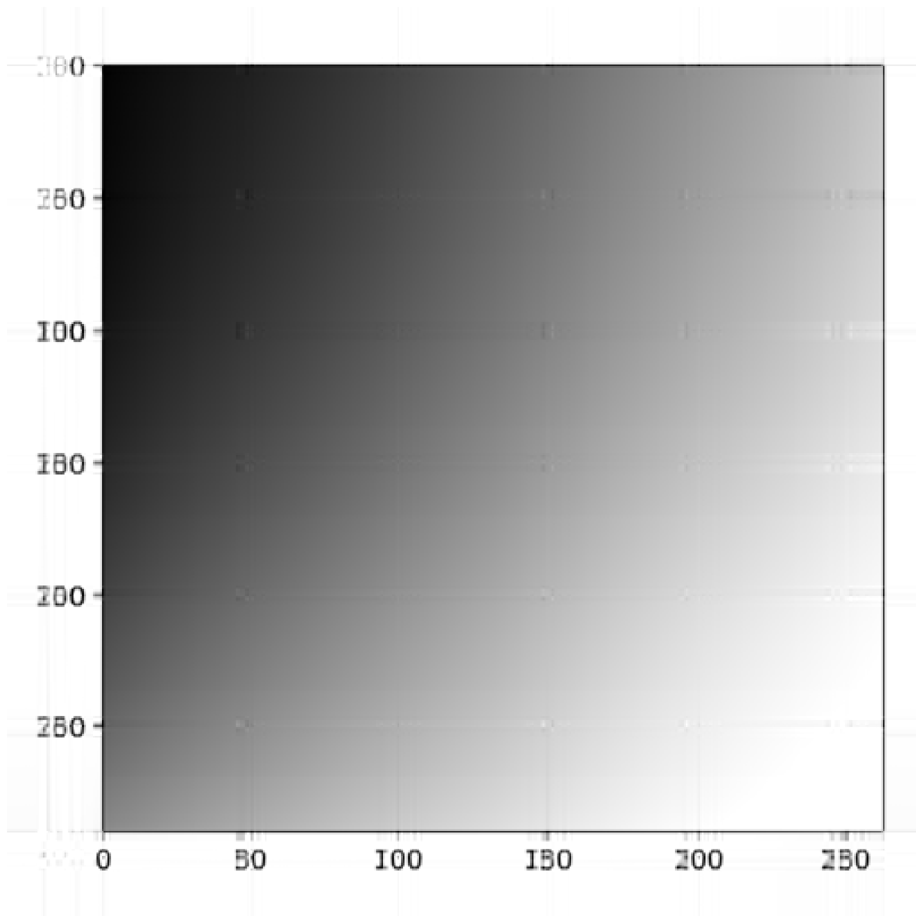
Original Image:



Compressed Image ($k = 20$):



Compressed Image ($k = 10$):



Observations

Clearly, there is an inverse relationship between the value of k and the amount of compression. A lower value of k results in a higher compression, but also a loss in image quality.