

Exercise 1.

Morphology. Procedure followed:

- Dilate
- Compute connected components
- Extract connected components using logical AND.

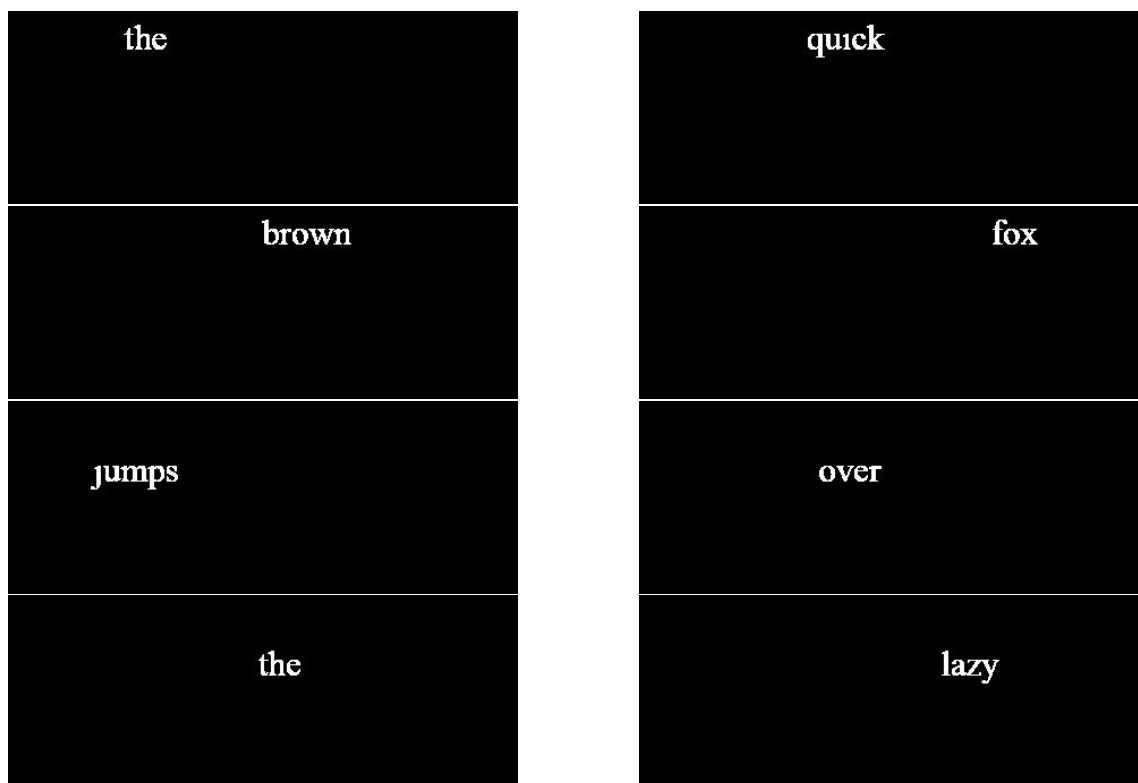


FIGURE 1. Sample separated words. Rest included in the code folder

Exercise 2.

Unitary Transforms. Solutions in Figures 2 to 5

Exercise 3.

Pseudo-Inverse Restoration. Solution in Figure 6

Exercise 4.

Hough lines detection. Solution in Figure 7

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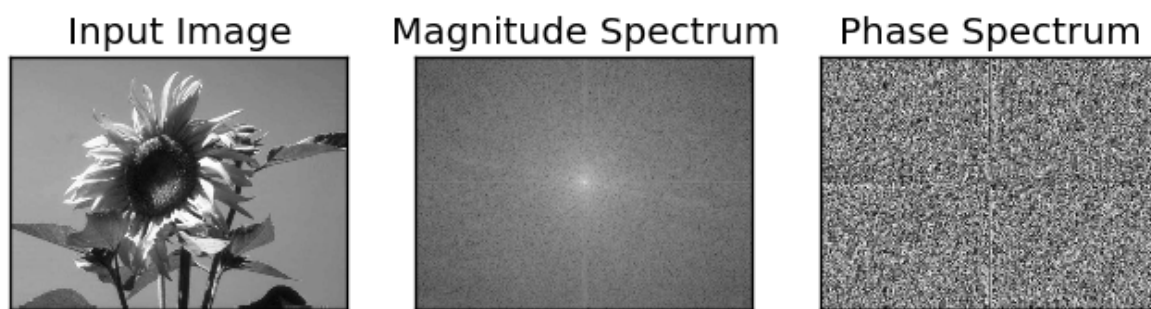


FIGURE 2. DFT

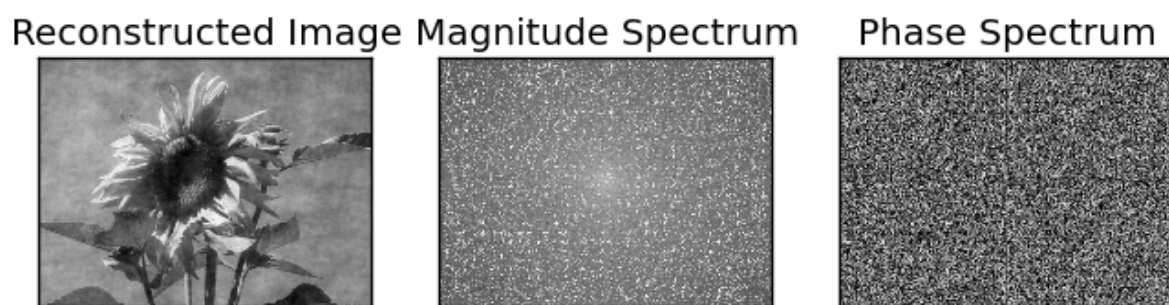


FIGURE 3. Filtered DFT

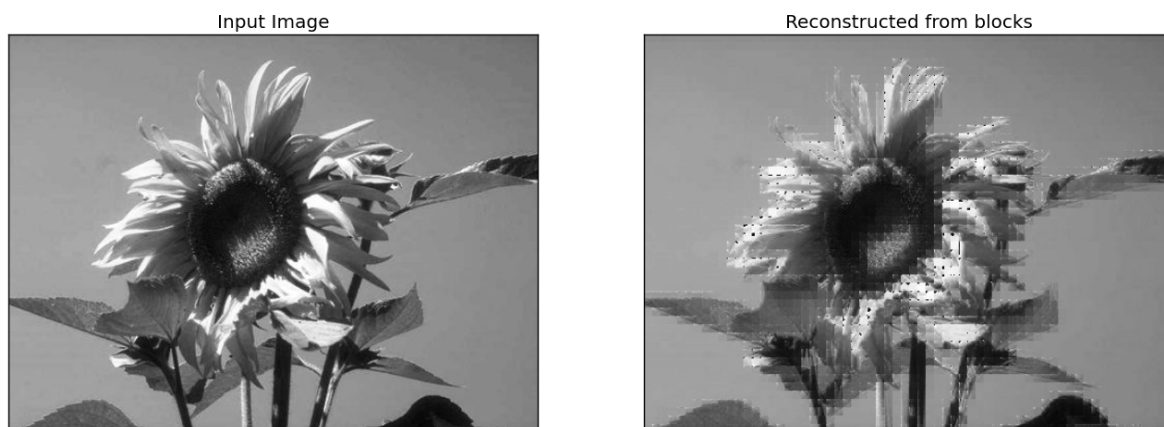


FIGURE 4. DCT

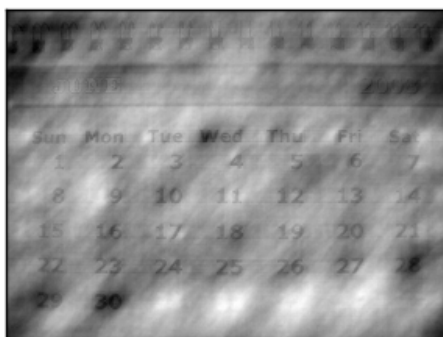
Input 1



Input 2



Modified 1



Modified 2



FIGURE 5. Phase-Magnitude swap

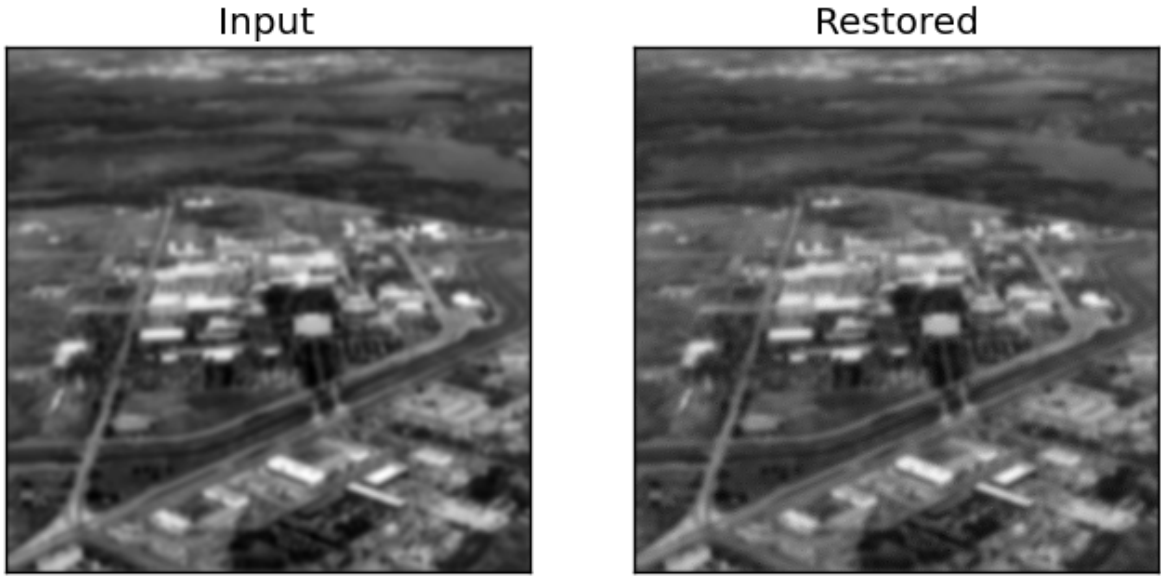


FIGURE 6. Pseudo-Inverse Restoration. $\epsilon = 0.001$

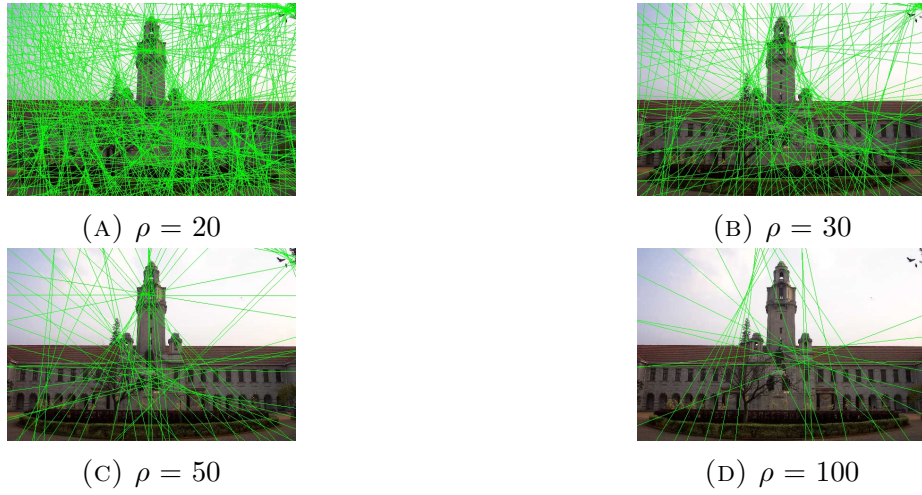


FIGURE 7. Hough line transform with different resolution of accumulator bins