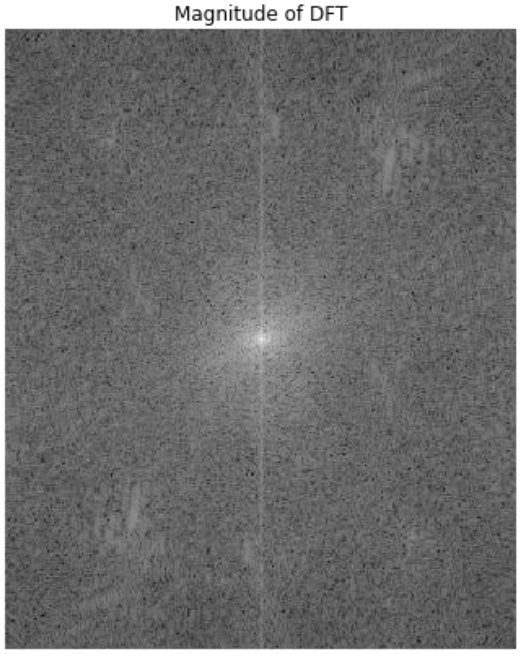
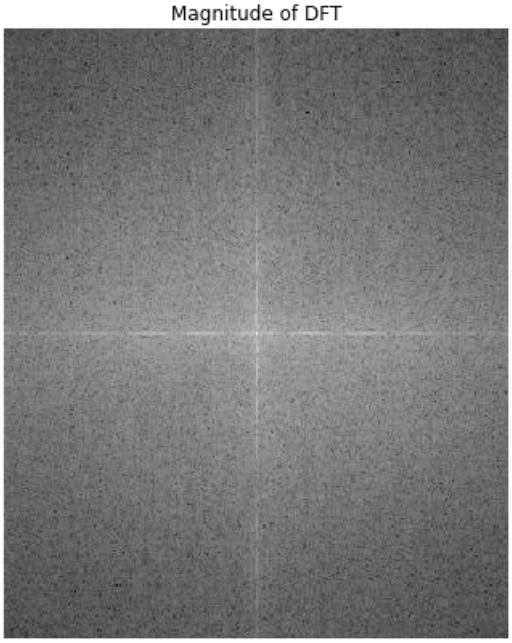
Kumari Rashmi Lab7 Report
EE20S051

LAB 7 Report(DFT, Magnitude-Phase Dominance property tested)

1. Have implemented 2D DFT, named **DFT_2Dim using FFT of 1D**
2. Have Calculated the DFT of I1(fourier.png) and DFT of I2(fourier_transform.png) using above method
3. Have calculated magnitude only and phase only of both images I1 and I2
4. Then crossed the phase of I2 with magnitude of I1 in order to get I3
5. Crossed the phase of I1 with magnitude of I2 in order to get I4
6. Have got below two images as the result of the experiment 2

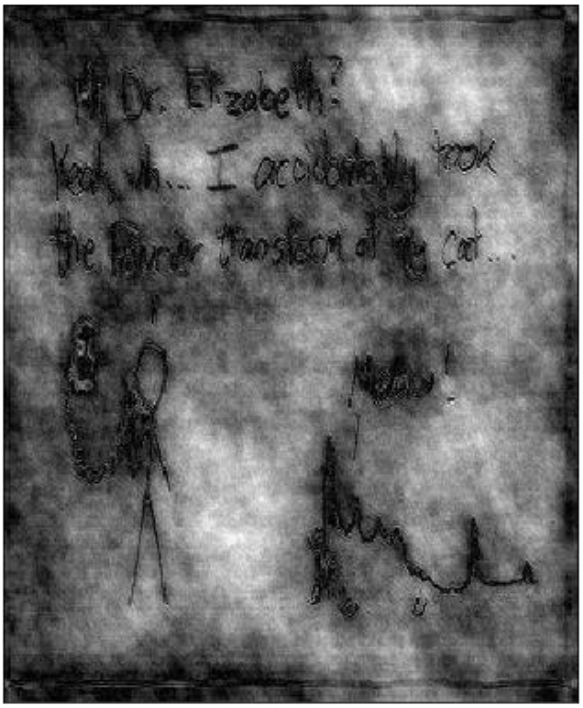
Fourier Transform of Images:





Experiment 2 result: After changing the phases of DFT

$F_3(k,l) = |F_1(k,l)|e^{j\Phi_2(k,l)}$



$F_4(k,l) = |F_2(k,l)|e^{j\Phi_1(k,l)}$

Observations:

- On calculating the DFTs for two images, swapping their magnitudes and phases, and then taking their IDFT, the resulting images look much closer to the image whose phase component they contain compared to the magnitude component.