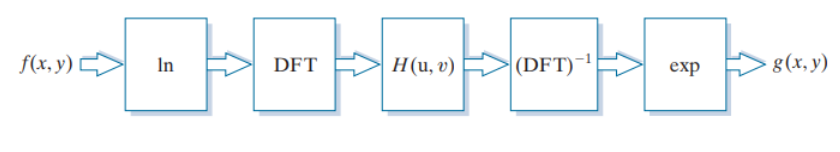
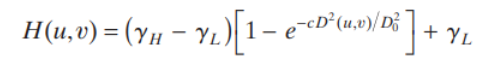
**Class Lab 7**

Use two images for each operation to do the following operations and write down their advantages and disadvantages and explain your results:

1. **Homomorphic Filter (bridge, goldhill):**

**Algorithm:**





**Results (including pictures):**

Result of processing “goldhill.pgm”:

Source Image:



Result after homomorphic Filter:



Result of processing “Bridge.pgm”:

Source Image:



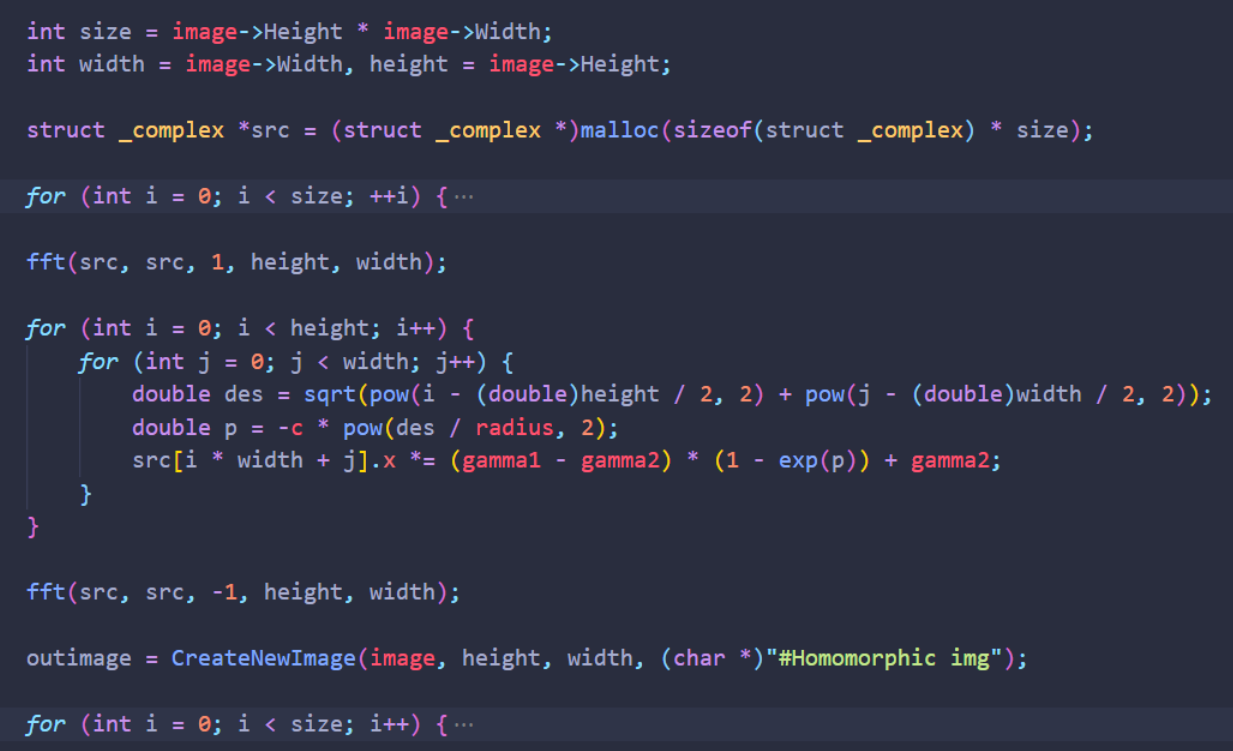
Result after homomorphic Filter:



**Discussion:**

A good deal of control can be gained over the illumination and reflectance components with a homomorphic filter. This control requires specification of a filter transfer function that affects the low- and high-frequency components of the Fourier transform in different, controllable ways. The net result is simultaneous dynamic range compression and contrast enhancement.

**Codes:**



1. **Sinusoidal Noise (Lena):**

**Algorithm:**

**Results (including pictures):**

Result of processing “lena.pgm”:

Source Image:



Result after add noise:



**Codes:**



1. **Ideal Notch Band Reject Filter (lena):**

**Algorithm:**

**Results (including pictures):**

Result of processing “lena.pgm”:

Source Image:



Result after IDealNotchBandreject Filter:



**Discussion:**

Most of the sinusoidal periodic noise can be removed by using an ideal notch filter

**Codes:**



**Rectangle Notch Band reject Filter (lena,** cameraWithNoise

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48. **):**

**Algorithm:**

**Results (including pictures):**

Result of processing “lena.pgm”:

Source Image:



Result after IDealNotchBandreject Filter:



**Discussion:**

Most of the sinusoidal periodic noise can be removed by using an ideal notch filter

**Codes:**

