

## CSL 461 Assignment 1 Report

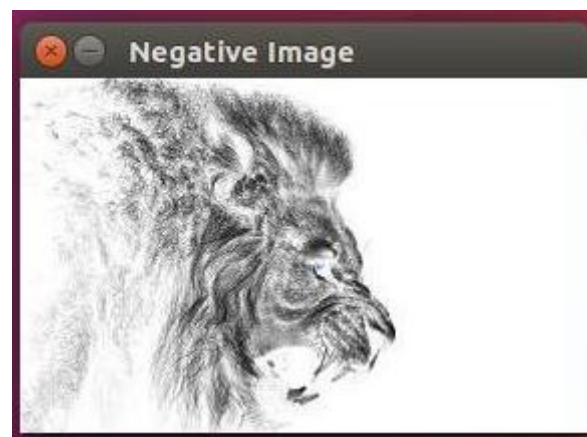
### **Objective:**

Implement the following image enhancement operations/methods:

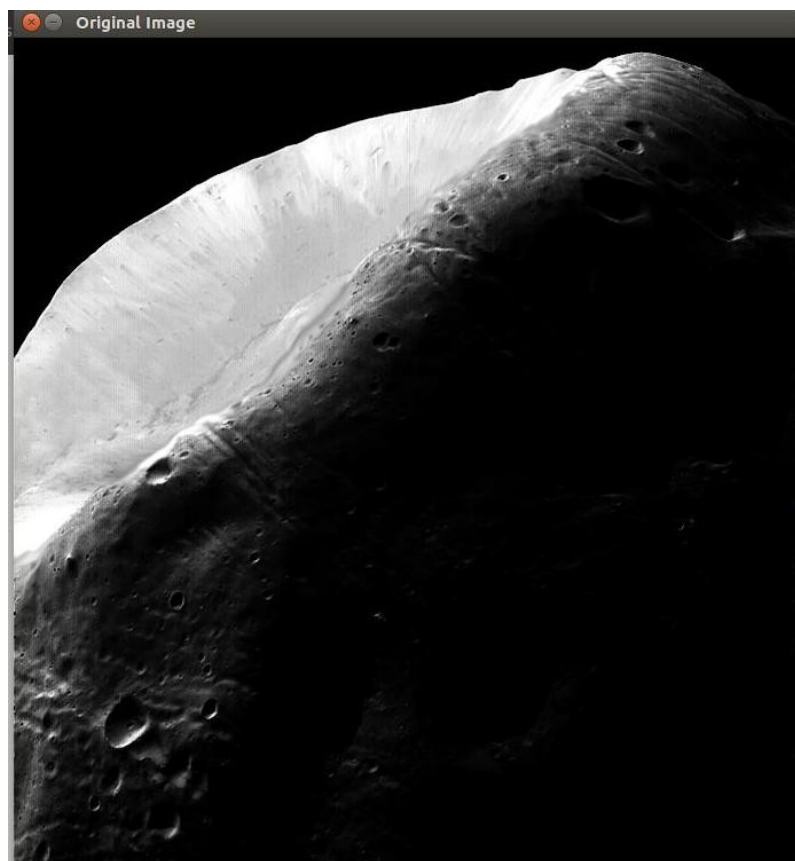
- (1) Image Resize - (Not Implemented)
- (2) Affine Transformations - (Not Implemented)
- (3) Image negatives
- (4) Log transformations
- (5) Power-law/Gamma Transformations
- (6) Piecewise linear transformation functions
- (7) Bitplane slicing
- (8) Image reconstruction given some tie points - (Not Implemented)
- (9) Histogram equalization
- (10) Adaptive histogram equalization
- (11) Histogram matching

### **Results:**

- (1) Negative Filter:



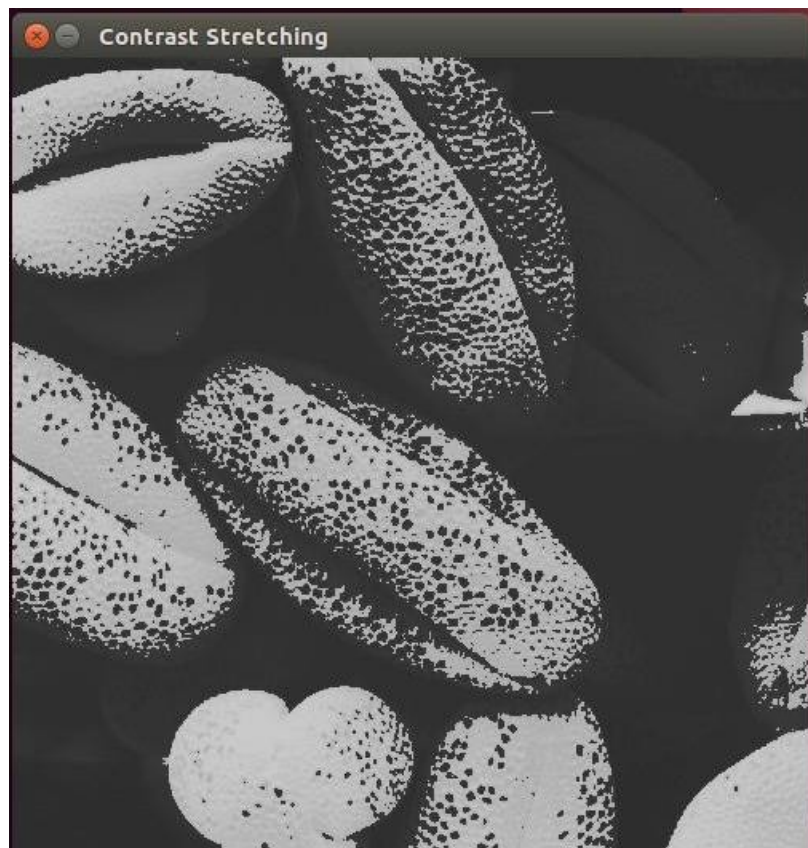
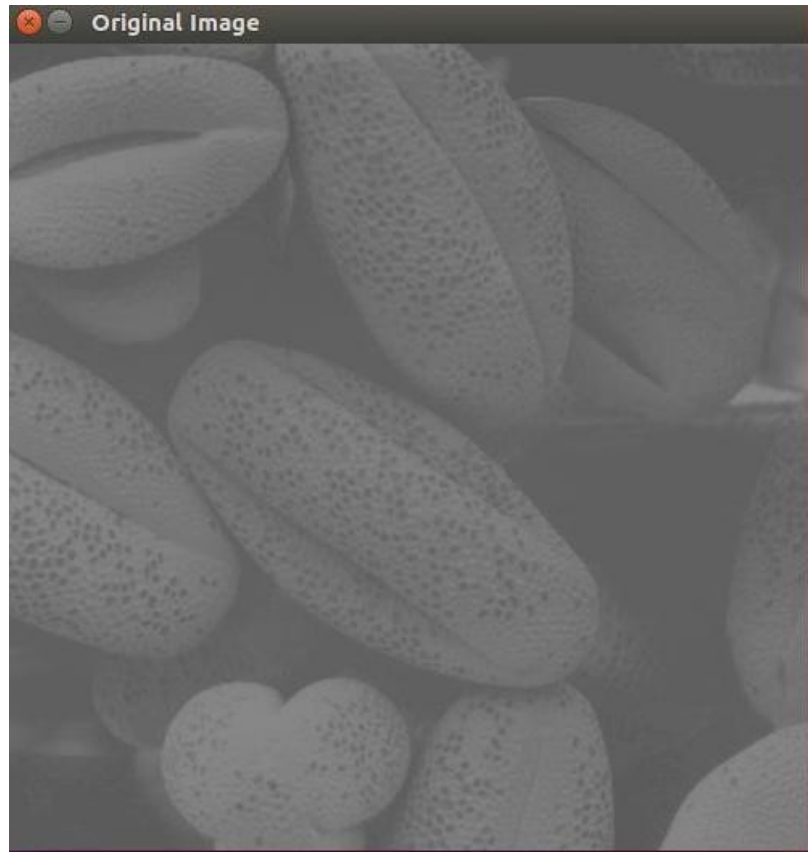
(2) Logarithmic Transformation:



(3) Gamma Transformation:

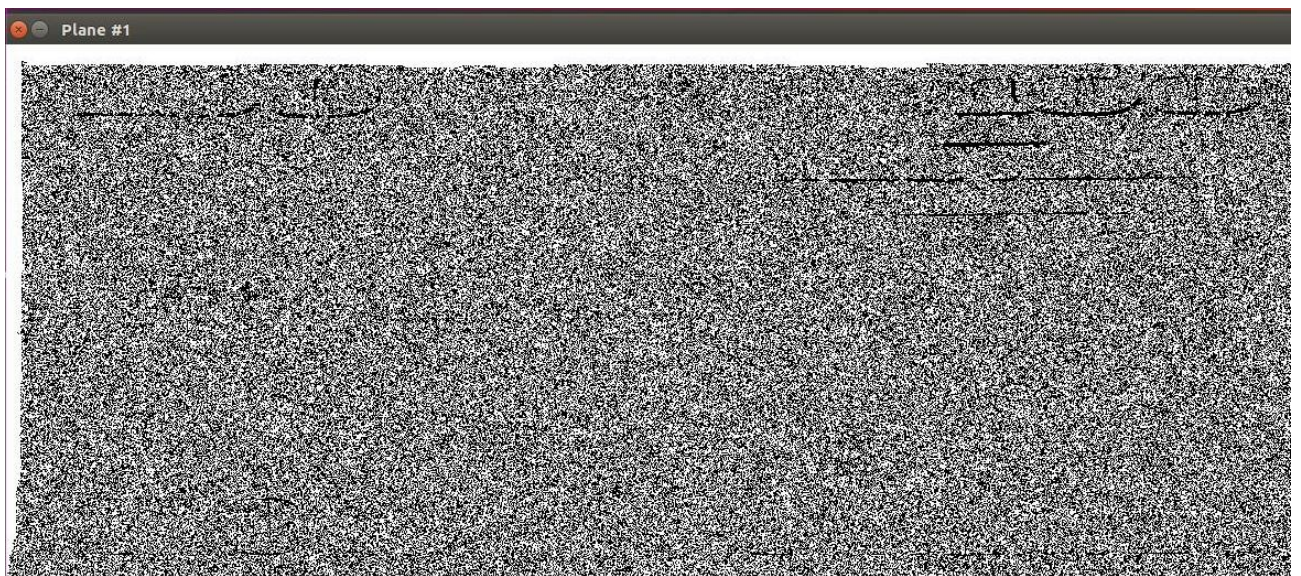
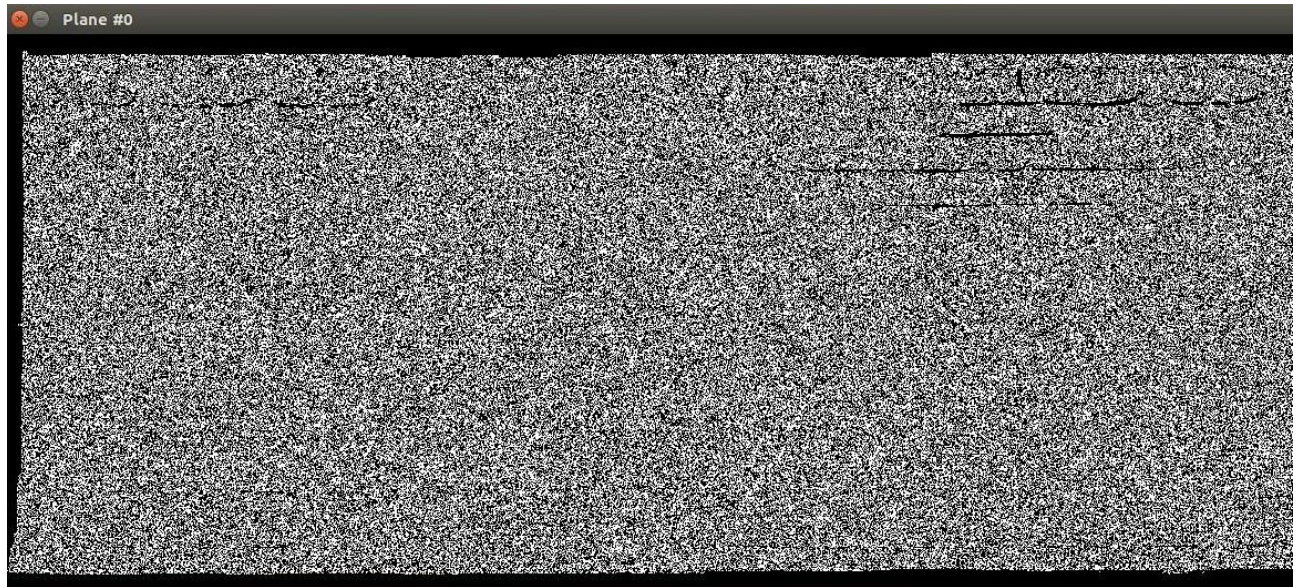


(4) Piecewise Linear Transformation/Contrast Stretching:

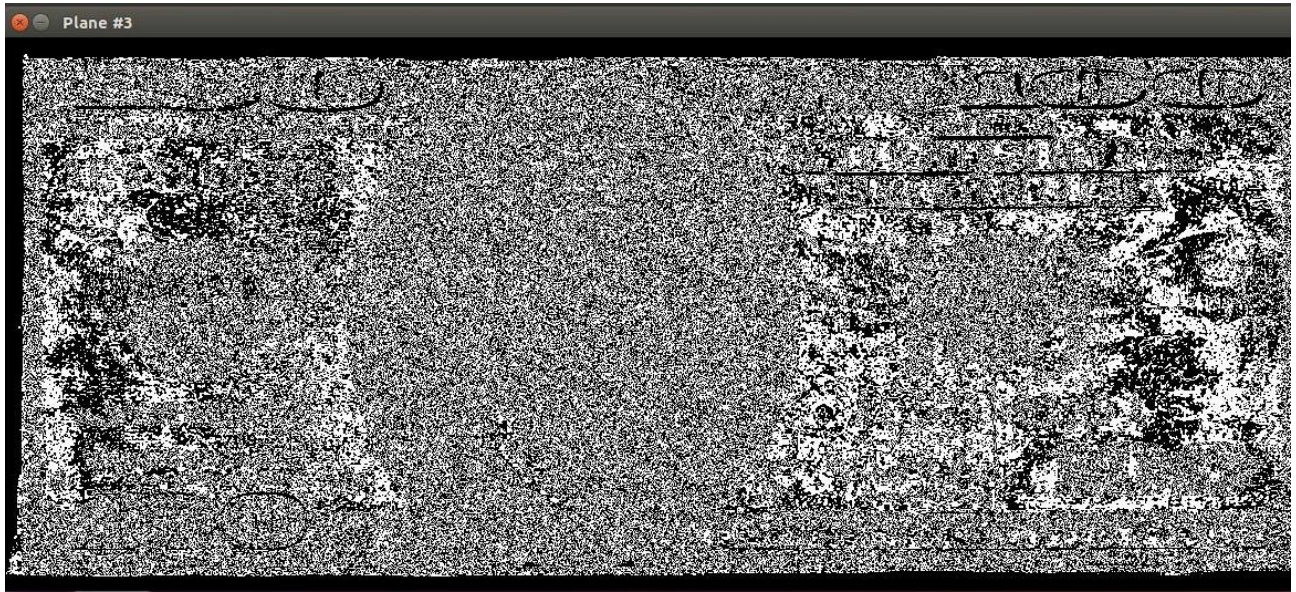
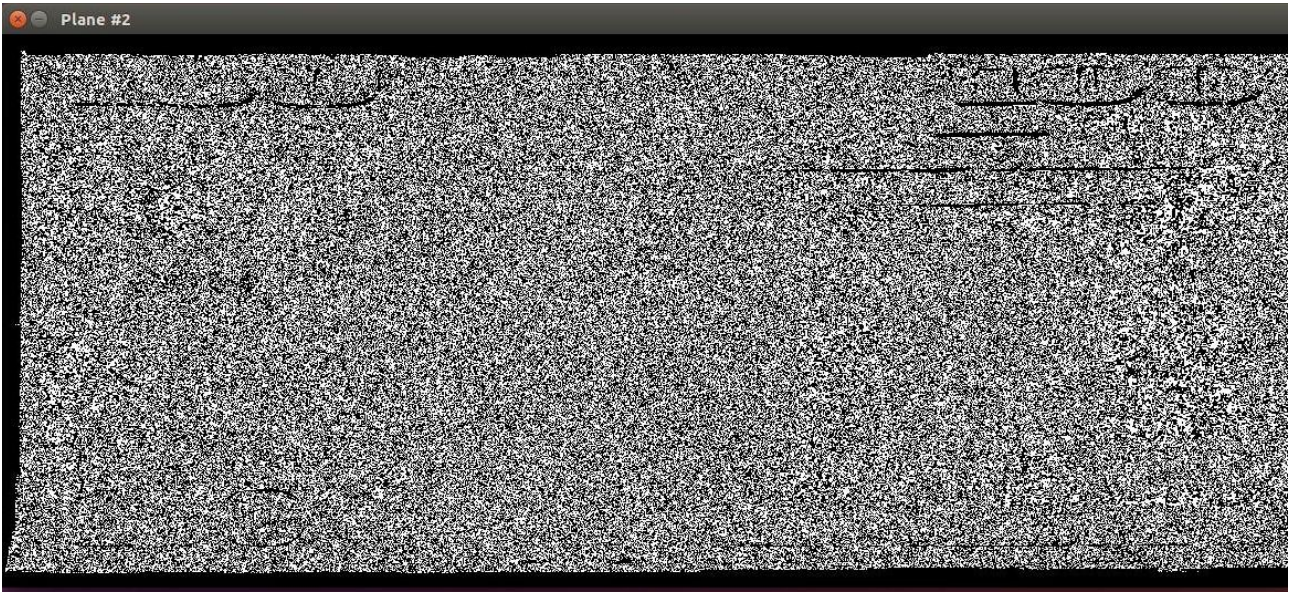




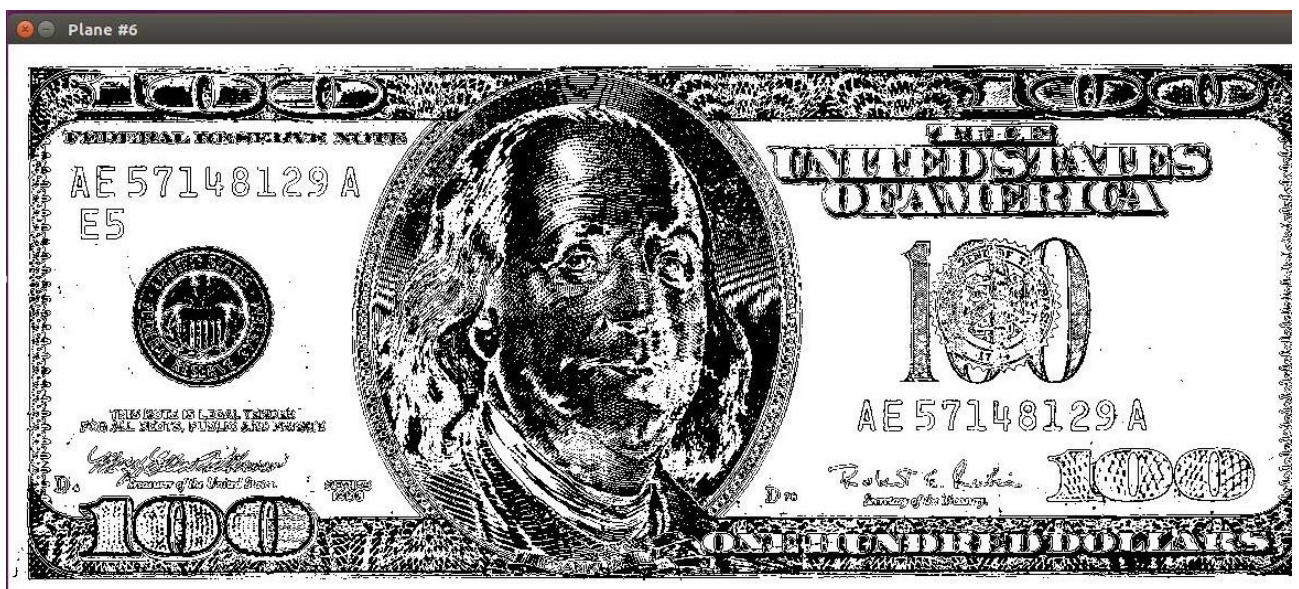
(5) Bit Plane Slicing:













(6) Histogram Equilisation:





(7) Histogram Matching:



(8) Adaptive Histogram Equilisation:



**References:**

- (1) <http://opencv-cpp.blogspot.in>
- (2) <https://www.opencv-srf.com/2017/11/load-and-display-image.html>
- (3) <http://www.aishack.in/tutorials/opencv/>
- (4) [https://docs.opencv.org/3.4.0/d7/da8/tutorial\\_table\\_of\\_content\\_imgproc.html](https://docs.opencv.org/3.4.0/d7/da8/tutorial_table_of_content_imgproc.html)
- (5) <https://stackoverflow.com/>