ASSIGNMENT - 0

RESIZE USING REPLICATION :

- Error is measured with sqrt(sumsqr(R-J));
- Here R is obtained using the imresize() method in matlab and J is calculated using algorithm.
- For a scale factor of 1.5 in both x and y the error obtained = 1892.3 units.

RESIZE USING BILINEAR INTERPOLATION :

- For a scale factor of 1.5 in both x and y the error obtained = 1990.1 units.

ASSIGNMENT - 1

HISTOGRAM MATCHING :

- In this technique, first the RGB image is converted to LAB space.
- The luminance values of LAB space and the intensity values of target image are scaled down to [0,1].
- Histogram of target image is computed with 256 bins and values ranging between [0,1].
- Now perform histogram equalization of luminance values of source with the bins.
- Now Histogram matching is done to the luminance values with the histogram obtained from equalizing.
- Now for each intensity value along the scan line we compare find the nearest matching luminance value and transfer the A,B values of that luminance.
- Finally we convert the target LAB to RGB.

LUMINANCE REMAPPING :

- In this technique instead of using histograms we compute the means and variances of the source and target images, to remap the luminance values of source with that of target.
- Now the intensity values of target is compared with that in source to find the right match and then the A, B values are copied from it.

OBSERVATIONS :

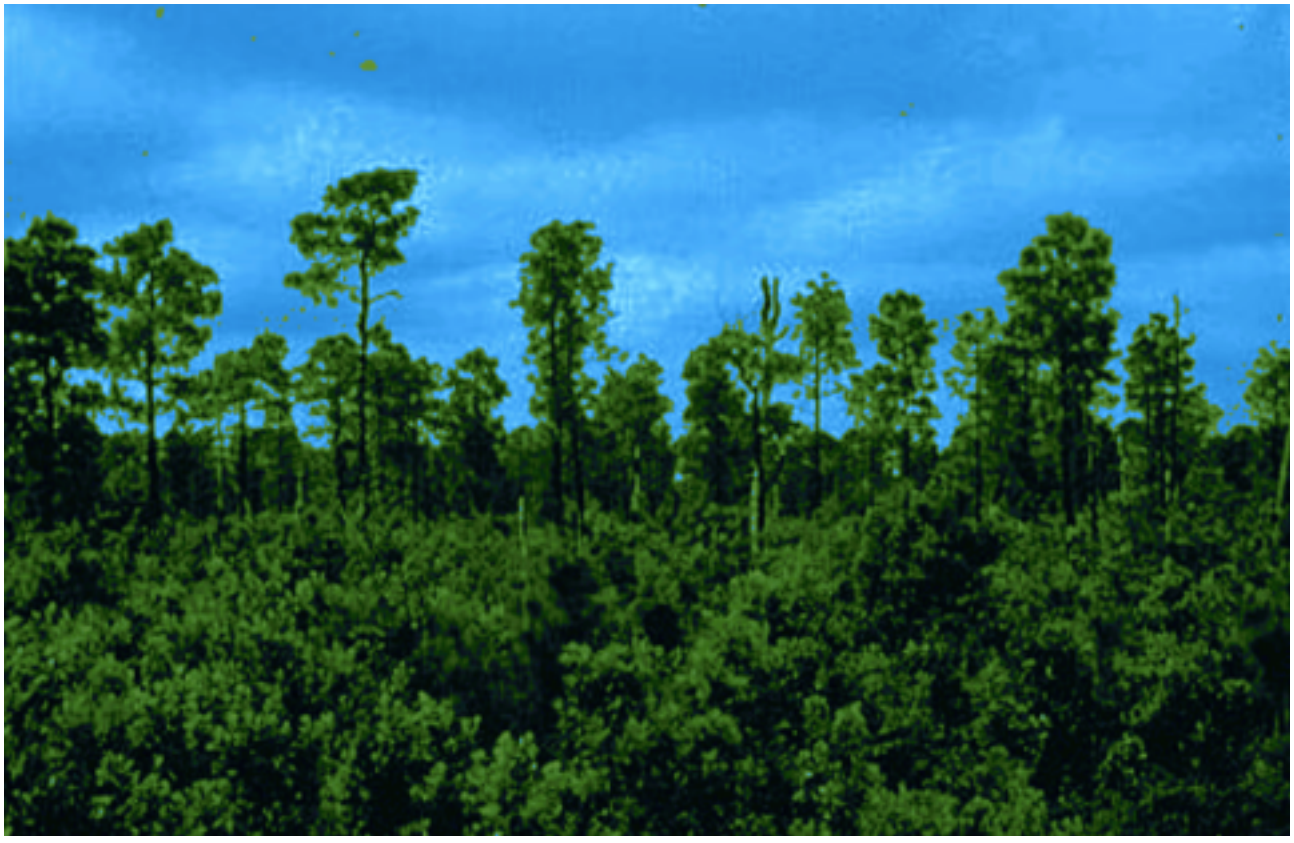
- The luminance remapping gives better results than histogram matching because each intensity value is compared with the best matched luminance among the source but in the latter case, we only check for the nearest match and also it depends on the number of bins of histogram = 64 or 256.

RESULTS :

SOURCE IMAGE

TARGET IMAGE:

HISTOGRAM MATCHING:



LUMINANCE REMAPPING:

SWATCHES :

XDOG

- In this implementation we develop a function where we calculate the threshold for xDoG edge.
- Here DOG is calculated and the mask is convolved with the image.
- Generally an edge is detected at zero crossings in DoG but in our xDoG we compute threshold as the average of the mean and median of the values in the image and that lies between -1 and 0.
- Few results obtained are :