NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL

DEPARTMENT OF INFORMATION TECHNOLOGY

IT 301 Parallel Computing LAB 6

16th September 2020

Faculty: Dr. Geetha V and Mrs. Thanmayee

Write a parallel program (using Openmp) to convert a color image to grayscale and YIQ. The RGB values (in decimal) are already extracted and stored in "KittenRGB.txt" file. Read the input values from the file.

a. Compute the grayscale conversion using luminosity method, that is, **G=R*0.21+G*0.72+B*0.07.**

b. Here is the RGB -> YIQ conversion:

Y = 0.299*R + 0.587*G + 0.114*B

I = 0.596*R – 0.275*G – 0.321*B

Q = 0.212*R – 0.523*G + 0.311*B

Analysis: Compare the time taken for the computation with Single thread and Multiple threads(2,4,8,16) . Prove that parallel computation is faster than serial.

NOTE: The RGB.txt file has RGB values in single line and not matrix format.

Ex: R G B R G B R G B …

The image used for extracting RGB values is 300 * 300 pixels jpg image.