**Image Processing & Computer Vision**

**Assignment 01**

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1.4.

The output images produced through an image processing are either displayed to a human viewer or become a new input of other image analysis algorithm.

1.8.

Computer graphic is about how to produce images from a 3D model, however, computer vision is about how to get a model from images.

1.16

( 38,52 ) → i = 52\*640+38 = 33318

( 592,241 ) → i = 241\*640+592 = 154832

( 33,0 ) → i =0\*641+33 = 33

i = 8092 → mod( 8092,640 ) = 412 \* (8092-412) / 640 = 12 → ( 412,12 )

i = 24061 → mod( 24061,640 ) = 381\*(24061+281) / 640 = 37 → ( 381,37 )

i = 38190 → mod( 38190,640) = 430 \* (38190+430) / 640 = 59 → ( 430,59 )

1.17

Need to interchange x and y and replace width with height:

i = x \* height +y

y = mod ( i , height ) = i - x \* height

x = floor ( i / height )

1.18

a) The image is described in interleaved format as follows:

So, the RGB values at point (1,1) is (233, 161, 25). Which is red25, green161, blue233.

b) The image is described in planar format as follows :

red : green : blue :

So the RGB values at ( 0,1 ) are ( 31, 255, 161 ), which is red161, green255, blue31.

The Matlab file and test image are uploaded via canvas.

Please call the function by [ flipim(imread('name of image'))]