Homework 1: MATLAB Starter

CS 639, Fall 2020

Due on September 17

Total points: 5

The goal of this assignment is to get you started with MATLAB for image processing and computer vision. The accompanying MATLAB script runHw1.m contains instructions and partially complete code to illustrate some of the basic features of MATLAB. Your tasks are to fill in the incomplete code, and to generate the results by executing the script. Include both the completed script and the outputs in your submission.

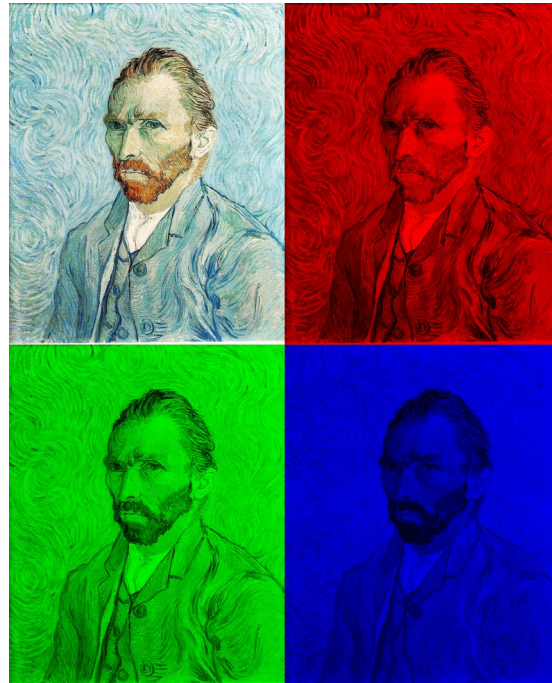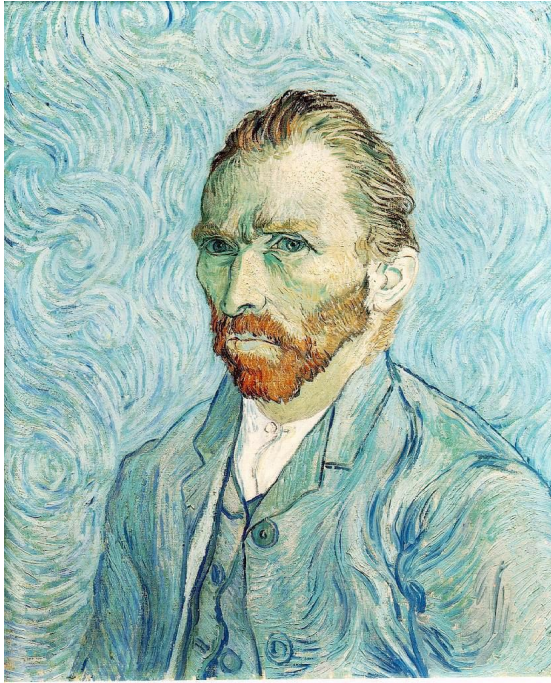Please follow the homework guidelines in your submission.

Walkthrough 1: (0 points)

Go through this brief introduction to MATLAB. Have fun experimenting with different commands. Additional tutorials can be found here: Documentation Center, Tutorials. You are not required to submit any code for this walkthrough.

Walkthrough 2: (2 points)

Fill in the missing parts in hw1_walkthrough2.m to read an image and generate a 2 x 2 collage as shown below (*note: the actual output should be twice the height and twice the width of the input image*). The four patches of the collage are the original image and its red, green, and blue channels. Submit both the completed script and the output.

Source: Wikipedia

(File:SelbstPortrait VG2.jpg)

Walkthrough 3: (3 points)

Complete `hw1_walkthrough3.m` to superimpose the "I Love NY" logo on top of a Manhattan scene.

Image Processing Toolbox functions permitted: im2bw, imresize

Source: Wikipedia

Source: Flickr

Image by Ruben Moreno Montoliu

Output