FOSSEE Image Processing / Computer Vision Toolbox Evaluation

Thank you for your interest in FOSSEE Toolbox project. You have expressed interest in the Image Processing / Computer Vision Toolbox. Before you start working on the toolbox, we would like to assess your coding and testing skills. Please read the details mentioned below.

There are two sections in this test. Both sections are compulsory.

Section- I

Solve both the problems given below using the images provided in **images** folder-

Image 1- oscarSelfie.jpg
Image 2- jellyfish.jpg

Problem 1

- Detect all the faces in Image 1
- Detect the eyes of Ellen DeGeneres
- Get the RGB value at the location of the centroid of Ellen's eyes
- Display the RGB value on the console

Problem 2

- Detect all the jellyfishes in Image 2
- Display the image and mark the centroid of each jellyfish with a red cross.

The steps you would follow are-

1. Install OpenCV 2.4.9 or later versions.

2. Read about OpenCV. Go through the tutorials.
http://docs.opencv.org/doc/

3. Solve both the problems using OpenCV and C++. Using brute force method for any of the steps will not get you any points.

4. Add appropriate comments throughout the code. Place header comments that include your name and other details.Cite any sources you may have used. This step is compulsory. **Plagiarism of any sort will not be tolerated and your code will be summarily rejected.**

You cannot use any other tool/library besides OpenCV.

Section-II

Choose any two Matlab functions from the list given below and develop equivalent Scilab functions-

improfile
fwind2
imregister

The steps you would follow are-
1. Install Scilab 5.5.2.

2. Learn to write Scilab functions
http://spoken-tutorial.org/tutorial-search/?search_foss=Scilab&search_language=English

2. Understand what the Matlab function does
http://in.mathworks.com/help/images/functionlist.html

3. Implement the same in Scilab. You may use any existing Scilab functions.

4. Add appropriate comments throughout the code. Place header comments that include your name, function, input arguments, output arguments details. Include an example in the comment section. Cite any sources you may have used. This step is compulsory. **Plagiarism of any sort will not be tolerated and your code will be summarily rejected.**

You cannot use any other tool/library besides Scilab.

Code Submission

1. Create a **private Bitbucket** repo. The name of the repo should be- (your) **First name Last name- Image Processing Toolbox**. Add **fosseeToolbox** as a collaborator to your private repo. Any repo with public access will be rejected.
2. Create two folders in your repo with the name- **Section I** and **Section II**.
3. Push section I code to the folder Section I. Add a readme file. The readme file should explain how to execute the code. Please give all compiler and loader flags. The readme file should be exhaustive.
4. Push section II code to the folder Section II. Add a readme file. The readme file should explain how to execute the code with examples for all the functions. The readme file should be exhaustive.
5. Fill the form and submit your Bitbucket repo details here- https://goo.gl/forms/esFZEHwpVAZRxv9Q2