# ICE3111 – Computer Vision – Lab 3 – questionnaire

(worth 30% of Assignment 1)

Deadline: 27/10/2022 at 23:59

* Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_
* Your user ID: \_\_\_\_\_\_\_\_\_\_\_\_\_

**NOTE: When you add a listing in a report, you must format it properly!** - Use a monotype font so that it is easily readable (e.g. Lucida Sans Console or Courier New). This means that all letters take up the same space on the page; - Indent the code; and - Use (colour) syntax highlighting. - Show line numbers (optional)

## 1. Preliminaries: Install OpenCV if needed

Nothing to report here.

## Choose your programming language

* Why did you choose Python or C/C++? (I won’t mark this answer, I am just gathering feedback from you. Any answer is valid)

## 2. and 3 - Load and display an image [9 marks in total]

* Add your source code below [5 marks]
* **DO NOT FORGET TO ADD A PREAMBLE** [1 mark]. It must describe the program:
  1. the author of the program (you),
  2. the date,
  3. the purpose of the file (inc. the command line options),
  4. the todo-list if anything is missing.
* Add evidence of testing using three different images [3 marks].
  + Hint: just add the screenshots of your OpenCV window.

## 4. Convert a RGB image in a greyscale image [8 marks in total]

* Add your source code below [4 marks]
* **DO NOT FORGET TO ADD A PREAMBLE** [1 mark].
* Add evidence of testing using three different images [3 marks].
  + Hint: just add the screenshots of your OpenCV window.

## 5. Find the smallest and largest pixel values in an image [14 marks in total]

* Add a screenshot of your test image created using ImageJ after the division [2 marks]
* Add a screenshot of its histogram [1 mark]
* Add a screenshot of your test image created using ImageJ after the addition [2 marks]
* Add a screenshot of its histogram [1 mark]
* Add your source code below [5 marks]
* **DO NOT FORGET TO ADD A PREAMBLE** [1 mark].
* Add evidence of testing using your new test image.
  + Hint: Add the screenshot of the console that displays the min and max values [1 mark]
  + A screenshot of the table from ImageJ that displays the min and max values [1 mark]
  + Are the values identical?
    - If yes, test passed,
    - If not are they relatively similar?
      * If yes, test passed,
      * If not, test failed, you must debug the code.

## 6. Improve the contrast of an image

### by hand using the equation seen in the lecture [11 marks in total]

* Add your source code below [5 marks]
* **DO NOT FORGET TO ADD A PREAMBLE** [1 mark].
* Add evidence of testing using your test image.
  + Hint: add the screenshot of your OpenCV window when your displayed float\_image. [1 mark]
  + Why was the image (mostly) white? [3 marks]
  + add the screenshot of your OpenCV window when your displayed uint8\_image. [1 mark]

### using OpenCV’s function [8 marks in total]

* Add your source code below [5 marks]
* **DO NOT FORGET TO ADD A PREAMBLE** [1 mark].
* Add evidence of testing using your test image.
  + Hint: add the screenshot of your OpenCV window when your displayed uint8\_image. [1 mark]
  + add a screenshot of its histogram in ImageJ. [1 mark]