SCC0251/0651/5830 + MAI5020 — Prof. Moacir Ponti

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Assignment 0: how to do assignments

Code the assignment by yourself. Ask if you need help. Plagiarism is not tolerated.

1 Introduction

1.1 Goal

To teach students the protocol they should follow when solving the assignments. This is not a real assignment, but a simple example.

1.2 Task

In this assignment you have to implement a simple "pixel selector": given a pixel coordinate, print its value as output.

Follow the instructions carefully:

1. Load the input image.
2. Get the value of the pixel located at the (i, j) coordinates specified in the input
3. Print the value of that pixel in a single line with R, G and B values separated by a single space.

1.3 Input Parameters

The following parameters will be input to your program in the following order through `stdin`, as usual for run.codes:

1. filename `imginput` for the input image
2. the first dimension of the coordinate, i
3. the second dimension of the coordinate, j

2 Getting the Value of a Single Pixel

Load the `imageio` library by using the following command to avoid an unnecessary warning message:

```
import imageio.v3 as imageio
```

After loading the image with `imageio`, accessing the pixel values follows the same syntax as with any `numpy` matrix. Given coordinates (i, j) the values on an image matrix `imagemat` can be accessed with `imagemat[i, j]` or `imagemat[i][j]`.

3 Input and Output

Input Example 01: Input image `in.jpg`, coordinate $(2, 4)$:

```
in.jpg
2
4
```

Output Example 01: The pixel value at coordinate $(2, 4)$, with R, G and B values separated by a single space:

```
123 1 23
```

4 Submission

There is no need to submit this code anywhere as this is an example assignment. You can check for correctness by downloading the test cases from e-disciplinas and testing with run-codes-local.

For completeness, this are usually the expected requirements for real assignments:

1. **Use your USP number as the filename for your code.**
2. **Include a header**. Use a header with name, USP number, course code, year/semester and the title of the assignment. A penalty on the evaluation will be applied if your code is missing the header.
3. **Comment your code**. For any computation that is not obvious from function names and variables, add a comment explaining.

5 Grading

This assignment won't be graded, but if it would the rules would probably look like the following:

$$\frac{R + A}{2} - P$$

where each value ranges from $0 - 10$, R is the grade from run-codes-local, A refers to the correct implementation of "Pixel Selection". P goes up to 1.0 and is a possible penalty for failing to follow the rules from the previous section.