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Assignment T0 – Training Sheet

Problem 1 (Compilation, Brightness and Contrast)

- a) Compile the program `simple_filter`. First download the required file `is20_ex00.tgz` from ILIAS into your own directory. To unpack the data use the command `tar xvzf is20_ex00.tgz`. Compile the program with `gcc -O3 -o simple_filter simple_filter.c -lm`.
Note, that you need a working C-compiler, which you can e.g. install using `sudo apt-get install build-essential`.
- b) Execute the program. This command line program modifies the brightness and contrast of grayscale (`.pgm`) and color (`.ppm`) images. First, the program asks if a color or grayscale image will be given. Second, the path for the input image has to be given. Here you can use one of the provided example images `head.pgm` or `baboon.ppm`. Then the image operation is chosen. Test e.g. *brightness* with a brightness offset of 100 or choose *contrast* with a scaling of 1.5. Finally, the path for the output image has to be provided.
- c) Understand the program. Open the file `simple_filter.c` and see how the brightness is changed in the method `brightness` and how the contrast is adjusted in the method `contrast`.

If problems occur during the compilation or program execution, feel free to ask questions in the ILIAS Forum.

Guidelines for the Tutorials

- **This training sheet** should recall some programming preliminaries and is **not** graded.
 - The following exercise sheets contain **three types of problems**:
 - **Theoretical Homework Assignments** and **Programming Homework Assignments** have to be submitted via ILIAS before each deadline.
 - **Classroom Assignments (C)** are intended to be solved **within** the next tutorial. They **don't** have to be submitted and will not be graded.
 - In order to gain **admission to the exam**, you have to achieve **50% of the total points** from the theoretical and programming assignments within the semester.
 - **Active participation** in the tutorials is not mandatory, but highly recommended as preparation for the exam.
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