

Task 1 - Normal

How to run this task

First, this project uses 'cmake' and 'make'. Make sure you have both of them installed. Second, we are going to use 'c++ 11' so make sure you have the correct version and updated 'gcc' compiler installed.

For the image processing, we are using the OpenCV library (for loading/ storing/ writing images). Install the library using the following command (on macOS) 'bash brew install opencv'. Note: This will also install all the dependencies required for the opencv library.

Now in order to run the the project write down in terminal the following commands: 'bask', 'cmake .' and 'make'. After running all the above commands a 'Filters.o' executable should have been created by now. In order to apply the grayscale filter and the other 3 filters to your image, just run in terminal the following command './Filters.o path_to_your_image number_of_threads'. For example, run './Filters.o ~/image.jpg 2' to apply all the filters on the image.jpg on home directory with 2 threads.

Performance measurements

In order to run the performance measurements type into terminal the following command: 'chmod +x performance.sh' and './performance.sh'
Here is an example of the output of the above commands:

Number of Threads	Time
1	.080862000
3	.077144000
5	.079362000
10	.079465000
15	.080597000
25	.083824000
50	.098581000
100	.099063000
250	.100529000
500	.100404000