# Gprof:

Flat profile:

Each sample counts as 0.01 seconds.

% cumulative self self total

time seconds seconds calls us/call us/call name

99.43 17.57 17.57 89993 195.24 195.24 OverwriteGrayscaleFonksiyonu(std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&)

0.57 17.67 0.10 \_init

0.00 17.67 0.00 5622 0.00 0.00 void std::deque<std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> >, std::allocator<std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > > >::\_M\_push\_back\_aux<std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&>(std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&)

0.00 17.67 0.00 5 0.00 0.00 void std::vector<std::thread, std::allocator<std::thread> >::\_M\_realloc\_insert<std::thread>(\_\_gnu\_cxx::\_\_normal\_iterator<std::thread\*, std::vector<std::thread, std::allocator<std::thread> > >, std::thread&&)

0.00 17.67 0.00 1 0.00 0.00 std::vector<std::thread, std::allocator<std::thread> >::~vector()

granularity: each sample hit covers 4 byte(s) for 0.06% of 17.67 seconds

index % time self children called name

17.57 0.00 89993/89993 islemYap() [2]

[1] 99.4 17.57 0.00 89993 OverwriteGrayscaleFonksiyonu(std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&) [1]

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<spontaneous>

[2] 99.4 0.00 17.57 islemYap() [2]

17.57 0.00 89993/89993 OverwriteGrayscaleFonksiyonu(std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&) [1]

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<spontaneous>

[3] 0.6 0.10 0.00 \_init [3]

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0.00 0.00 5622/5622 main [9]

[11] 0.0 0.00 0.00 5622 void std::deque<std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> >, std::allocator<std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > > >::\_M\_push\_back\_aux<std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&>(std::\_\_cxx11::basic\_string<char, std::char\_traits<char>, std::allocator<char> > const&) [11]

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0.00 0.00 5/5 main [9]

[12] 0.0 0.00 0.00 5 void std::vector<std::thread, std::allocator<std::thread> >::\_M\_realloc\_insert<std::thread>(\_\_gnu\_cxx::\_\_normal\_iterator<std::thread\*, std::vector<std::thread, std::allocator<std::thread> > >, std::thread&&) [12]

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0.00 0.00 1/1 main [9]

[13] 0.0 0.00 0.00 1 std::vector<std::thread, std::allocator<std::thread> >::~vector() [13]

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# Mpstat:

Linux 6.8.0-35-generic (cebi) 06/10/2024 \_x86\_64\_ (12 CPU)

04:17:23 PM CPU %usr %nice %sys %iowait %irq %soft %steal %guest %gnice %idle

04:17:24 PM all 26.92 0.00 48.16 0.00 0.00 0.00 0.00 0.00 0.00 24.92

04:17:25 PM all 33.42 0.00 61.32 0.00 0.00 0.00 0.00 0.00 0.00 5.26

04:17:26 PM all 30.74 0.00 61.15 0.00 0.00 0.00 0.00 0.00 0.00 8.10

04:17:27 PM all 32.33 0.00 59.73 0.25 0.00 0.00 0.00 0.00 0.00 7.69

04:17:28 PM all 30.81 0.00 60.88 0.00 0.00 0.00 0.00 0.00 0.00 8.31

04:17:29 PM all 26.53 0.00 50.88 0.00 0.00 0.00 0.00 0.00 0.00 22.59

# Valgrind:

==34302== Memcheck, a memory error detector

==34302== Copyright (C) 2002-2022, and GNU GPL'd, by Julian Seward et al.

==34302== Using Valgrind-3.22.0 and LibVEX; rerun with -h for copyright info

==34302== Command: ./grayscale-v7

==34302== Parent PID: 4735

==34302==

==34302==

==34302== Process terminating with default action of signal 27 (SIGPROF)

==34302== at 0x4C328B2: \_\_open\_nocancel (open64\_nocancel.c:39)

==34302== by 0x4C4285F: write\_gmon (gmon.c:393)

==34302== by 0x4C4320A: \_mcleanup (gmon.c:467)

==34302== by 0x4B5D371: \_\_cxa\_finalize (cxa\_finalize.c:82)

==34302== by 0x10C4E6: ??? (in /home/can/Desktop/GrayscaleCpp/grayscale-v7)

==34302== by 0x40010F1: \_dl\_call\_fini (dl-call\_fini.c:43)

==34302== by 0x4005577: \_dl\_fini (dl-fini.c:114)

==34302== by 0x4B5DA65: \_\_run\_exit\_handlers (exit.c:108)

==34302== by 0x4B5DBAD: exit (exit.c:138)

==34302== by 0x4B401D0: (below main) (libc\_start\_call\_main.h:74)

==34302==

==34302== HEAP SUMMARY:

==34302== in use at exit: 113,752 bytes in 7 blocks

==34302== total heap usage: 635,667 allocs, 635,660 frees, 892,510,403 bytes allocated

==34302==

==34302== 1,024 bytes in 1 blocks are still reachable in loss record 1 of 4

==34302== at 0x4846828: malloc (in /usr/libexec/valgrind/vgpreload\_memcheck-amd64-linux.so)

==34302== by 0x4B9B1A4: \_IO\_file\_doallocate (filedoalloc.c:101)

==34302== by 0x4BAB513: \_IO\_doallocbuf (genops.c:347)

==34302== by 0x4BA8F7F: \_IO\_file\_overflow@@GLIBC\_2.2.5 (fileops.c:745)

==34302== by 0x4BA9A9E: \_IO\_new\_file\_xsputn (fileops.c:1244)

==34302== by 0x4BA9A9E: \_IO\_file\_xsputn@@GLIBC\_2.2.5 (fileops.c:1197)

==34302== by 0x4B9CA01: fwrite (iofwrite.c:39)

==34302== by 0x49BDCA4: std::basic\_ostream<char, std::char\_traits<char> >& std::\_\_ostream\_insert<char, std::char\_traits<char> >(std::basic\_ostream<char, std::char\_traits<char> >&, char const\*, long) (in /usr/lib/x86\_64-linux-gnu/libstdc++.so.6.0.33)

==34302== by 0x10C118: main (in /home/can/Desktop/GrayscaleCpp/grayscale-v7)

==34302==

==34302== 1,216 bytes in 4 blocks are possibly lost in loss record 2 of 4

==34302== at 0x484D953: calloc (in /usr/libexec/valgrind/vgpreload\_memcheck-amd64-linux.so)

==34302== by 0x40145AB: calloc (rtld-malloc.h:44)

==34302== by 0x40145AB: allocate\_dtv (dl-tls.c:370)

==34302== by 0x40145AB: \_dl\_allocate\_tls (dl-tls.c:629)

==34302== by 0x4BB3606: allocate\_stack (allocatestack.c:429)

==34302== by 0x4BB3606: pthread\_create@@GLIBC\_2.34 (pthread\_create.c:655)

==34302== by 0x4956C88: std::thread::\_M\_start\_thread(std::unique\_ptr<std::thread::\_State, std::default\_delete<std::thread::\_State> >, void (\*)()) (in /usr/lib/x86\_64-linux-gnu/libstdc++.so.6.0.33)

==34302== by 0x10BB11: main (in /home/can/Desktop/GrayscaleCpp/grayscale-v7)

==34302==

==34302== 37,784 bytes in 1 blocks are still reachable in loss record 3 of 4

==34302== at 0x484D953: calloc (in /usr/libexec/valgrind/vgpreload\_memcheck-amd64-linux.so)

==34302== by 0x4C4301F: monstartup (gmon.c:175)

==34302== by 0x10C430: \_\_gmon\_start\_\_ (in /home/can/Desktop/GrayscaleCpp/grayscale-v7)

==34302== by 0x4846015: ??? (in /usr/libexec/valgrind/vgpreload\_memcheck-amd64-linux.so)

==34302== by 0x40058C5: call\_init (dl-init.c:37)

==34302== by 0x40058C5: \_dl\_init (dl-init.c:88)

==34302== by 0x401F59F: ??? (in /usr/lib/x86\_64-linux-gnu/ld-linux-x86-64.so.2)

==34302==

==34302== 73,728 bytes in 1 blocks are still reachable in loss record 4 of 4

==34302== at 0x4846828: malloc (in /usr/libexec/valgrind/vgpreload\_memcheck-amd64-linux.so)

==34302== by 0x4923401: ??? (in /usr/lib/x86\_64-linux-gnu/libstdc++.so.6.0.33)

==34302== by 0x400571E: call\_init.part.0 (dl-init.c:74)

==34302== by 0x4005823: call\_init (dl-init.c:120)

==34302== by 0x4005823: \_dl\_init (dl-init.c:121)

==34302== by 0x401F59F: ??? (in /usr/lib/x86\_64-linux-gnu/ld-linux-x86-64.so.2)

==34302==

==34302== LEAK SUMMARY:

==34302== definitely lost: 0 bytes in 0 blocks

==34302== indirectly lost: 0 bytes in 0 blocks

==34302== possibly lost: 1,216 bytes in 4 blocks

==34302== still reachable: 112,536 bytes in 3 blocks

==34302== suppressed: 0 bytes in 0 blocks

==34302==

==34302== ERROR SUMMARY: 1 errors from 1 contexts (suppressed: 0 from 0)

# Komutlar:

### Compile etme komutları:

g++ -o grayscale-v7 grayscale-conversion-v7.cpp -std=c++11 -pthread -pg -O3

g++ -o grayscale-v6 grayscale-conversion-v6.cpp -std=c++11 -pthread -O3

g++ -o grayscale-v5 grayscale-conversion-v5.cpp -std=c++11 -pthread -O3

g++ -o grayscale-v4 grayscale-conversion-v4.cpp

g++ -o grayscale-v3 grayscale-conversion-v3.cpp

g++ -o grayscale-v2 grayscale-conversion-v2.cpp

g++ -o grayscale-v1 grayscale-conversion-v1.cpp

### Resimler için RAM'de yer ayırma komutları:

time taskset -c 0-11 ./kopyapasta # Images klasörü içinde çalıştırılmalıdır!

sudo mkdir -p /mnt/ramdisk

sudo mount -t tmpfs -o size=11G tmpfs /mnt/ramdisk

sudo cp -r ~/Desktop/GrayscaleCpp/images /mnt/ramdisk/

sudo chown -R $(whoami):$(whoami) /mnt/ramdisk/images

### Programı çalıştırma komutu (12 thread):

time taskset -c 0-11 ./grayscale-v7

### Resimleri RAM'den silme komutları:

sudo rm -r /mnt/ramdisk/images

sudo rm -r /mnt/ramdisk

sudo umount /mnt/ramdisk

#### GitHub sayfası: <https://github.com/can61cebi/GrayscaleCpp>