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CPSC 457 – T05

I have ran strace -c and time on my programs from Q1 and Q3. Please see screenshots of the results below. The result I got was that the C++ program was slightly faster than the bash script. The differences are due to the number of system calls they are making and the time spent per call.

```
bash-4.4$ strace -c ./scan cpp 5
./scan.cpp 2501
./sum.cpp 2453
./thread_example.cpp 1344
./CPSC457/week4/sorting/cpp_struct_sort.cpp 1205
./CPSC457/week4/sorting/cpp_sort.cpp 1199
Total size: 8702
% time     seconds  usecs/call     calls    errors syscall
------ ----------- ----------- --------- --------- ----------------
 64.02    0.007146          39       182         7 stat
 35.15    0.003924        3924         1           wait4
  0.64    0.000071          11         6           write
  0.20    0.000022           3         7           fstat
  0.00    0.000000           0         8           read
  0.00    0.000000           0         7           close
  0.00    0.000000           0        14           mmap
  0.00    0.000000           0        10           mprotect
  0.00    0.000000           0         1           munmap
  0.00    0.000000           0         3           brk
  0.00    0.000000           0         1         1 access
  0.00    0.000000           0         1           clone
  0.00    0.000000           0         1           execve
  0.00    0.000000           0         1           fcntl
  0.00    0.000000           0         1           arch_prctl
  0.00    0.000000           0        48        43 openat
  0.00    0.000000           0         1           pipe2
------ ----------- ----------- --------- --------- ----------------
100.00    0.011163                   293        51 total
bash-4.4$ time ./scan cpp 5
./scan.cpp 2501
./sum.cpp 2453
./thread_example.cpp 1344
./CPSC457/week4/sorting/cpp_struct_sort.cpp 1205
./CPSC457/week4/sorting/cpp_sort.cpp 1199
Total size: 8702

real    0m0.064s
user    0m0.007s
sys     0m0.012s
bash-4.4$
```

```
bash-4.4$ strace -c sh scan.sh cpp 5
./scan.cpp 2501
./sum.cpp 2453
./thread_example.cpp 1344
./CPSC457/week4/sorting/cpp_struct_sort.cpp 1205
./CPSC457/week4/sorting/cpp_sort.cpp 1199
Total size: 8702
% time     seconds  usecs/call     calls    errors syscall
------ ----------- ----------- --------- --------- ----------------
 88.23    0.023985        4797         5         1 wait4
  3.07    0.000834          12        68        47 openat
  1.88    0.000511         127         4           clone
  1.09    0.000297          12        23           mmap
  1.02    0.000276           8        33         6 close
  0.93    0.000252           9        27        11 stat
  0.61    0.000165           8        20           fstat
  0.60    0.000162          20         8           mprotect
  0.53    0.000143           7        19           rt_sigprocmask
  0.45    0.000122           7        16           rt_sigaction
  0.32    0.000087           9         9           read
  0.17    0.000047          15         3           pipe
  0.17    0.000046          11         4           brk
  0.14    0.000038           9         4           lseek
  0.12    0.000032          32         1           munmap
  0.10    0.000027           9         3         1 fcntl
  0.09    0.000024           4         5         1 access
  0.07    0.000020          20         1           execve
  0.07    0.000018           6         3         2 ioctl
  0.05    0.000013          13         1           dup2
  0.04    0.000010           5         2           getpid
  0.04    0.000010          10         1           sysinfo
  0.03    0.000009           9         1           uname
  0.03    0.000009           9         1           getppid
  0.03    0.000009           4         2           prlimit64
  0.03    0.000008           1         5           getuid
  0.03    0.000008           1         5           geteuid
  0.03    0.000008           1         5           getegid
  0.03    0.000008           8         1           arch_prctl
  0.03    0.000007           1         5           getgid
  0.00    0.000000           0         1           rt_sigreturn
  0.00    0.000000           0         1           getpgrp
------ ----------- ----------- --------- --------- ----------------
100.00    0.027185                   287        69 total
bash-4.4$ time sh scan.sh cpp 5
./scan.cpp 2501
./sum.cpp 2453
./thread_example.cpp 1344
./CPSC457/week4/sorting/cpp_struct_sort.cpp 1205
./CPSC457/week4/sorting/cpp_sort.cpp 1199
Total size: 8702

real    0m0.072s
user    0m0.013s
sys     0m0.029s
bash-4.4$
```