Московский авиационный институт (национальный исследовательский университет)

Институт информационных технологий и прикладной математики

«Кафедра вычислительной математики и программирования»

Лабораторная работа по предмету

"Операционные системы"

№6

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Оглавление

Цель работы

Приобретение практических навыков диагностики работы программного обеспечения.

Постановка задачи

При выполнении лабораторных работ по курсу ОС необходимо продемонстрировать ключевые системные вызовы, которые в них используются и то, что их использование соответствует варианту ЛР. По итогам выполнения всех лабораторных работ отчет по данной ЛР должен содержать краткую сводку по исследованию написанных программ.

Демонстрация ключевых системных вызовов

Strace:
LAB1

```
execve("./lab_01_osi_app", ["./lab_01_osi_app"], 0x7ffffe96d200 /* 92 vars */) = 0
brk(NULL)                       = 0x63540428c000
access("/etc/ld.so.preload", R_OK)      = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=171215, ...}) = 0
mmap(NULL, 171215, PROT_READ, MAP_PRIVATE, 3, 0) = 0x726d89d2f000
close(3)                        = 0
openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360w\2\0\0\0\0\0"..., 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
fstat(3, {st_mode=S_IFREG|0755, st_size=2145632, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x726d89d2d000
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
mmap(NULL, 2169904, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x726d89a00000
mmap(0x726d89a24000, 1511424, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x24000) = 0x726d89a24000
mmap(0x726d89b95000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x195000) = 0x726d89b95000
mmap(0x726d89c04000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x203000) = 0x726d89c04000
mmap(0x726d89c0a000, 31792, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x726d89c0a000
close(3)                        = 0
```

```
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS,
-1, 0) = 0x726d89d2a000
arch_prctl(ARCH_SET_FS, 0x726d89d2a740) = 0
set_tid_address(0x726d89d2aa10)         = 320542
set_robust_list(0x726d89d2aa20, 24)     = 0
rseq(0x726d89d2a680, 0x20, 0, 0x53053053) = 0
mprotect(0x726d89c04000, 16384, PROT_READ) = 0
mprotect(0x6354034ba000, 4096, PROT_READ) = 0
mprotect(0x726d89d98000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) =
0
getrandom("\x0e\x08\x01\xc9\x1e\x85\x1a\xae", 8, GRND_NONBLOCK) = 8
munmap(0x726d89d2f000, 171215)          = 0
pipe2([3, 4], 0)                        = 0
pipe2([5, 6], 0)                        = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
brk(NULL)                               = 0x63540428c000
brk(0x6354042ad000)                     = 0x6354042ad000
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\320\270\320\274\321\217 \321\204\320\260\320\271\320\273\320\260"..., 34) = 34
read(0, "out.txt\n", 1024)              = 8
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|
SIGCHLD, child_tidptr=0x726d89d2aa10) = 320582
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
close(3)                                = 0
close(6)                                = 0
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\260 \320\264\320\273\321\217"..., 82) = 82
write(1, "\320\222\320\262\320\276\320\264
\320\276\321\202\321\200\320\270\321\206\320\260\321\202\320\265\320\273\321\214\320
\275\320"..., 110) = 110
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "55\n", 1024)                   = 3
write(4, "7\0\0\0", 4)                  = 4
read(5, "\0", 1)                        = 1
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "14\n", 1024)                   = 3
write(4, "\16\0\0\0", 4)                = 4
read(5, "\0", 1)                        = 1
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "22\n", 1024)                   = 3
write(4, "\26\0\0\0", 4)                = 4
read(5, "\0", 1)                        = 1
```

write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "13\n", 1024)   = 3
write(4, "\r\0\0\0", 4)   = 4
read(5, "\1", 1)   = 1
close(4)   = 0
close(5)   = 0
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=320582, si_uid=1000,
si_status=0, si_utime=0, si_stime=0} ---
wait4(320582, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 320582
write(1,
"\320\240\320\276\320\264\320\270\321\202\320\265\320\273\321\214\321\201\320\272\320\270\320\271 \320\277\321\200\320\276\321"..., 58) = 58
lseek(0, -1, SEEK_CUR)   = -1 ESPIPE (Illegal seek)
lseek(0, -1, SEEK_CUR)   = -1 ESPIPE (Illegal seek)
exit_group(0)   = ?
+++ exited with 0 +++

LAB2

execve("./gauss_solver", ["./gauss_solver", "2", "-t"], 0x7ffd22256780 /* 91 vars */) = 0
brk(NULL)   = 0x591239923000
access("/etc/ld.so.preload", R_OK)   = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=171215, ...}) = 0
mmap(NULL, 171215, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7efc18cad000
close(3)   = 0
openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360w\2\0\0\0\0\0"..., 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
fstat(3, {st_mode=S_IFREG|0755, st_size=2145632, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x7efc18cab000
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
mmap(NULL, 2169904, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7efc18a00000
mmap(0x7efc18a24000, 1511424, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x24000) = 0x7efc18a24000
mmap(0x7efc18b95000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x195000) = 0x7efc18b95000
mmap(0x7efc18c04000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x203000) = 0x7efc18c04000
mmap(0x7efc18c0a000, 31792, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7efc18c0a000
close(3)   = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS,
-1, 0) = 0x7efc18ca8000

```
arch_prctl(ARCH_SET_FS, 0x7efc18ca8740) = 0
set_tid_address(0x7efc18ca8a10)        = 321142
set_robust_list(0x7efc18ca8a20, 24)    = 0
rseq(0x7efc18ca8680, 0x20, 0, 0x53053053) = 0
mprotect(0x7efc18c04000, 16384, PROT_READ) = 0
mprotect(0x59120d3f8000, 4096, PROT_READ) = 0
mprotect(0x7efc18d16000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) =
0
getrandom("\x57\xd4\x69\x26\xc0\x5e\xb7\x57", 8, GRND_NONBLOCK) = 8
munmap(0x7efc18cad000, 171215)         = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
brk(NULL)                      = 0x591239923000
brk(0x591239944000)            = 0x591239944000
write(1, "\n", 1)              = 1
write(1, "=== Performance Analysis ===\n", 29) = 29
write(1, "Matrix Size | Threads | Sequenti"..., 79) = 79
write(1, "--------------------------------"..., 76) = 76
brk(0x591239965000)            = 0x591239965000
brk(0x591239986000)            = 0x591239986000
brk(0x5912399a7000)            = 0x5912399a7000
brk(0x5912399c8000)            = 0x5912399c8000
brk(0x5912399e9000)            = 0x5912399e9000
brk(0x591239a0a000)            = 0x591239a0a000
brk(0x591239a2b000)            = 0x591239a2b000
rt_sigaction(SIGRT_1, {sa_handler=0x7efc18a94070, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_RESTART|SA_SIGINFO,
sa_restorer=0x7efc18a3e4d0}, NULL, 8) = 0
rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
mmap(NULL, 8392704, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS|
MAP_STACK, -1, 0) = 0x7efc181ff000
madvise(0x7efc181ff000, 4096, MADV_GUARD_INSTALL) = -1 EINVAL (Invalid argument)
mprotect(0x7efc181ff000, 4096, PROT_NONE) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc189ff990, parent_tid=0x7efc189ff990,
exit_signal=0, stack=0x7efc181ff000, stack_size=0x7fff80, tls=0x7efc189ff6c0} =>
{parent_tid=[321143]}, 88) = 321143
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK,
-1, 0) = 0x7efc179fe000
mprotect(0x7efc179ff000, 8388608, PROT_READ|PROT_WRITE) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc181fe990, parent_tid=0x7efc181fe990,
```

exit_signal=0, stack=0x7efc179fe000, stack_size=0x7fff80, tls=0x7efc181fe6c0} =>
{parent_tid=[321144]}, 88) = 321144
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
futex(0x7efc189ff990, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 321143, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "Size: 250 | Threads: 2 | Sequen"..., 113) = 113
brk(0x591239a4c000)   = 0x591239a4c000
brk(0x591239a6d000)   = 0x591239a6d000
brk(0x591239a8e000)   = 0x591239a8e000
brk(0x591239aaf000)   = 0x591239aaf000
brk(0x591239ad0000)   = 0x591239ad0000
brk(0x591239af1000)   = 0x591239af1000
brk(0x591239b12000)   = 0x591239b12000
brk(0x591239b33000)   = 0x591239b33000
brk(0x591239b54000)   = 0x591239b54000
brk(0x591239b75000)   = 0x591239b75000
brk(0x591239b96000)   = 0x591239b96000
brk(0x591239bb7000)   = 0x591239bb7000
brk(0x591239bd8000)   = 0x591239bd8000
brk(0x591239bf9000)   = 0x591239bf9000
brk(0x591239c1a000)   = 0x591239c1a000
brk(0x591239c3b000)   = 0x591239c3b000
brk(0x591239c5c000)   = 0x591239c5c000
brk(0x591239c7d000)   = 0x591239c7d000
brk(0x591239c9e000)   = 0x591239c9e000
brk(0x591239cbf000)   = 0x591239cbf000
brk(0x591239ce0000)   = 0x591239ce0000
brk(0x591239d01000)   = 0x591239d01000
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc181fe990, parent_tid=0x7efc181fe990,
exit_signal=0, stack=0x7efc179fe000, stack_size=0x7fff80, tls=0x7efc181fe6c0} =>
{parent_tid=[321145]}, 88) = 321145
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc189ff990, parent_tid=0x7efc189ff990,
exit_signal=0, stack=0x7efc181ff000, stack_size=0x7fff80, tls=0x7efc189ff6c0} =>
{parent_tid=[321146]}, 88) = 321146
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
futex(0x7efc181fe990, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 321145, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "Size: 500 | Threads: 2 | Sequen"..., 113) = 113
brk(0x591239b30000)   = 0x591239b30000
brk(0x591239a3b000)   = 0x591239a3b000
brk(0x591239a5c000)   = 0x591239a5c000

```
brk(0x591239a7e000)                = 0x591239a7e000
brk(0x591239a9f000)                = 0x591239a9f000
brk(0x591239ac0000)                = 0x591239ac0000
brk(0x591239ae2000)                = 0x591239ae2000
brk(0x591239b03000)                = 0x591239b03000
brk(0x591239b24000)                = 0x591239b24000
brk(0x591239b45000)                = 0x591239b45000
brk(0x591239b67000)                = 0x591239b67000
brk(0x591239b88000)                = 0x591239b88000
brk(0x591239ba9000)                = 0x591239ba9000
brk(0x591239bca000)                = 0x591239bca000
brk(0x591239bec000)                = 0x591239bec000
brk(0x591239c0d000)                = 0x591239c0d000
brk(0x591239c2e000)                = 0x591239c2e000
brk(0x591239c50000)                = 0x591239c50000
brk(0x591239c71000)                = 0x591239c71000
brk(0x591239c92000)                = 0x591239c92000
brk(0x591239cb3000)                = 0x591239cb3000
brk(0x591239cd5000)                = 0x591239cd5000
brk(0x591239cf6000)                = 0x591239cf6000
brk(0x591239d17000)                = 0x591239d17000
brk(0x591239d38000)                = 0x591239d38000
brk(0x591239d5a000)                = 0x591239d5a000
brk(0x591239d7b000)                = 0x591239d7b000
brk(0x591239d9c000)                = 0x591239d9c000
brk(0x591239dbd000)                = 0x591239dbd000
brk(0x591239ddf000)                = 0x591239ddf000
brk(0x591239e00000)                = 0x591239e00000
brk(0x591239e21000)                = 0x591239e21000
brk(0x591239e43000)                = 0x591239e43000
brk(0x591239e64000)                = 0x591239e64000
brk(0x591239e85000)                = 0x591239e85000
brk(0x591239ea6000)                = 0x591239ea6000
brk(0x591239ec8000)                = 0x591239ec8000
brk(0x591239ee9000)                = 0x591239ee9000
brk(0x591239f0a000)                = 0x591239f0a000
brk(0x591239f2b000)                = 0x591239f2b000
brk(0x591239f4d000)                = 0x591239f4d000
brk(0x591239f6e000)                = 0x591239f6e000
brk(0x591239f8f000)                = 0x591239f8f000
brk(0x591239fb1000)                = 0x591239fb1000
brk(0x591239fd2000)                = 0x591239fd2000
brk(0x591239ff3000)                = 0x591239ff3000
brk(0x59123a014000)                = 0x59123a014000
brk(0x59123a036000)                = 0x59123a036000
brk(0x59123a057000)                = 0x59123a057000
brk(0x59123a078000)                = 0x59123a078000
brk(0x59123a099000)                = 0x59123a099000
```

```
brk(0x59123a0bb000)                    = 0x59123a0bb000
brk(0x59123a0dc000)                    = 0x59123a0dc000
brk(0x59123a0fd000)                    = 0x59123a0fd000
brk(0x59123a11e000)                    = 0x59123a11e000
brk(0x59123a140000)                    = 0x59123a140000
brk(0x59123a161000)                    = 0x59123a161000
brk(0x59123a182000)                    = 0x59123a182000
brk(0x59123a1a4000)                    = 0x59123a1a4000
brk(0x59123a1c5000)                    = 0x59123a1c5000
brk(0x59123a1e6000)                    = 0x59123a1e6000
brk(0x59123a207000)                    = 0x59123a207000
brk(0x59123a229000)                    = 0x59123a229000
brk(0x59123a24a000)                    = 0x59123a24a000
brk(0x59123a26b000)                    = 0x59123a26b000
brk(0x59123a28c000)                    = 0x59123a28c000
brk(0x59123a2ae000)                    = 0x59123a2ae000
brk(0x59123a2cf000)                    = 0x59123a2cf000
brk(0x59123a2f0000)                    = 0x59123a2f0000
brk(0x59123a312000)                    = 0x59123a312000
brk(0x59123a333000)                    = 0x59123a333000
brk(0x59123a354000)                    = 0x59123a354000
brk(0x59123a375000)                    = 0x59123a375000
brk(0x59123a397000)                    = 0x59123a397000
brk(0x59123a3b8000)                    = 0x59123a3b8000
brk(0x59123a3d9000)                    = 0x59123a3d9000
brk(0x59123a3fa000)                    = 0x59123a3fa000
brk(0x59123a41c000)                    = 0x59123a41c000
brk(0x59123a43d000)                    = 0x59123a43d000
brk(0x59123a45e000)                    = 0x59123a45e000
brk(0x59123a47f000)                    = 0x59123a47f000
brk(0x59123a4a1000)                    = 0x59123a4a1000
brk(0x59123a4c2000)                    = 0x59123a4c2000
brk(0x59123a4e3000)                    = 0x59123a4e3000
brk(0x59123a505000)                    = 0x59123a505000
brk(0x59123a526000)                    = 0x59123a526000
brk(0x59123a547000)                    = 0x59123a547000
brk(0x59123a568000)                    = 0x59123a568000
brk(0x59123a58a000)                    = 0x59123a58a000
brk(0x59123a5ab000)                    = 0x59123a5ab000
brk(0x59123a5cc000)                    = 0x59123a5cc000
brk(0x59123a5ed000)                    = 0x59123a5ed000
brk(0x59123a60f000)                    = 0x59123a60f000
brk(0x59123a630000)                    = 0x59123a630000
brk(0x59123a651000)                    = 0x59123a651000
brk(0x59123a673000)                    = 0x59123a673000
brk(0x59123a694000)                    = 0x59123a694000
brk(0x59123a6b5000)                    = 0x59123a6b5000
brk(0x59123a6d6000)                    = 0x59123a6d6000
```

```
brk(0x59123a6f8000)              = 0x59123a6f8000
brk(0x59123a719000)              = 0x59123a719000
brk(0x59123a73a000)              = 0x59123a73a000
brk(0x59123a75b000)              = 0x59123a75b000
brk(0x59123a77d000)              = 0x59123a77d000
brk(0x59123a79e000)              = 0x59123a79e000
brk(0x59123a7bf000)              = 0x59123a7bf000
brk(0x59123a7e0000)              = 0x59123a7e0000
brk(0x59123a802000)              = 0x59123a802000
brk(0x59123a823000)              = 0x59123a823000
brk(0x59123a844000)              = 0x59123a844000
brk(0x59123a866000)              = 0x59123a866000
brk(0x59123a887000)              = 0x59123a887000
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc189ff990, parent_tid=0x7efc189ff990,
exit_signal=0, stack=0x7efc181ff000, stack_size=0x7fff80, tls=0x7efc189ff6c0} =>
{parent_tid=[321164]}, 88) = 321164
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc181fe990, parent_tid=0x7efc181fe990,
exit_signal=0, stack=0x7efc179fe000, stack_size=0x7fff80, tls=0x7efc181fe6c0} =>
{parent_tid=[321165]}, 88) = 321165
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
futex(0x7efc189ff990, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 321164, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "Size: 1000 | Threads:  2 | Seque"..., 114) = 114
brk(0x59123a0ee000)               = 0x59123a0ee000
brk(0x591239a3b000)               = 0x591239a3b000
brk(0x591239a5e000)               = 0x591239a5e000
brk(0x591239a7f000)              = 0x591239a7f000
brk(0x591239aa2000)               = 0x591239aa2000
brk(0x591239ac5000)               = 0x591239ac5000
brk(0x591239ae8000)               = 0x591239ae8000
brk(0x591239b09000)               = 0x591239b09000
brk(0x591239b2c000)               = 0x591239b2c000
brk(0x591239b4f000)              = 0x591239b4f000
brk(0x591239b72000)               = 0x591239b72000
brk(0x591239b95000)               = 0x591239b95000
brk(0x591239bb6000)               = 0x591239bb6000
brk(0x591239bd9000)               = 0x591239bd9000
brk(0x591239bfc000)              = 0x591239bfc000
brk(0x591239c1f000)              = 0x591239c1f000
brk(0x591239c40000)               = 0x591239c40000
brk(0x591239c63000)               = 0x591239c63000
```

```
brk(0x591239c86000)              = 0x591239c86000
brk(0x591239ca9000)              = 0x591239ca9000
brk(0x591239ccc000)              = 0x591239ccc000
brk(0x591239ced000)              = 0x591239ced000
brk(0x591239d10000)              = 0x591239d10000
brk(0x591239d33000)              = 0x591239d33000
brk(0x591239d56000)              = 0x591239d56000
brk(0x591239d79000)              = 0x591239d79000
brk(0x591239d9a000)              = 0x591239d9a000
brk(0x591239dbd000)              = 0x591239dbd000
brk(0x591239de0000)              = 0x591239de0000
brk(0x591239e03000)              = 0x591239e03000
brk(0x591239e24000)              = 0x591239e24000
brk(0x591239e47000)              = 0x591239e47000
brk(0x591239e6a000)              = 0x591239e6a000
brk(0x591239e8d000)              = 0x591239e8d000
brk(0x591239eb0000)              = 0x591239eb0000
brk(0x591239ed1000)              = 0x591239ed1000
brk(0x591239ef4000)              = 0x591239ef4000
brk(0x591239f17000)              = 0x591239f17000
brk(0x591239f3a000)              = 0x591239f3a000
brk(0x591239f5b000)              = 0x591239f5b000
brk(0x591239f7e000)              = 0x591239f7e000
brk(0x591239fa1000)              = 0x591239fa1000
brk(0x591239fc4000)              = 0x591239fc4000
brk(0x591239fe7000)              = 0x591239fe7000
brk(0x59123a008000)              = 0x59123a008000
brk(0x59123a02b000)              = 0x59123a02b000
brk(0x59123a04e000)              = 0x59123a04e000
brk(0x59123a071000)              = 0x59123a071000
brk(0x59123a094000)              = 0x59123a094000
brk(0x59123a0b5000)              = 0x59123a0b5000
brk(0x59123a0d8000)              = 0x59123a0d8000
brk(0x59123a0fb000)              = 0x59123a0fb000
brk(0x59123a11e000)              = 0x59123a11e000
brk(0x59123a13f000)              = 0x59123a13f000
brk(0x59123a162000)              = 0x59123a162000
brk(0x59123a185000)              = 0x59123a185000
brk(0x59123a1a8000)              = 0x59123a1a8000
brk(0x59123a1cb000)              = 0x59123a1cb000
brk(0x59123a1ec000)              = 0x59123a1ec000
brk(0x59123a20f000)              = 0x59123a20f000
brk(0x59123a232000)              = 0x59123a232000
brk(0x59123a255000)              = 0x59123a255000
brk(0x59123a276000)              = 0x59123a276000
brk(0x59123a299000)              = 0x59123a299000
brk(0x59123a2bc000)              = 0x59123a2bc000
brk(0x59123a2df000)              = 0x59123a2df000
```

```
brk(0x59123a302000)              = 0x59123a302000
brk(0x59123a323000)              = 0x59123a323000
brk(0x59123a346000)              = 0x59123a346000
brk(0x59123a369000)              = 0x59123a369000
brk(0x59123a38c000)              = 0x59123a38c000
brk(0x59123a3af000)              = 0x59123a3af000
brk(0x59123a3d0000)              = 0x59123a3d0000
brk(0x59123a3f3000)              = 0x59123a3f3000
brk(0x59123a416000)              = 0x59123a416000
brk(0x59123a439000)              = 0x59123a439000
brk(0x59123a45a000)              = 0x59123a45a000
brk(0x59123a47d000)              = 0x59123a47d000
brk(0x59123a4a0000)              = 0x59123a4a0000
brk(0x59123a4c3000)              = 0x59123a4c3000
brk(0x59123a4e6000)              = 0x59123a4e6000
brk(0x59123a507000)              = 0x59123a507000
brk(0x59123a52a000)              = 0x59123a52a000
brk(0x59123a54d000)              = 0x59123a54d000
brk(0x59123a570000)              = 0x59123a570000
brk(0x59123a591000)              = 0x59123a591000
brk(0x59123a5b4000)              = 0x59123a5b4000
brk(0x59123a5d7000)              = 0x59123a5d7000
brk(0x59123a5fa000)              = 0x59123a5fa000
brk(0x59123a61d000)              = 0x59123a61d000
brk(0x59123a63e000)              = 0x59123a63e000
brk(0x59123a661000)              = 0x59123a661000
brk(0x59123a684000)              = 0x59123a684000
brk(0x59123a6a7000)              = 0x59123a6a7000
brk(0x59123a6ca000)              = 0x59123a6ca000
brk(0x59123a6eb000)              = 0x59123a6eb000
brk(0x59123a70e000)              = 0x59123a70e000
brk(0x59123a731000)              = 0x59123a731000
brk(0x59123a754000)              = 0x59123a754000
brk(0x59123a775000)              = 0x59123a775000
brk(0x59123a798000)              = 0x59123a798000
brk(0x59123a7bb000)              = 0x59123a7bb000
brk(0x59123a7de000)              = 0x59123a7de000
brk(0x59123a801000)              = 0x59123a801000
brk(0x59123a822000)              = 0x59123a822000
brk(0x59123a845000)              = 0x59123a845000
brk(0x59123a868000)              = 0x59123a868000
brk(0x59123a88b000)              = 0x59123a88b000
brk(0x59123a8ac000)              = 0x59123a8ac000
brk(0x59123a8cf000)              = 0x59123a8cf000
brk(0x59123a8f2000)              = 0x59123a8f2000
brk(0x59123a915000)              = 0x59123a915000
brk(0x59123a938000)              = 0x59123a938000
brk(0x59123a959000)              = 0x59123a959000
```

```
brk(0x59123a97c000)                  = 0x59123a97c000
brk(0x59123a99f000)                  = 0x59123a99f000
brk(0x59123a9c2000)                  = 0x59123a9c2000
brk(0x59123a9e5000)                  = 0x59123a9e5000
brk(0x59123aa06000)                  = 0x59123aa06000
brk(0x59123aa29000)                  = 0x59123aa29000
brk(0x59123aa4c000)                  = 0x59123aa4c000
brk(0x59123aa6f000)                  = 0x59123aa6f000
brk(0x59123aa90000)                  = 0x59123aa90000
brk(0x59123aab3000)                  = 0x59123aab3000
brk(0x59123aad6000)                  = 0x59123aad6000
brk(0x59123aaf9000)                  = 0x59123aaf9000
brk(0x59123ab1c000)                  = 0x59123ab1c000
brk(0x59123ab3d000)                  = 0x59123ab3d000
brk(0x59123ab60000)                  = 0x59123ab60000
brk(0x59123ab83000)                  = 0x59123ab83000
brk(0x59123aba6000)                  = 0x59123aba6000
brk(0x59123abc7000)                  = 0x59123abc7000
brk(0x59123abea000)                  = 0x59123abea000
brk(0x59123ac0d000)                  = 0x59123ac0d000
brk(0x59123ac30000)                  = 0x59123ac30000
brk(0x59123ac53000)                  = 0x59123ac53000
brk(0x59123ac74000)                  = 0x59123ac74000
brk(0x59123ac97000)                  = 0x59123ac97000
brk(0x59123acba000)                  = 0x59123acba000
brk(0x59123acdd000)                  = 0x59123acdd000
brk(0x59123ad00000)                  = 0x59123ad00000
brk(0x59123ad21000)                  = 0x59123ad21000
brk(0x59123ad44000)                  = 0x59123ad44000
brk(0x59123ad67000)                  = 0x59123ad67000
brk(0x59123ad8a000)                  = 0x59123ad8a000
brk(0x59123adab000)                  = 0x59123adab000
brk(0x59123adce000)                  = 0x59123adce000
brk(0x59123adf1000)                  = 0x59123adf1000
brk(0x59123ae14000)                  = 0x59123ae14000
brk(0x59123ae37000)                  = 0x59123ae37000
brk(0x59123ae58000)                  = 0x59123ae58000
brk(0x59123ae7b000)                  = 0x59123ae7b000
brk(0x59123ae9e000)                  = 0x59123ae9e000
brk(0x59123aec1000)                  = 0x59123aec1000
brk(0x59123aee2000)                  = 0x59123aee2000
brk(0x59123af05000)                  = 0x59123af05000
brk(0x59123af28000)                  = 0x59123af28000
brk(0x59123af4b000)                  = 0x59123af4b000
brk(0x59123af6e000)                  = 0x59123af6e000
brk(0x59123af8f000)                  = 0x59123af8f000
brk(0x59123afb2000)                  = 0x59123afb2000
brk(0x59123afd5000)                  = 0x59123afd5000
```

```
brk(0x59123aff8000)                = 0x59123aff8000
brk(0x59123b01b000)                 = 0x59123b01b000
brk(0x59123b03c000)                = 0x59123b03c000
brk(0x59123b05f000)                = 0x59123b05f000
brk(0x59123b082000)                 = 0x59123b082000
brk(0x59123b0a5000)                 = 0x59123b0a5000
brk(0x59123b0c6000)                 = 0x59123b0c6000
brk(0x59123b0e9000)                 = 0x59123b0e9000
brk(0x59123b10c000)                 = 0x59123b10c000
brk(0x59123b12f000)                = 0x59123b12f000
brk(0x59123b152000)                 = 0x59123b152000
brk(0x59123b173000)                 = 0x59123b173000
brk(0x59123b196000)                 = 0x59123b196000
brk(0x59123b1b9000)                 = 0x59123b1b9000
brk(0x59123b1dc000)                 = 0x59123b1dc000
brk(0x59123b1fd000)                = 0x59123b1fd000
brk(0x59123b220000)                 = 0x59123b220000
brk(0x59123b243000)                 = 0x59123b243000
brk(0x59123b266000)                 = 0x59123b266000
brk(0x59123b289000)                 = 0x59123b289000
brk(0x59123b2aa000)                 = 0x59123b2aa000
brk(0x59123b2cd000)                 = 0x59123b2cd000
brk(0x59123b2f0000)                = 0x59123b2f0000
brk(0x59123b313000)                 = 0x59123b313000
brk(0x59123b336000)                 = 0x59123b336000
brk(0x59123b357000)                 = 0x59123b357000
brk(0x59123b37a000)                 = 0x59123b37a000
brk(0x59123b39d000)                 = 0x59123b39d000
brk(0x59123b3c0000)                 = 0x59123b3c0000
brk(0x59123b3e1000)                 = 0x59123b3e1000
brk(0x59123b404000)                 = 0x59123b404000
brk(0x59123b427000)                 = 0x59123b427000
brk(0x59123b44a000)                 = 0x59123b44a000
brk(0x59123b46d000)                 = 0x59123b46d000
brk(0x59123b48e000)                 = 0x59123b48e000
brk(0x59123b4b1000)                 = 0x59123b4b1000
brk(0x59123b4d4000)                 = 0x59123b4d4000
brk(0x59123b4f7000)                = 0x59123b4f7000
brk(0x59123b518000)                 = 0x59123b518000
brk(0x59123b53b000)                 = 0x59123b53b000
brk(0x59123b55e000)                 = 0x59123b55e000
brk(0x59123b581000)                 = 0x59123b581000
brk(0x59123b5a4000)                 = 0x59123b5a4000
brk(0x59123b5c5000)                 = 0x59123b5c5000
brk(0x59123b5e8000)                 = 0x59123b5e8000
brk(0x59123b60b000)                 = 0x59123b60b000
brk(0x59123b62e000)                 = 0x59123b62e000
brk(0x59123b64f000)                = 0x59123b64f000
```

```
brk(0x59123b672000)              = 0x59123b672000
brk(0x59123b695000)              = 0x59123b695000
brk(0x59123b6b8000)              = 0x59123b6b8000
brk(0x59123b6db000)              = 0x59123b6db000
brk(0x59123b6fc000)              = 0x59123b6fc000
brk(0x59123b71f000)              = 0x59123b71f000
brk(0x59123b742000)              = 0x59123b742000
brk(0x59123b765000)              = 0x59123b765000
brk(0x59123b788000)              = 0x59123b788000
brk(0x59123b7a9000)              = 0x59123b7a9000
brk(0x59123b7cc000)              = 0x59123b7cc000
brk(0x59123b7ef000)              = 0x59123b7ef000
brk(0x59123b812000)              = 0x59123b812000
brk(0x59123b833000)              = 0x59123b833000
brk(0x59123b856000)              = 0x59123b856000
brk(0x59123b879000)              = 0x59123b879000
brk(0x59123b89c000)              = 0x59123b89c000
brk(0x59123b8bf000)              = 0x59123b8bf000
brk(0x59123b8e0000)              = 0x59123b8e0000
brk(0x59123b903000)              = 0x59123b903000
brk(0x59123b926000)              = 0x59123b926000
brk(0x59123b949000)              = 0x59123b949000
brk(0x59123b96a000)              = 0x59123b96a000
brk(0x59123b98d000)              = 0x59123b98d000
brk(0x59123b9b0000)              = 0x59123b9b0000
brk(0x59123b9d3000)              = 0x59123b9d3000
brk(0x59123b9f6000)              = 0x59123b9f6000
brk(0x59123ba17000)              = 0x59123ba17000
brk(0x59123ba3a000)              = 0x59123ba3a000
brk(0x59123ba5d000)              = 0x59123ba5d000
brk(0x59123ba80000)              = 0x59123ba80000
brk(0x59123baa3000)              = 0x59123baa3000
brk(0x59123bac4000)              = 0x59123bac4000
brk(0x59123bae7000)              = 0x59123bae7000
brk(0x59123bb0a000)              = 0x59123bb0a000
brk(0x59123bb2d000)              = 0x59123bb2d000
brk(0x59123bb4e000)              = 0x59123bb4e000
brk(0x59123bb71000)              = 0x59123bb71000
brk(0x59123bb94000)              = 0x59123bb94000
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc181fe990, parent_tid=0x7efc181fe990,
exit_signal=0, stack=0x7efc179fe000, stack_size=0x7fff80, tls=0x7efc181fe6c0} =>
{parent_tid=[321202]}, 88) = 321202
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
```

```
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc189ff990, parent_tid=0x7efc189ff990,
exit_signal=0, stack=0x7efc181ff000, stack_size=0x7fff80, tls=0x7efc189ff6c0} =>
{parent_tid=[321203]}, 88) = 321203
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
futex(0x7efc181fe990, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 321202, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "Size: 1500 | Threads:  2 | Seque"..., 114) = 114
brk(0x59123aa7b000)                = 0x59123aa7b000
brk(0x591239a3b000)                = 0x591239a3b000
brk(0x591239a5e000)                = 0x591239a5e000
brk(0x591239a82000)                = 0x591239a82000
brk(0x591239aa5000)                = 0x591239aa5000
brk(0x591239ac8000)                = 0x591239ac8000
brk(0x591239aeb000)                = 0x591239aeb000
brk(0x591239b0e000)                = 0x591239b0e000
brk(0x591239b32000)                = 0x591239b32000
brk(0x591239b55000)                = 0x591239b55000
brk(0x591239b78000)                = 0x591239b78000
brk(0x591239b9b000)                = 0x591239b9b000
brk(0x591239bbe000)                = 0x591239bbe000
brk(0x591239be1000)                = 0x591239be1000
brk(0x591239c05000)                = 0x591239c05000
brk(0x591239c28000)                = 0x591239c28000
brk(0x591239c4b000)                = 0x591239c4b000
brk(0x591239c6e000)                = 0x591239c6e000
brk(0x591239c91000)                = 0x591239c91000
brk(0x591239cb5000)                = 0x591239cb5000
brk(0x591239cd8000)                = 0x591239cd8000
brk(0x591239cfb000)               = 0x591239cfb000
brk(0x591239d1e000)                = 0x591239d1e000
brk(0x591239d41000)                = 0x591239d41000
brk(0x591239d65000)                = 0x591239d65000
brk(0x591239d88000)                = 0x591239d88000
brk(0x591239dab000)                = 0x591239dab000
brk(0x591239dce000)                = 0x591239dce000
brk(0x591239df1000)               = 0x591239df1000
brk(0x591239e15000)                = 0x591239e15000
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brk(0x59123a0b1000)              = 0x59123a0b1000
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brk(0x59123a2c1000)              = 0x59123a2c1000
brk(0x59123a2e4000)              = 0x59123a2e4000
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brk(0x59123a76e000)              = 0x59123a76e000
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brk(0x59123ba89000)                = 0x59123ba89000
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brk(0x59123ce0e000)              = 0x59123ce0e000
brk(0x59123ce32000)              = 0x59123ce32000
brk(0x59123ce55000)              = 0x59123ce55000
brk(0x59123ce78000)              = 0x59123ce78000
brk(0x59123ce9b000)              = 0x59123ce9b000
brk(0x59123cebe000)              = 0x59123cebe000
brk(0x59123cee2000)              = 0x59123cee2000
brk(0x59123cf05000)              = 0x59123cf05000
brk(0x59123cf28000)              = 0x59123cf28000
brk(0x59123cf4b000)              = 0x59123cf4b000
brk(0x59123cf6e000)              = 0x59123cf6e000
brk(0x59123cf91000)              = 0x59123cf91000
brk(0x59123cfb5000)              = 0x59123cfb5000
brk(0x59123cfd8000)              = 0x59123cfd8000
brk(0x59123cffb000)              = 0x59123cffb000
brk(0x59123d01e000)              = 0x59123d01e000
brk(0x59123d041000)              = 0x59123d041000
brk(0x59123d065000)              = 0x59123d065000
brk(0x59123d088000)              = 0x59123d088000
brk(0x59123d0ab000)              = 0x59123d0ab000
brk(0x59123d0ce000)              = 0x59123d0ce000
brk(0x59123d0f1000)              = 0x59123d0f1000
brk(0x59123d115000)              = 0x59123d115000
brk(0x59123d138000)              = 0x59123d138000
brk(0x59123d15b000)              = 0x59123d15b000
brk(0x59123d17e000)              = 0x59123d17e000
brk(0x59123d1a1000)              = 0x59123d1a1000
brk(0x59123d1c5000)              = 0x59123d1c5000
brk(0x59123d1e8000)              = 0x59123d1e8000
brk(0x59123d20b000)              = 0x59123d20b000
brk(0x59123d22e000)              = 0x59123d22e000
brk(0x59123d251000)              = 0x59123d251000
brk(0x59123d274000)              = 0x59123d274000
brk(0x59123d298000)              = 0x59123d298000
brk(0x59123d2bb000)              = 0x59123d2bb000
brk(0x59123d2de000)              = 0x59123d2de000
brk(0x59123d301000)              = 0x59123d301000
brk(0x59123d324000)              = 0x59123d324000
brk(0x59123d348000)              = 0x59123d348000
brk(0x59123d36b000)              = 0x59123d36b000
brk(0x59123d38e000)              = 0x59123d38e000
brk(0x59123d3b1000)              = 0x59123d3b1000
brk(0x59123d3d4000)              = 0x59123d3d4000
brk(0x59123d3f8000)              = 0x59123d3f8000
brk(0x59123d41b000)              = 0x59123d41b000
```

```
brk(0x59123d43e000)            = 0x59123d43e000
brk(0x59123d461000)            = 0x59123d461000
brk(0x59123d484000)            = 0x59123d484000
brk(0x59123d4a8000)            = 0x59123d4a8000
brk(0x59123d4cb000)            = 0x59123d4cb000
brk(0x59123d4ee000)            = 0x59123d4ee000
brk(0x59123d511000)            = 0x59123d511000
brk(0x59123d534000)            = 0x59123d534000
brk(0x59123d558000)            = 0x59123d558000
brk(0x59123d57b000)            = 0x59123d57b000
brk(0x59123d59e000)            = 0x59123d59e000
brk(0x59123d5c1000)            = 0x59123d5c1000
brk(0x59123d5e4000)            = 0x59123d5e4000
brk(0x59123d607000)            = 0x59123d607000
brk(0x59123d62b000)            = 0x59123d62b000
brk(0x59123d64e000)            = 0x59123d64e000
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc189ff990, parent_tid=0x7efc189ff990,
exit_signal=0, stack=0x7efc181ff000, stack_size=0x7fff80, tls=0x7efc189ff6c0} =>
{parent_tid=[321295]}, 88) = 321295
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)   = 0
clone3({flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|
CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_PARENT_SETTID|
CLONE_CHILD_CLEARTID, child_tid=0x7efc181fe990, parent_tid=0x7efc181fe990,
exit_signal=0, stack=0x7efc179fe000, stack_size=0x7fff80, tls=0x7efc181fe6c0} =>
{parent_tid=[321296]}, 88) = 321296
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
futex(0x7efc189ff990, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 321295, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "Size: 2000 | Threads:  2 | Seque"..., 114) = 114
brk(0x59123b7d9000)            = 0x59123b7d9000
brk(0x591239a3b000)            = 0x591239a3b000
exit_group(0)                  = ?
+++ exited with 0 +++
```

LAB3

```
execve("./lab_03_osi_app", ["./lab_03_osi_app"], 0x7ffc5fc88cf0 /* 91 vars */) = 0
brk(NULL)                      = 0x5fd1bc618000
access("/etc/ld.so.preload", R_OK)     = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=171215, ...}) = 0
mmap(NULL, 171215, PROT_READ, MAP_PRIVATE, 3, 0) = 0x775a4def5000
close(3)                       = 0
```

```
openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360w\2\0\0\0\0\0"..., 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
fstat(3, {st_mode=S_IFREG|0755, st_size=2145632, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x775a4def3000
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
mmap(NULL, 2169904, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x775a4dc00000
mmap(0x775a4dc24000, 1511424, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x24000) = 0x775a4dc24000
mmap(0x775a4dd95000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x195000) = 0x775a4dd95000
mmap(0x775a4de04000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x203000) = 0x775a4de04000
mmap(0x775a4de0a000, 31792, PROT_READ|PROT_WRITE, MAP_PRIVATE|
MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x775a4de0a000
close(3)                       = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS,
-1, 0) = 0x775a4def0000
arch_prctl(ARCH_SET_FS, 0x775a4def0740) = 0
set_tid_address(0x775a4def0a10)        = 321688
set_robust_list(0x775a4def0a20, 24)     = 0
rseq(0x775a4def0680, 0x20, 0, 0x53053053) = 0
mprotect(0x775a4de04000, 16384, PROT_READ) = 0
mprotect(0x5fd1a5f86000, 4096, PROT_READ) = 0
mprotect(0x775a4df5e000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) =
0
getrandom("\x2a\xa9\x5d\x1c\xe0\x33\xa0\x80", 8, GRND_NONBLOCK) = 8
munmap(0x775a4def5000, 171215)         = 0
getpid()                       = 321688
openat(AT_FDCWD, "/dev/shm/lab03_shm_321688", O_RDWR|O_CREAT|O_NOFOLLOW|
O_CLOEXEC, 0666) = 3
ftruncate(3, 72)               = 0
mmap(NULL, 72, PROT_READ|PROT_WRITE, MAP_SHARED, 3, 0) = 0x775a4df1e000
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
brk(NULL)                      = 0x5fd1bc618000
brk(0x5fd1bc639000)            = 0x5fd1bc639000
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\320\270\320\274\321\217 \321\204\320\260\320\271\320\273\320\260"..., 34) = 34
read(0, "out.txt\n", 1024)            = 8
rt_sigprocmask(SIG_BLOCK, ~[], [], 8)  = 0
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|
SIGCHLD, child_tidptr=0x775a4def0a10) = 321738
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
```

write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\260 \320\264\320\273\321\217"..., 82) = 82
write(1, "\320\222\320\262\320\276\320\264
\320\276\321\202\321\200\320\270\321\206\320\260\321\202\320\265\320\273\321\214\320
\275\320"..., 110) = 110
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "75\n", 1024)   = 3
futex(0x775a4df1e008, FUTEX_WAKE, 1)   = 1
futex(0x775a4df1e028, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 0, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "343\n", 1024)   = 4
futex(0x775a4df1e008, FUTEX_WAKE, 1)   = 1
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "123\n", 1024)   = 4
futex(0x775a4df1e008, FUTEX_WAKE, 1)   = 1
futex(0x775a4df1e028, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 0, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "55\n", 1024)   = 3
futex(0x775a4df1e008, FUTEX_WAKE, 1)   = 1
write(1, "\320\222\320\262\320\265\320\264\320\270\321\202\320\265
\321\207\320\270\321\201\320\273\320\276: ", 27) = 27
read(0, "11\n", 1024)   = 3
futex(0x775a4df1e008, FUTEX_WAKE, 1)   = 1
futex(0x775a4df1e028, FUTEX_WAIT_BITSET|FUTEX_CLOCK_REALTIME, 0, NULL,
FUTEX_BITSET_MATCH_ANY) = 0
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=321738, si_uid=1000,
si_status=0, si_utime=0, si_stime=0} ---
wait4(321738, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 321738
munmap(0x775a4df1e000, 72)   = 0
close(3)   = 0
unlink("/dev/shm/lab03_shm_321688")   = 0
lseek(0, -1, SEEK_CUR)   = -1 ESPIPE (Illegal seek)
lseek(0, -1, SEEK_CUR)   = -1 ESPIPE (Illegal seek)
exit_group(0)   = ?
+++ exited with 0 +++

LAB4

execve("./program1", ["./program1"], 0x7fff72d774a0 /* 91 vars */) = 0
brk(NULL)   = 0x59280a40c000

```
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1,
0) = 0x79fc2c701000
access("/etc/ld.so.preload", R_OK)     = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,
"/home/akella/Documents/University/OSI/lab_04/build/glibc-hwcaps/x86-64-v3/lib1.so",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/home/akella/Documents/University/OSI/lab_04/build/glibc-
hwcaps/x86-64-v3/", 0x7ffdf855c800, 0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD,
"/home/akella/Documents/University/OSI/lab_04/build/glibc-hwcaps/x86-64-v2/lib1.so",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
newfstatat(AT_FDCWD, "/home/akella/Documents/University/OSI/lab_04/build/glibc-
hwcaps/x86-64-v2/", 0x7ffdf855c800, 0) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/home/akella/Documents/University/OSI/lab_04/build/lib1.so",
O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=15008, ...}) = 0
mmap(NULL, 16408, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x79fc2c6fc000
mmap(0x79fc2c6fd000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1000) = 0x79fc2c6fd000
mmap(0x79fc2c6fe000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x79fc2c6fe000
mmap(0x79fc2c6ff000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x79fc2c6ff000
close(3)                        = 0
openat(AT_FDCWD, "/home/akella/Documents/University/OSI/lab_04/build/libm.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=171215, ...}) = 0
mmap(NULL, 171215, PROT_READ, MAP_PRIVATE, 3, 0) = 0x79fc2c6d2000
close(3)                        = 0
openat(AT_FDCWD, "/usr/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1100400, ...}) = 0
mmap(NULL, 1102152, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x79fc2c5c4000
mmap(0x79fc2c5d3000, 569344, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x79fc2c5d3000
mmap(0x79fc2c65e000, 466944, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x9a000) = 0x79fc2c65e000
mmap(0x79fc2c6d0000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x10b000) = 0x79fc2c6d0000
close(3)                        = 0
openat(AT_FDCWD, "/home/akella/Documents/University/OSI/lab_04/build/libc.so.6",
O_RDONLY|O_CLOEXEC) = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360w\2\0\0\0\0\0"..., 832) = 832
```

```
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
fstat(3, {st_mode=S_IFREG|0755, st_size=2145632, ...}) = 0
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
mmap(NULL, 2169904, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x79fc2c200000
mmap(0x79fc2c224000, 1511424, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0x24000) = 0x79fc2c224000
mmap(0x79fc2c395000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x195000) = 0x79fc2c395000
mmap(0x79fc2c404000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x203000) = 0x79fc2c404000
mmap(0x79fc2c40a000, 31792, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x79fc2c40a000
close(3)                        = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS,
-1, 0) = 0x79fc2c5c1000
arch_prctl(ARCH_SET_FS, 0x79fc2c5c1740) = 0
set_tid_address(0x79fc2c5c1a10)         = 322218
set_robust_list(0x79fc2c5c1a20, 24)     = 0
rseq(0x79fc2c5c1680, 0x20, 0, 0x53053053) = 0
mprotect(0x79fc2c404000, 16384, PROT_READ) = 0
mprotect(0x79fc2c6d0000, 4096, PROT_READ) = 0
mprotect(0x79fc2c6ff000, 4096, PROT_READ) = 0
mprotect(0x5927dc3f1000, 4096, PROT_READ) = 0
mprotect(0x79fc2c742000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) =
0
getrandom("\xd5\x55\xad\xfd\xec\x71\x87\x75", 8, GRND_NONBLOCK) = 8
munmap(0x79fc2c6d2000, 171215)          = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
brk(NULL)                       = 0x59280a40c000
brk(0x59280a42d000)             = 0x59280a42d000
write(1, "Commands:\n", 10)             = 10
write(1, " 1 - Pi func\t\tusage: 1 <num_digi"..., 36) = 36
write(1, " 2 - array sort func\tusage: 2 <N"..., 69) = 69
write(1, "-1 - exit\t\tusage: -1\n", 21) = 21
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
write(1, "Enter command: ", 15)         = 15
read(0, "1 100\n", 1024)                = 6
write(1, "Pi: 3.131593\n", 13)          = 13
write(1, "Enter command: ", 15)         = 15
read(0, "2 4 1 3 2 4\n", 1024)          = 12
write(1, "Result: 1 2 3 4 \n", 17)      = 17
write(1, "Enter command: ", 15)         = 15
read(0, "-1\n", 1024)                   = 3
lseek(0, -1, SEEK_CUR)                  = -1 ESPIPE (Illegal seek)
lseek(0, -1, SEEK_CUR)                  = -1 ESPIPE (Illegal seek)
exit_group(0)                   = ?
```

+++ exited with 0 +++

program2

execve("./program2", ["./program2"], 0x7ffc200f2a20 /* 91 vars */) = 0
brk(NULL)   = 0x5ea03d2cc000
access("/etc/ld.so.preload", R_OK)   = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=171215, ...}) = 0
mmap(NULL, 171215, PROT_READ, MAP_PRIVATE, 3, 0) = 0x77e6f350e000
close(3)   = 0
openat(AT_FDCWD, "/usr/lib/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360w\2\0\0\0\0\0"..., 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
fstat(3, {st_mode=S_IFREG|0755, st_size=2145632, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x77e6f350c000
pread64(3, "\6\0\0\0\4\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0@\0\0\0\0\0\0\0"..., 896, 64) = 896
mmap(NULL, 2169904, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x77e6f3200000
mmap(0x77e6f3224000, 1511424, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x24000) = 0x77e6f3224000
mmap(0x77e6f3395000, 454656, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x195000) = 0x77e6f3395000
mmap(0x77e6f3404000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x203000) = 0x77e6f3404000
mmap(0x77e6f340a000, 31792, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x77e6f340a000
close(3)   = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x77e6f3509000
arch_prctl(ARCH_SET_FS, 0x77e6f3509740) = 0
set_tid_address(0x77e6f3509a10)   = 322560
set_robust_list(0x77e6f3509a20, 24)   = 0
rseq(0x77e6f3509680, 0x20, 0, 0x53053053) = 0
mprotect(0x77e6f3404000, 16384, PROT_READ) = 0
mprotect(0x5ea03be00000, 4096, PROT_READ) = 0
mprotect(0x77e6f3577000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
getrandom("\xac\x98\x37\xe2\xc9\x43\x1b\x1e", 8, GRND_NONBLOCK) = 8
munmap(0x77e6f350e000, 171215)   = 0
brk(NULL)   = 0x5ea03d2cc000
brk(0x5ea03d2ed000)   = 0x5ea03d2ed000
openat(AT_FDCWD, "./lib1.so", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=15008, ...}) = 0
getcwd("/home/akella/Documents/University/OSI/lab_04/build", 128) = 51

```
mmap(NULL, 16408, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x77e6f3533000
mmap(0x77e6f3534000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1000) = 0x77e6f3534000
mmap(0x77e6f3535000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x77e6f3535000
mmap(0x77e6f3536000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x77e6f3536000
close(3)                      = 0
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=171215, ...}) = 0
mmap(NULL, 171215, PROT_READ, MAP_PRIVATE, 3, 0) = 0x77e6f34df000
close(3)                      = 0
openat(AT_FDCWD, "/usr/lib/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1100400, ...}) = 0
mmap(NULL, 1102152, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x77e6f30f2000
mmap(0x77e6f3101000, 569344, PROT_READ|PROT_EXEC, MAP_PRIVATE|
MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x77e6f3101000
mmap(0x77e6f318c000, 466944, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x9a000) = 0x77e6f318c000
mmap(0x77e6f31fe000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x10b000) = 0x77e6f31fe000
close(3)                      = 0
mprotect(0x77e6f31fe000, 4096, PROT_READ) = 0
mprotect(0x77e6f3536000, 4096, PROT_READ) = 0
munmap(0x77e6f34df000, 171215)        = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
write(1, "Commands:\n", 10)           = 10
write(1, " 0 - switch libs\tusage: 0\n", 26) = 26
write(1, " 1 - Pi func\t\tusage: 1 <num_digi"..., 36) = 36
write(1, " 2 - array sort func\tusage: 2 <N"..., 69) = 69
write(1, "-1 - exit\t\tusage: -1\n", 21) = 21
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
write(1, "Enter command: ", 15)       = 15
read(0, "1 100\n", 1024)              = 6
write(1, "Pi: 3.131593\n", 13)         = 13
write(1, "Enter command: ", 15)        = 15
read(0, "2 4 1\n", 1024)              = 6
read(0, " 3 2 4\n", 1024)             = 7
write(1, "Result: 1 2 3 4 \n", 17)     = 17
write(1, "Enter command: ", 15)        = 15
read(0, "0\n", 1024)                  = 2
munmap(0x77e6f3533000, 16408)         = 0
munmap(0x77e6f30f2000, 1102152)       = 0
openat(AT_FDCWD, "./lib2.so", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\0\0\0\0\0\0\0"..., 832) = 832
```

```
fstat(3, {st_mode=S_IFREG|0755, st_size=14888, ...}) = 0
getcwd("/home/akella/Documents/University/OSI/lab_04/build", 128) = 51
mmap(NULL, 16400, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x77e6f3533000
mmap(0x77e6f3534000, 4096, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1000) = 0x77e6f3534000
mmap(0x77e6f3535000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x77e6f3535000
mmap(0x77e6f3536000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x2000) = 0x77e6f3536000
close(3)                    = 0
mprotect(0x77e6f3536000, 4096, PROT_READ) = 0
write(1, "Switched to lib2.so\n", 20)   = 20
write(1, "Enter command: ", 15)       = 15
read(0, "1 100\n", 1024)            = 6
write(1, "Pi: 3.133792\n", 13)        = 13
write(1, "Enter command: ", 15)       = 15
read(0, "-1\n", 1024)               = 3
munmap(0x77e6f3533000, 16400)         = 0
lseek(0, -1, SEEK_CUR)             = -1 ESPIPE (Illegal seek)
lseek(0, -1, SEEK_CUR)             = -1 ESPIPE (Illegal seek)
exit_group(0)                 = ?
+++ exited with 0 +++
```

Вывод

Проделав данные лабораторные работы я научилась работать с
различными системными вызовами, корректно обрабатывать результат их
выполнения, реализовывать различные алгоритмы и системы на основе
системных вызовов. Сделала вывод, что работать с системными вызовами
нужно аккуратно и осторожно