

Московский Авиационный Институт
(Национальный Исследовательский Университет)
Факультет информационных технологий и прикладной математики
Кафедра вычислительной математики и программирования

**Лабораторная работа №1 по курсу
«Операционные системы»**

Тема работы

**Приобретение практических навыков диагностики
работы программного обеспечения.**

Студент: Полонский Кирилл Андреевич

Группа: М8О-208Б-20

Вариант: __

Преподаватель: Миронов Евгений Сергеевич

Оценка: _____

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Репозиторий

https://github.com/kirillpolonskii/OS/tree/master/os_lab1

Постановка задачи

При выполнении последующих лабораторных работ 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 должен содержать краткую сводку по исследованию последующих ЛР.

Общие сведения о программе

Системные вызовы:

fork — создаёт дочерний процесс

open — открывает или, возможно, создаёт файл

pipe — создаёт однонаправленный канал связи между процессами

dup2 — дублирует файловый дескриптор

Исходный код

Файл str.txt

```
execve("./parent", [".parent"], 0x7ffdeb9b8c70 /* 53 vars */) = 0
brk(NULL) = 0x55811a6f5000
arch_prctl(0x3001 /* ARCH_??? */, 0x7ffe48413950) = -1 EINVAL (Недопустимый аргумент)
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (Нет такого файла или каталога)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=76286, ...}) = 0
mmap(NULL, 76286, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f21f680d000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libasan.so.5", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\200*\2\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=1619400, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f21f680b000
mmap(NULL, 10689608, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f5dd9000
mprotect(0x7f21f5dfb000, 1458176, PROT_NONE) = 0
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mmap(0x7f21f5dfb000, 1236992, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x22000) = 0x7f21f5dfb000
mmap(0x7f21f5f29000, 217088, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x150000)
= 0x7f21f5f29000
mmap(0x7f21f5f5f000, 24576, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x185000) = 0x7f21f5f5f000
mmap(0x7f21f5f65000, 9067592, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f21f5f65000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libstdc++.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\341\t\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=1956992, ...}) = 0
mmap(NULL, 1972224, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f5bf7000
mprotect(0x7f21f5c8d000, 1290240, PROT_NONE) = 0
mmap(0x7f21f5c8d000, 987136, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x96000) = 0x7f21f5c8d000
mmap(0x7f21f5d7e000, 299008, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x187000) = 0x7f21f5d7e000
mmap(0x7f21f5dc8000, 57344, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1d0000) = 0x7f21f5dc8000
mmap(0x7f21f5dd6000, 10240, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f21f5dd6000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libgcc_s.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\3405\0\0\0\0"..., 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=104984, ...}) = 0
mmap(NULL, 107592, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f5bdc000
mmap(0x7f21f5bdf000, 73728, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x3000) = 0x7f21f5bdf000
mmap(0x7f21f5bf1000, 16384, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x15000) =
0x7f21f5bf1000
mmap(0x7f21f5bf5000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x18000) = 0x7f21f5bf5000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\360q\2\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"..., 784, 64) = 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0", 32, 848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) =
68
fstat(3, {st_mode=S_IFREG|0755, st_size=2029224, ...}) = 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"..., 784, 64) = 784
pread64(3, "\4\0\0\0\20\0\0\0\5\0\0\0GNU\0\2\0\0\300\4\0\0\0\3\0\0\0\0\0\0", 32, 848) = 32
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\t\233\222%\274\260\320\31\331\326\10\204\276X>\263"..., 68, 880) =
68
mmap(NULL, 2036952, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f59ea000
mprotect(0x7f21f5a0f000, 1847296, PROT_NONE) = 0
mmap(0x7f21f5a0f000, 1540096, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x25000) = 0x7f21f5a0f000
mmap(0x7f21f5b87000, 303104, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3,
0x19d000) = 0x7f21f5b87000
mmap(0x7f21f5bd2000, 24576, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1e7000) = 0x7f21f5bd2000
mmap(0x7f21f5bd8000, 13528, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f21f5bd8000
close(3) = 0

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openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libdl.so.2", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\22\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=18816, ...}) = 0
mmap(NULL, 20752, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f59e4000
mmap(0x7f21f59e5000, 8192, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1000) = 0x7f21f59e5000
mmap(0x7f21f59e7000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x3000) =
0x7f21f59e7000
mmap(0x7f21f59e8000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x3000) = 0x7f21f59e8000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/librt.so.1", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\7\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=40040, ...}) = 0
mmap(NULL, 44000, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f59d9000
mprotect(0x7f21f59dc000, 24576, PROT_NONE) = 0
mmap(0x7f21f59dc000, 16384, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x3000) = 0x7f21f59dc000
mmap(0x7f21f59e0000, 4096, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x7000) =
0x7f21f59e0000
mmap(0x7f21f59e2000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x8000) = 0x7f21f59e2000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\0\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\22\201\0\0\0\0\0"... , 832) = 832
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"... , 68, 824) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=157224, ...}) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f59d7000
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\345Ga\367\265T\320\374\301V)Yf]\223\337"... , 68, 824) = 68
mmap(NULL, 140408, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f59b4000
mmap(0x7f21f59bb000, 69632, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x7000) = 0x7f21f59bb000
mmap(0x7f21f59cc000, 20480, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x18000) =
0x7f21f59cc000
mmap(0x7f21f59d1000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x1c000) = 0x7f21f59d1000
mmap(0x7f21f59d3000, 13432, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7f21f59d3000
close(3) = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libm.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\3\0>\0\1\0\0\0\300\363\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0644, st_size=1369352, ...}) = 0
mmap(NULL, 1368336, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7f21f5865000
mmap(0x7f21f5874000, 684032, PROT_READ|PROT_EXEC,
MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xf000) = 0x7f21f5874000
mmap(0x7f21f591b000, 618496, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0xb6000)
= 0x7f21f591b000
mmap(0x7f21f59b2000, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE,
3, 0x14c000) = 0x7f21f59b2000
close(3) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f5863000
arch_prctl(ARCH_SET_FS, 0x7f21f5863c80) = 0
mprotect(0x7f21f5bd2000, 12288, PROT_READ) = 0
mprotect(0x7f21f59b2000, 4096, PROT_READ) = 0

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mprotect(0x7f21f59d1000, 4096, PROT_READ) = 0
mprotect(0x7f21f59e2000, 4096, PROT_READ) = 0
mprotect(0x7f21f59e8000, 4096, PROT_READ) = 0
mprotect(0x7f21f5bf5000, 4096, PROT_READ) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f5861000
mprotect(0x7f21f5dc8000, 45056, PROT_READ) = 0
mprotect(0x7f21f5f5f000, 12288, PROT_READ) = 0
mprotect(0x55811939f000, 4096, PROT_READ) = 0
mprotect(0x7f21f684d000, 4096, PROT_READ) = 0
munmap(0x7f21f680d000, 76286) = 0
set_tid_address(0x7f21f5863f50) = 16978
set_robust_list(0x7f21f5863f60, 24) = 0
rt_sigaction(SIGRTMIN, {sa_handler=0x7f21f59bbbf0, sa_mask=[], sa_flags=SA_RESTORER|SA_SIGINFO,
sa_restorer=0x7f21f59c93c0}, NULL, 8) = 0
rt_sigaction(SIGRT_1, {sa_handler=0x7f21f59bbc90, sa_mask=[],
sa_flags=SA_RESTORER|SA_RESTART|SA_SIGINFO, sa_restorer=0x7f21f59c93c0}, NULL, 8) = 0
rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
readlink("/proc/self/exe", "/home/kirill/labsMAI/sem3/OS/os_...", 4096) = 47
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f684c000
open("/proc/self/cmdline", O_RDONLY) = 3
read(3, "/parent\0", 4096) = 9
read(3, "", 4087) = 0
close(3) = 0
munmap(0x7f21f684c000, 4096) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f684c000
open("/proc/self/environ", O_RDONLY) = 3
read(3, "SHELL=/bin/bash\0SESSION_MANAGER=...", 4096) = 3324
read(3, "", 772) = 0
close(3) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f681e000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f681d000
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f681b000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f681a000
mmap(NULL, 3481600, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f550f000
futex(0x7f21f59e90c8, FUTEX_WAKE_PRIVATE, 2147483647) = 0
prlimit64(0, RLIMIT_CORE, {rlim_cur=0, rlim_max=0}, NULL) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6819000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "558119399000-55811939b000 r--p 0"... , 4096) = 4043
read(3, "7f21f5bf1000-7f21f5bf5000 r--p 0"... , 53) = 53
close(3) = 0
munmap(0x7f21f6819000, 4096) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6818000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "558119399000-55811939b000 r--p 0"... , 8192) = 4043

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read(3, "7f21f5bf1000-7f21f5bf5000 r--p 0"... , 4149) = 2869
read(3, "", 1280) = 0
close(3) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6817000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "558119399000-55811939b000 r--p 0"... , 4096) = 4043
read(3, "7f21f5bf1000-7f21f5bf5000 r--p 0"... , 53) = 53
close(3) = 0
munmap(0x7f21f6817000, 4096) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6816000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "558119399000-55811939b000 r--p 0"... , 8192) = 4043
read(3, "7f21f5bf1000-7f21f5bf5000 r--p 0"... , 4149) = 2869
read(3, "", 1280) = 0
close(3) = 0
munmap(0x7f21f6816000, 8192) = 0
mmap(0x7fff7000, 268435456, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x7fff7000
madvise(0x7fff7000, 268435456, MADV_NOHUGEPAGE) = 0
madvise(0x7fff7000, 268435456, MADV_DONTDUMP) = 0
mmap(0x2008fff7000, 15392894357504, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x2008fff7000
madvise(0x2008fff7000, 15392894357504, MADV_NOHUGEPAGE) = 0
madvise(0x2008fff7000, 15392894357504, MADV_DONTDUMP) = 0
mmap(0x8fff7000, 2199023255552, PROT_NONE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x8fff7000
sigaltstack(NULL, {ss_sp=NULL, ss_flags=SS_DISABLE, ss_size=0}) = 0
mmap(NULL, 32768, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6810000
sigaltstack({ss_sp=0x7f21f6810000, ss_flags=0, ss_size=32768}, NULL) = 0
rt_sigaction(SIGSEGV, {sa_handler=0x7f21f5eeda50, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_NODEFER|SA_SIGINFO, sa_restorer=0x7f21f5a30210}, NULL,
8) = 0
rt_sigaction(SIGBUS, {sa_handler=0x7f21f5eeda50, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_NODEFER|SA_SIGINFO, sa_restorer=0x7f21f5a30210}, NULL,
8) = 0
rt_sigaction(SIGFPE, {sa_handler=0x7f21f5eeda50, sa_mask=[],
sa_flags=SA_RESTORER|SA_ONSTACK|SA_NODEFER|SA_SIGINFO, sa_restorer=0x7f21f5a30210}, NULL,
8) = 0
mmap(0x600000000000, 4398046523392, PROT_NONE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x600000000000
mmap(0x640000000000, 12288, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x640000000000
mmap(NULL, 8388608, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) =
0x7f21f4d0f000
mmap(NULL, 57344, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f4d01000
mmap(NULL, 33554432, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2d01000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f680f000
getpid() = 16978
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0

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mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f680e000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "7fff7000-8fff7000 rw-p 00000000 "..., 4096) = 3985
read(3, "7f21f5bd5000-7f21f5bd8000 rw-p 0"..., 111) = 111
close(3) = 0
munmap(0x7f21f680e000, 4096) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f680d000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "7fff7000-8fff7000 rw-p 00000000 "..., 8192) = 3985
read(3, "7f21f5bd5000-7f21f5bd8000 rw-p 0"..., 4207) = 3256
read(3, "", 951) = 0
close(3) = 0
munmap(0x7f21f6818000, 8192) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6819000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "7fff7000-8fff7000 rw-p 00000000 "..., 4096) = 3985
read(3, "7f21f5bd5000-7f21f5bd8000 rw-p 0"..., 111) = 111
close(3) = 0
munmap(0x7f21f6819000, 4096) = 0
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6818000
open("/proc/self/maps", O_RDONLY) = 3
read(3, "7fff7000-8fff7000 rw-p 00000000 "..., 8192) = 3985
read(3, "7f21f5bd5000-7f21f5bd8000 rw-p 0"..., 4207) = 3256
read(3, "", 951) = 0
close(3) = 0
munmap(0x7f21f6818000, 8192) = 0
mmap(0x100048f7b000, 1044480, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS|MAP_NORESERVE, -1, 0) = 0x100048f7b000
madvise(0x100048f7b000, 1044480, MADV_NOHUGEPAGE) = 0
madvise(0x100048f7b000, 1044480, MADV_DONTDUMP) = 0
sigaltstack(NULL, {ss_sp=0x7f21f6810000, ss_flags=0, ss_size=32768}) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6819000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f6818000
mmap(NULL, 2097152, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2b01000
munmap(0x7f21f2b01000, 1044480) = 0
munmap(0x7f21f2d00000, 4096) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2d00000
mmap(NULL, 2097152, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2a00000
munmap(0x7f21f2b00000, 1048576) = 0
mmap(NULL, 1179648, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f28e0000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2bfff00
mmap(NULL, 2097152, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f26e0000
munmap(0x7f21f26e0000, 131072) = 0
munmap(0x7f21f2800000, 917504) = 0

```



```

mmap(0x60be00000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x60be00000000
clock_gettime(CLOCK_MONOTONIC, {tv_sec=16039, tv_nsec=770048095}) = 0
mmap(0x624000000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x624000000000
mmap(0x624e00000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x624e00000000
mmap(0x631000000000, 131072, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x631000000000
mmap(0x631e00000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x631e00000000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2bfc000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2be9000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2be8000
mmap(NULL, 36864, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2bdf000
munmap(0x7f21f2be8000, 4096) = 0
futex(0x7f21f5dd66bc, FUTEX_WAKE_PRIVATE, 2147483647) = 0
futex(0x7f21f5dd66c8, FUTEX_WAKE_PRIVATE, 2147483647) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
mmap(0x619000000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x619000000000
mmap(0x619e00000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x619e00000000
write(1, "Enter file name:\n", 17) = 17
fstat(0, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
read(0, "o.txt\n", 1024) = 6
pipe([3, 4]) = 0
pipe([5, 6]) = 0
openat(AT_FDCWD, "o.txt", O_WRONLY|O_CREAT|O_TRUNC, 0600) = 7
clone(child_stack=NULL, flags=CLONE_CHILD_CLEARTID|CLONE_CHILD_SETTID|SIGCHLD,
child_tidptr=0x7f21f5863f50) = 16980
close(3) = 0
close(6) = 0
write(1, "Enter amount of strings:\n", 25) = 25
read(0, "4\n", 1024) = 2
write(4, "\4\0\0\0", 4) = 4
write(1, "Enter 4 strings:\n", 17) = 17
read(0, "wer\n", 1024) = 4
mmap(0x602000000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x602000000000
mmap(0x602e00000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x602e00000000
write(4, "\3\0\0\0", 4) = 4
write(4, "wer", 3) = 3
read(0, "WER\n", 1024) = 4
write(4, "\3\0\0\0", 4) = 4
write(4, "WER", 3) = 3
read(0, "vewrg\n", 1024) = 6
write(4, "\5\0\0\0", 4) = 4
write(4, "vewrg", 5) = 5
read(0, "F\n", 1024) = 2
write(4, "\1\0\0\0", 4) = 4

```

```

write(4, "F", 1)          = 1
close(4)                  = 0
read(5, "\3\0\0\0", 4)   = 4
read(5, "wer", 3)         = 3
write(1, "In PARENT: <", 12) = 12
write(1, "wer", 3)         = 3
write(1, "> doesn't start with capital\n", 29) = 29
mmap(0x603000000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x603000000000
mmap(0x603e00000000, 65536, PROT_READ|PROT_WRITE,
MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x603e00000000
write(7, "Incorrect string: wer\n", 22) = 22
read(5, "\5\0\0\0", 4)   = 4
read(5, "vewrg", 5)       = 5
write(1, "In PARENT: <", 12) = 12
write(1, "vewrg", 5)       = 5
write(1, "> doesn't start with capital\n", 29) = 29
write(7, "Incorrect string: vewrg\n", 24) = 24
read(5, "\240\206\1\0", 4) = 4
close(5)                  = 0
close(7)                  = 0
gettid()                  = 16978
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2be8000
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2bde000
prctl(PR_GET_DUMPABLE)    = 1 (SUID_DUMP_USER)
getpid()                  = 16978
mmap(NULL, 2101248, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f22ff000
mprotect(0x7f21f22ff000, 4096, PROT_NONE) = 0
rt_sigprocmask(SIG_BLOCK, ~[ILL ABRT BUS FPE SEGV XCPU XFSZ], [], 8) = 0
clone(child_stack=0x7f21f24fff0, flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_UNTRACED) =
16986
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
getpid()                  = 16978
prctl(PR_SET_PTRACER, 16986) = 0
futex(0x7ffe48413570, FUTEX_WAKE_PRIVATE, 1) = 1
sched_yield()             = 0
sched_yield()             = 0
sched_yield()             = 0
sched_yield()             = 0
sched_yield()             = 0
wait4(16986, NULL, __WALL, NULL) = 16986
munmap(0x7f21f22ff000, 2101248) = 0
getpid()                  = 16978
write(2, "==16978==LeakSanitizer has encou"..., 54) = 54
mmap(NULL, 65536, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f21f2bce000
getpid()                  = 16978
write(2, "==16978==HINT: For debugging, tr"..., 102) = 102
getpid()                  = 16978
write(2, "==16978==HINT: LeakSanitizer doe"..., 75) = 75
exit_group(1)             = ?
+++ exited with 1 +++

```

Выводы

В ходе выполнения лабораторной работы я ещё раз повторил уже изученные, а также изучил новые системные вызовы, показанные утилитой `strace`.