

Program statistics

The size of the program is 11,511 bytes. While executing the program occupies 360,000 bytes, and a total 4,192,000 bytes with libs. According to the UNIX size tool, the code section is 2204 bytes and the data is 608 bytes.

Output from simultaneous run

Executing lab3prob1, process id 3752, iteration number 1
Executing lab3prob1, process id 3751, iteration number 1
Executing lab3prob1, process id 3753, iteration number 1
Executing lab3prob1, process id 3752, iteration number 2
Executing lab3prob1, process id 3751, iteration number 2
Executing lab3prob1, process id 3753, iteration number 2
Executing lab3prob1, process id 3752, iteration number 3
Executing lab3prob1, process id 3751, iteration number 3
Executing lab3prob1, process id 3753, iteration number 3
Executing lab3prob1, process id 3751, iteration number 4
Executing lab3prob1, process id 3753, iteration number 4
Executing lab3prob1, process id 3752, iteration number 4
Executing lab3prob1, process id 3752, iteration number 5
Executing lab3prob1, process id 3751, iteration number 5
Executing lab3prob1, process id 3753, iteration number 5
Executing lab3prob1, process id 3751, iteration number 6
Executing lab3prob1, process id 3752, iteration number 6
Executing lab3prob1, process id 3753, iteration number 6
Executing lab3prob1, process id 3752, iteration number 7
Executing lab3prob1, process id 3753, iteration number 7
Executing lab3prob1, process id 3751, iteration number 7
Executing lab3prob1, process id 3752, iteration number 8
Executing lab3prob1, process id 3753, iteration number 8
Executing lab3prob1, process id 3751, iteration number 8
Executing lab3prob1, process id 3753, iteration number 9
Executing lab3prob1, process id 3751, iteration number 9
Executing lab3prob1, process id 3752, iteration number 9
Executing lab3prob1, process id 3751, iteration number 10
Executing lab3prob1, process id 3752, iteration number 10
Executing lab3prob1, process id 3753, iteration number 10
lab3prob1 is now exiting
lab3prob1 is now exiting
lab3prob1 is now exiting

Straces from simultaneous runs**1.**

```
execve("./lab3prob1", ["/lab3prob1", "4", "10"], [/* 63 vars */]) = 0
brk(0)                                = 0x613000
access("/etc/ld.so.nohwcap", F_OK)    = -1 ENOENT (No such file or directory)
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f1b75224000
access("/etc/ld.so.preload", R_OK)    = -1 ENOENT (No such file or directory)
open("/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=90022, ...}) = 0
mmap(NULL, 90022, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f1b7520e000
close(3)                               = 0
```

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open("/etc/lib.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
open("/lib/x86_64-linux-gnu/libc.so.6", 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\320\37\2\0\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1845024, ...}) = 0
mmap(NULL, 3953344, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f1b74c3e000
mprotect(0x7f1b74df9000, 2097152, PROT_NONE) = 0
mmap(0x7f1b74ff9000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_DENYWRITE, 3, 0x1bb000) = 0x7f1b74ff9000
mmap(0x7f1b74fff000, 17088, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|
MAP_ANONYMOUS, -1, 0) = 0x7f1b74fff000
close(3) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f1b7520d000
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f1b7520b000
arch_prctl(ARCH_SET_FS, 0x7f1b7520b740) = 0
mprotect(0x7f1b74ff9000, 16384, PROT_READ) = 0
mprotect(0x600000, 4096, PROT_READ) = 0
mprotect(0x7f1b75226000, 4096, PROT_READ) = 0
munmap(0x7f1b7520e000, 90022) = 0
getpid() = 3752
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigation(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigation(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigation(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigation(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigation(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
```

```

write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
write(2, "Executing lab3prob1, process id "..., 58) = 58
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff6f3af740) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 2), ...}) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f1b75223000
write(1, "lab3prob1 is now exiting\n", 25) = 25
exit_group(0) = ?
+++ exited with 0 +++

```

% time	seconds	usecs/call	calls	errors	syscall
35.63	0.000320	32	10		nanosleep
30.62	0.000275	25	11		write
14.14	0.000127	6	20		rt_sigprocmask
7.24	0.000065	7	10		rt_sigaction
4.68	0.000042	5	8		mmap
1.67	0.000015	5	3		fstat
1.67	0.000015	4	4		mprotect
1.11	0.000010	5	2		open
1.11	0.000010	3	3	3	access
0.78	0.000007	7	1		munmap
0.33	0.000003	2	2		close
0.22	0.000002	2	1		read
0.22	0.000002	2	1		brk
0.22	0.000002	2	1		execve
0.22	0.000002	2	1		arch_prctl
0.11	0.000001	1	1		getpid
100.00	0.000898		79	3	total

2.

```

execve("./lab3prob1", ["/lab3prob1", "4", "10"], [/* 63 vars */]) = 0
brk(0) = 0x18dc000
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7fd32eea2000
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
open("/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=90022, ...}) = 0
mmap(NULL, 90022, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7fd32ee8c000
close(3) = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
open("/lib/x86_64-linux-gnu/libc.so.6", 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\320\37\2\0\0\0\0"..., 832) = 832

```

[illegible]

```

rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff308fab70) = 0
write(2, "Executing lab3prob1, process id "..., 57) = 57
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff308fab70) = 0
write(2, "Executing lab3prob1, process id "..., 58) = 58
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff308fab70) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 2), ...}) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7fd32eea1000
write(1, "lab3prob1 is now exiting\n", 25) = 25
exit_group(0) = ?
+++ exited with 0 +++
% time    seconds  usecs/call   calls   errors syscall
-----
33.47  0.000328      33      10      nanosleep
29.18  0.000286      26      11      write
16.63  0.000163       8      20      rt_sigprocmask
 9.69  0.000095      10      10      rt_sigaction
 4.80  0.000047       6       8      mmap
 2.04  0.000020       7       3      fstat
 1.73  0.000017       4       4      mprotect
 0.71  0.000007       4       2      open
 0.61  0.000006       6       1      munmap
 0.61  0.000006       2       3      3 access
 0.20  0.000002       2       1      brk
 0.10  0.000001       1       1      read
 0.10  0.000001       1       2      close
 0.10  0.000001       1       1      execve
 0.00  0.000000       0       1      getpid
 0.00  0.000000       0       1      arch_prctl
-----
100.00  0.000980           79      3 total

```

3.

```

execve("./lab3prob1", ["/lab3prob1", "4", "10"], [/ * 63 vars */]) = 0
brk(0) = 0x2359000
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f7c876c3000
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)
open("/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=90022, ...}) = 0
mmap(NULL, 90022, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f7c876ad000
close(3) = 0
access("/etc/ld.so.nohwcap", F_OK) = -1 ENOENT (No such file or directory)
open("/lib/x86_64-linux-gnu/libc.so.6", 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\320\37\2\0\0\0\0"... , 832) = 832
fstat(3, {st_mode=S_IFREG|0755, st_size=1845024, ...}) = 0
mmap(NULL, 3953344, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) =
0x7f7c870dd000

```

[illegible]

```

rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff49e5ec10) = 0
write(2, "Executing lab3prob1, process id "...., 58) = 58
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
rt_sigaction(SIGCHLD, NULL, {SIG_DFL, [], 0}, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
nanosleep({4, 0}, 0x7fff49e5ec10) = 0
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(136, 2), ...}) = 0
mmap(NULL, 4096, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) =
0x7f7c876c2000
write(1, "lab3prob1 is now exiting\n", 25) = 25
exit_group(0) = ?

```

+++ exited with 0 +++

% time	seconds	usecs/call	calls	errors	syscall
36.03	0.000339	34	10		nanosleep
30.82	0.000290	26	11		write
15.41	0.000145	7	20		rt_sigprocmask
7.23	0.000068	7	10		rt_sigaction
4.14	0.000039	5	8		mmap
1.70	0.000016	4	4		mprotect
1.38	0.000013	4	3		fstat
0.96	0.000009	5	2		open
0.96	0.000009	3	3	3	access
0.74	0.000007	7	1		munmap
0.32	0.000003	3	1		execve
0.11	0.000001	1	1		read
0.11	0.000001	1	2		close
0.11	0.000001	1	1		brk
0.00	0.000000	0	1		getpid
0.00	0.000000	0	1		arch_prctl
100.00	0.000941		79	3	total