```
dherve@cslinux:~/cscd340/Lab 4/prob 4$ valgrind --leak-check=full --show-reachable=yes ./prob4
==8280== Memcheck, a memory error detector
==8280== Copyright (C) 2002-2011, and GNU GPL'd, by Julian Seward et al.
==8280== Using Valgrind-3.7.0 and LibVEX; rerun with -h for copyright info
==8280== Command: ./prob4
==8280==
Please enter a string (exit to exit) man ls | more
LS(1)
                        User Commands
                                                            LS(1)
NAME
   Is - list directory contents
SYNOPSIS
   Is [OPTION]... [FILE]...
DESCRIPTION
   List information about the FILEs (the current directory by default). Sort entries
   alphabetically if none of -cftuvSUX nor --sort is specified.
   Mandatory arguments to long options are mandatory for short options too.
   -a, --all
       do not ignore entries starting with .
   -A, --almost-all
       do not list implied . and ..
```

```
--author
Please enter a string (exit to exit) Is -al | more
LS(1)
                         User Commands
                                                              LS(1)
NAME
   ls - list directory contents
SYNOPSIS
   Is [OPTION]... [FILE]...
DESCRIPTION
   List information about the FILEs (the current directory by default). Sort entries
    alphabetically if none of -cftuvSUX nor --sort is specified.
   Mandatory arguments to long options are mandatory for short options too.
    -a, --all
       do not ignore entries starting with .
    -A, --almost-all
       do not list implied . and ..
   --author
Please enter a string (exit to exit) exit
==8280==
==8280== HEAP SUMMARY:
==8280== in use at exit: 0 bytes in 0 blocks
```

```
==8280== total heap usage: 12 allocs, 12 frees, 128 bytes allocated
==8280==
==8280== All heap blocks were freed -- no leaks are possible
==8280==
==8280== For counts of detected and suppressed errors, rerun with: -v
==8280== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 2 from 2)
dherve@cslinux:~/cscd340/Lab 4/prob 4$ valgrind --leak-check=full --show-reachable=yes ./prob4
==8559== Memcheck, a memory error detector
==8559== Copyright (C) 2002-2011, and GNU GPL'd, by Julian Seward et al.
==8559== Using Valgrind-3.7.0 and LibVEX; rerun with -h for copyright info
==8559== Command: ./prob4
==8559==
Please enter a string (exit to exit) Is -al | more
total 44
drwxr-xr-x 2 dherve IT-GenericLinuxGroup 4096 Oct 10 23:32.
drwxr-xr-x 6 dherve IT-GenericLinuxGroup 4096 Oct 10 22:56 ...
-rw-r--r- 1 dherve IT-GenericLinuxGroup 4924 Oct 10 23:31 cscd340lab4prob4.c
-rw-r--r-- 1 dherve IT-GenericLinuxGroup 3312 Oct 10 00:00 linkedlist.c
-rw-r--r- 1 dherve IT-GenericLinuxGroup 714 Oct 9 22:26 linkedList.h
-rw-r--r-- 1 dherve IT-GenericLinuxGroup 87 Oct 10 22:52 Makefile
-rwxr-xr-x 1 dherve IT-GenericLinuxGroup 13923 Oct 10 23:32 prob4
Please enter a string (exit to exit) exit
==8559==
==8559== HEAP SUMMARY:
==8559== in use at exit: 0 bytes in 0 blocks
==8559== total heap usage: 12 allocs, 12 frees, 128 bytes allocated
==8559==
==8559== All heap blocks were freed -- no leaks are possible
==8559==
```

```
==8559== For counts of detected and suppressed errors, rerun with: -v
==8559== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 2 from 2)
dherve@cslinux:~/cscd340/Lab 4/prob 4$ valgrind --leak-check=full --show-reachable=yes ./prob4
==8646== Memcheck, a memory error detector
==8646== Copyright (C) 2002-2011, and GNU GPL'd, by Julian Seward et al.
==8646== Using Valgrind-3.7.0 and LibVEX; rerun with -h for copyright info
==8646== Command: ./prob4
==8646==
Please enter a string (exit to exit) Is -I | wc -w
47
Please enter a string (exit to exit) ps aux | less
47
Please enter a string (exit to exit) ps aux | wc
47
Please enter a string (exit to exit) exit
==8646==
==8646== HEAP SUMMARY:
==8646== in use at exit: 0 bytes in 0 blocks
==8646== total heap usage: 15 allocs, 15 frees, 152 bytes allocated
==8646==
==8646== All heap blocks were freed -- no leaks are possible
==8646==
==8646== For counts of detected and suppressed errors, rerun with: -v
==8646== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 2 from 2)
dherve@cslinux:~/cscd340/Lab 4/prob 4$
```