

```
frejat10@ubuntu:~/Desktop/gomesbhw8$ valgrind ./mssh
```

```
==38927== Memcheck, a memory error detector
```

```
==38927== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
```

```
==38927== Using Valgrind-3.11.0 and LibVEX; rerun with -h for copyright info
```

```
==38927== Command: ./mssh
```

```
==38927==
```

```
cur dir: /home/frejat10/Desktop/gomesbhw8
```

```
HISTCOUNTSET = 90
```

```
HISTFILECOUNTSET = 800
```

```
command?: ls
```

```
cscd340hw8.c cscd340hw8.h linkedlist Makefile~ myDir process utils
```

```
cscd340hw8.c~ history Makefile mssh pipes tokenize
```

```
command?: ls
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cscd340hw8.c cscd340hw8.h linkedlist Makefile~ myDir process utils
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```

```
cscd340hw8.c~ history Makefile mssh pipes tokenize
```

```
command?: exit
```

```
exit on PWD: /home/frejat10/Desktop/gomesbhw8
```

```
==38927== Invalid read of size 8
```

```
==38927== at 0x401966: cleanType (history.c:62)
```

```
==38927== by 0x402CF1: clearList (linkedList.c:97)
```

```
==38927== by 0x40132F: main (cscd340hw8.c:87)
```

```
==38927== Address 0x5203810 is 0 bytes inside a block of size 24 free'd
```

```
==38927== at 0x4C2CE2B: free (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==38927== by 0x401A2A: clean (makeArgs.c:14)
==38927== by 0x401310: main (cscd340hw8.c:85)
==38927== Block was alloc'd at
==38927== at 0x4C2DB95: calloc (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==38927== by 0x401CA2: makeargs (makeArgs.c:77)
==38927== by 0x4010EC: main (cscd340hw8.c:44)
==38927==
==38927== Invalid write of size 8
==38927== at 0x401986: cleanType (history.c:63)
==38927== by 0x402CF1: clearList (linkedList.c:97)
==38927== by 0x40132F: main (cscd340hw8.c:87)
==38927== Address 0x5203810 is 0 bytes inside a block of size 24 free'd
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==38927== at 0x4C2CE2B: free (in /usr/lib/valgrind/vgpreload_memcheck-amd64-linux.so)
==38927== by 0x4019AB: cleanType (history.c:66)
==38927== by 0x402CF1: clearList (linkedList.c:97)
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==38927== by 0x401CA2: makeargs (makeArgs.c:77)
==38927== by 0x4010EC: main (cscd340hw8.c:44)
==38927==
==38927==
==38927== HEAP SUMMARY:
==38927== in use at exit: 0 bytes in 0 blocks
==38927== total heap usage: 71 allocs, 72 frees, 2,449 bytes allocated
==38927==
==38927== All heap blocks were freed -- no leaks are possible
==38927==
==38927== For counts of detected and suppressed errors, rerun with: -v
==38927== ERROR SUMMARY: 3 errors from 3 contexts (suppressed: 0 from 0)
frejat10@ubuntu:~/Desktop/gomesbhw8$ valgrind ./mssh
==38933== Memcheck, a memory error detector
==38933== Copyright (C) 2002-2015, and GNU GPL'd, by Julian Seward et al.
==38933== Using Valgrind-3.11.0 and LibVEX; rerun with -h for copyright info
==38933== Command: ./mssh
==38933==
cur dir: /home/frejat10/Desktop/gomesbhw8
HISTCOUNTSET = 90
HISTFILECOUNTSET = 800

command?: history
----- LIST PRINTED -----
1 ls
2 ls
```

3 ls

4 ls

5 ls

6 ls

7 ls

8 ls

9 ls

10 history

==38934==

==38934== HEAP SUMMARY:

==38934== in use at exit: 715 bytes in 42 blocks

==38934== total heap usage: 90 allocs, 48 frees, 2,201 bytes allocated

==38934==

==38934== LEAK SUMMARY:

==38934== definitely lost: 0 bytes in 0 blocks

==38934== indirectly lost: 0 bytes in 0 blocks

==38934== possibly lost: 0 bytes in 0 blocks

==38934== still reachable: 715 bytes in 42 blocks

==38934== suppressed: 0 bytes in 0 blocks

==38934== Rerun with --leak-check=full to see details of leaked memory

==38934==

==38934== For counts of detected and suppressed errors, rerun with: -v

==38934== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)

command?: !3

testing id: 3

command found: ls

cscd340hw8.c cscd340hw8.h linkedlist Makefile~ myDir process utils

```
cscd340hw8.c~ history    Makefile    mssh    pipes tokenize
==38935==
==38935== HEAP SUMMARY:
==38935==    in use at exit: 782 bytes in 46 blocks
==38935== total heap usage: 110 allocs, 64 frees, 2,412 bytes allocated
==38935==
==38935== LEAK SUMMARY:
==38935==    definitely lost: 0 bytes in 0 blocks
==38935==    indirectly lost: 0 bytes in 0 blocks
==38935==    possibly lost: 0 bytes in 0 blocks
==38935==    still reachable: 782 bytes in 46 blocks
==38935==    suppressed: 0 bytes in 0 blocks
==38935== Rerun with --leak-check=full to see details of leaked memory
==38935==
==38935== For counts of detected and suppressed errors, rerun with: -v
==38935== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
```

command?: !!

command found: ls

```
cscd340hw8.c cscd340hw8.h linkedlist Makefile~ myDir process utils
```

```
cscd340hw8.c~ history    Makefile    mssh    pipes tokenize
```

```
==38937==
==38937== HEAP SUMMARY:
==38937==    in use at exit: 849 bytes in 50 blocks
==38937== total heap usage: 124 allocs, 74 frees, 2,566 bytes allocated
==38937==
==38937== LEAK SUMMARY:
==38937==    definitely lost: 0 bytes in 0 blocks
==38937==    indirectly lost: 0 bytes in 0 blocks
```

```
==38937==    possibly lost: 0 bytes in 0 blocks
==38937==    still reachable: 849 bytes in 50 blocks
==38937==    suppressed: 0 bytes in 0 blocks
==38937== Rerun with --leak-check=full to see details of leaked memory
==38937==
==38937== For counts of detected and suppressed errors, rerun with: -v
==38937== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
```

```
command?: pwd | wc -w
```

```
1
```

```
command?: make
```

```
make: 'mssh' is up to date.
```

```
command?: ./mssh
```

```
cur dir: /home/frejat10/Desktop/gomesbhw8
```

```
HISTCOUNTSET = 90
```

```
HISTFILECOUNTSET = 800
```

```
command?: pwd
```

```
/home/frejat10/Desktop/gomesbhw8
```

```
command?: ps
```

PID	TTY	TIME	CMD
38877	pts/2	00:00:00	bash
38933	pts/2	00:00:00	memcheck-amd64-
38942	pts/2	00:00:00	mssh
38944	pts/2	00:00:00	ps

command?: exit

exit on PWD: /home/frejat10/Desktop/gomesbhw8

\*\*\* Error in `./mssh': free(): invalid pointer: 0x00000000008ac0e0 \*\*\*

command?: exit

exit on PWD: /home/frejat10/Desktop/gomesbhw8

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==38933== by 0x402CF1: clearList (linkedList.c:97)

==38933== by 0x40132F: main (cscd340hw8.c:87)

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==38933== by 0x401CA2: makeargs (makeArgs.c:77)
==38933== by 0x4010EC: main (cscd340hw8.c:44)
==38933==
==38933==
==38933== HEAP SUMMARY:
==38933== in use at exit: 0 bytes in 0 blocks
==38933== total heap usage: 286 allocs, 287 frees, 4,751 bytes allocated
==38933==
==38933== All heap blocks were freed -- no leaks are possible
==38933==
==38933== For counts of detected and suppressed errors, rerun with: -v
==38933== ERROR SUMMARY: 3 errors from 3 contexts (suppressed: 0 from 0)
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