הרצה על קובץ שמבצע MALLOC על הערימה ללא שחרור זכרון מתאים.

BasicCHeck.sh | mainp.cpp | makefile | snir.sh | main.c

```c
#include <stdlib.h>
#include <stdio.h>
int main(int argc, char* argv[]) {
    malloc(sizeof(char));
    printf("%s\n",argv[1]);
    return 0;
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
==12778== LEAK SUMMARY:
==12778==    definitely lost: 1 bytes in 1 blocks
==12778==    indirectly lost: 0 bytes in 0 blocks
==12778==      possibly lost: 0 bytes in 0 blocks
==12778==    still reachable: 0 bytes in 0 blocks
==12778==         suppressed: 0 bytes in 0 blocks
==12778==
==12778== For counts of detected and suppressed errors, rerun with: -v
==12778== ERROR SUMMARY: 1 errors from 1 contexts (suppressed: 0 from 0)
\n c/main
valgrind failed 15
==12779== Helgrind, a thread error detector
==12779== Copyright (C) 2007-2017, and GNU GPL'd, by OpenWorks LLP et al.
==12779== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==12779== Command: c/main SOMESTRINGARGUMENT
==12779==
SOMESTRINGARGUMENT
==12779==
==12779== For counts of detected and suppressed errors, rerun with: -v
==12779== Use --history-level=approx or =none to gain increased speed, at
==12779== the cost of reduced accuracy of conflicting-access information
==12779== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
helgrind success 0
    Compilation     Memory leaks    thread race
        PASS            FAIL            PASS
osboxes@osboxes:~/Desktop/temp$
```

0 0

הרצה על קובץ C++ שמפעיל Threads וגם מערך של מספרים על הערימה הדינאמית ושחרורם.

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BasicCHeck.sh | mainp.cpp × | makefile | snir.sh | main.c

```
1   #include <pthread.h>
2
3   int var = 0;
4
5   void* child_fn ( void* arg ) {
6      var++; /* Unprotected relative to parent / / this is line 6 */
7      return NULL;
8   }
9
10  int main ( void ) {
11     pthread_t child;
12     pthread_create(&child, NULL, child_fn, NULL);
13     var++; /* Unprotected relative to child / / this is line 13 */
14     pthread_join(child, NULL);
15     int* i =new int[1000];
16     delete[] i;
17     return 0;
18  }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
==12815==    by 0x550B88E: clone (clone.S:95)
==12815==  Address 0x309014 is 0 bytes inside data symbol "var"
==12815==
==12815== ----------------------------------------------------------------
==12815==
==12815== Possible data race during write of size 4 at 0x309014 by thread #1
==12815== Locks held: none
==12815==    at 0x108865: main (in /home/osboxes/Desktop/temp/c/mainp)
==12815==
==12815== This conflicts with a previous write of size 4 by thread #2
==12815== Locks held: none
==12815==    at 0x10881B: child_fn(void*) (in /home/osboxes/Desktop/temp/c/mainp)
==12815==    by 0x4C36C26: ??? (in /usr/lib/valgrind/vgpreload_helgrind-amd64-linux.so)
==12815==    by 0x4E496DA: start_thread (pthread_create.c:463)
==12815==    by 0x550B88E: clone (clone.S:95)
==12815==  Address 0x309014 is 0 bytes inside data symbol "var"
==12815==
==12815==
==12815== For counts of detected and suppressed errors, rerun with: -v
==12815== Use --history-level=approx or =none to gain increased speed, at
==12815== the cost of reduced accuracy of conflicting-access information
==12815== ERROR SUMMARY: 2 errors from 2 contexts (suppressed: 0 from 0)
helgrind failed 14
    Compilation     Memory leaks    thread race
        PASS            PASS            FAIL
osboxes@osboxes:~/Desktop/temp$
```

~/Desktop/temp/c/mainp.cpp