

Submitter: dereky1(Yang,Derek)

=====start of the write-up=====

Main:

```
dereky1@sterling-malory-archer:~/45c/hw7
dereky1@sterling-malory-archer 17:44:23 ~
$ cd 45c/hw7
dereky1@sterling-malory-archer 17:44:31 ~/45c/hw7
$ g++ main.cpp -o main
dereky1@sterling-malory-archer 17:44:49 ~/45c/hw7
$ ./main
    0      0      0      0      0
    0      1      2      3      4
    0      2      4      6      8
    0      3      6      9     12
    0      4      8     12     16
    0      5     10     15     20
    0      6     12     18     24
    0      7     14     21     28
    0      8     16     24     32
    0      9     18     27     36

Accessing Matrix Index of [5][5]: Array Index is out of bounds
Accessing Matrix Index of [5][4]: 20
Accessing Matrix Index of [5][3]: 15
Accessing Matrix Index of [5][2]: 10
Accessing Matrix Index of [5][1]: 5
Accessing Matrix Index of [5][0]: 0
Accessing Matrix Index of [5][-1]: Array Index is out of bounds
Accessing Matrix Index of [5][-2]: Array Index is out of bounds

    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0
    0.00    1.00    2.00    3.00    4.00    5.00    6.00    7.00    8.00    9
    0.00    2.00    4.00    6.00    8.00   10.00   12.00   14.00   16.00   18
    0.00    3.00    6.00    9.00   12.00   15.00   18.00   21.00   24.00   27
    0.00    4.00    8.00   12.00   16.00   20.00   24.00   28.00   32.00   36
    0.00    5.00   10.00   15.00   20.00   25.00   30.00   35.00   40.00   45
    0.00    6.00   12.00   18.00   24.00   30.00   36.00   42.00   48.00   54
    0.00    7.00   14.00   21.00   28.00   35.00   42.00   49.00   56.00   63

Accessing Matrix Index of [5][10]: Array Index is out of bounds
Accessing Matrix Index of [5][9]: 45.00
Accessing Matrix Index of [5][8]: 40.00
Accessing Matrix Index of [5][7]: 35.00
Accessing Matrix Index of [5][6]: 30.00
Accessing Matrix Index of [5][5]: 25.00
Accessing Matrix Index of [5][4]: 20.00
Accessing Matrix Index of [5][3]: 15.00
Accessing Matrix Index of [5][2]: 10.00
Accessing Matrix Index of [5][1]: 5.00

dereky1@sterling-malory-archer:~/45c/hw7
Accessing Matrix Index of [5][0]: 0.00
Accessing Matrix Index of [5][-1]: Array Index is out of bounds
Accessing Matrix Index of [5][-2]: Array Index is out of bounds

dereky1@sterling-malory-archer 17:44:51 ~/45c/hw7
$
```

Submitter: dereky1(Yang,Derek)

Valgrind:

```
dereky1@sterling-malory-archer:~/45c/hw7
derekyl@sterling-malory-archer 17:48:23 ~/45c/hw7
$ valgrind --tool=memcheck --leak-check=yes --show-reachable=yes --track-origins=yes main
==13643== Memcheck, a memory error detector
==13643== Copyright (C) 2002-2012, and GNU GPL'd, by Julian Seward et al.
==13643== Using Valgrind-3.8.1 and LibVEX; rerun with -h for copyright info
==13643== Command: main
==13643==
0      0      0      0      0
0      1      2      3      4
0      2      4      6      8
0      3      6      9     12
0      4      8     12     16
0      5     10     15     20
0      6     12     18     24
0      7     14     21     28
0      8     16     24     32
0      9     18     27     36

Accessing Matrix Index of [5][5]: Array Index is out of bounds
Accessing Matrix Index of [5][4]: 20
Accessing Matrix Index of [5][3]: 15
Accessing Matrix Index of [5][2]: 10
Accessing Matrix Index of [5][1]: 5
Accessing Matrix Index of [5][0]: 0
Accessing Matrix Index of [5][-1]: Array Index is out of bounds
Accessing Matrix Index of [5][-2]: Array Index is out of bounds

0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
0.00  1.00  2.00  3.00  4.00  5.00  6.00  7.00  8.00  9.00
0.00  2.00  4.00  6.00  8.00  10.00 12.00 14.00 16.00 18.00
0.00  3.00  6.00  9.00 12.00 15.00 18.00 21.00 24.00 27.00
0.00  4.00  8.00 12.00 16.00 20.00 24.00 28.00 32.00 36.00
0.00  5.00 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00
0.00  6.00 12.00 18.00 24.00 30.00 36.00 42.00 48.00 54.00
0.00  7.00 14.00 21.00 28.00 35.00 42.00 49.00 56.00 63.00

Accessing Matrix Index of [5][10]: Array Index is out of bounds
Accessing Matrix Index of [5][9]: 45.00
Accessing Matrix Index of [5][8]: 40.00
Accessing Matrix Index of [5][7]: 35.00
Accessing Matrix Index of [5][6]: 30.00
Accessing Matrix Index of [5][5]: 25.00
Accessing Matrix Index of [5][4]: 20.00
Accessing Matrix Index of [5][3]: 15.00
Accessing Matrix Index of [5][2]: 10.00
Accessing Matrix Index of [5][1]: 5.00

Accessing Matrix Index of [5][0]: 0.00
Accessing Matrix Index of [5][-1]: Array Index is out of bounds
Accessing Matrix Index of [5][-2]: Array Index is out of bounds

==13643==
==13643== HEAP SUMMARY:
==13643==   in use at exit: 72,704 bytes in 1 blocks
==13643== total heap usage: 45 allocs, 44 frees, 74,750 bytes allocated
==13643==
==13643== 72,704 bytes in 1 blocks are still reachable in loss record 1 of 1
==13643==   at 0x4A06A2E: malloc (vg_replace_malloc.c:270)
==13643==   by 0x4C99ACF: _GLOBAL__sub_I_eh_alloc.cc (eh_alloc.cc:117)
==13643==   by 0x4D4BBC5: ??? (in /pkg/gcc/5.2.0/lib64/libstdc++.so.6.0.21)
==13643==   by 0x4C94482: ??? (in /pkg/gcc/5.2.0/lib64/libstdc++.so.6.0.21)
==13643==
==13643== LEAK SUMMARY:
==13643==   definitely lost: 0 bytes in 0 blocks
==13643==   indirectly lost: 0 bytes in 0 blocks
==13643==   possibly lost: 0 bytes in 0 blocks
==13643==   still reachable: 72,704 bytes in 1 blocks
==13643==   suppressed: 0 bytes in 0 blocks
==13643==
==13643== For counts of detected and suppressed errors, rerun with: -v
==13643== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 6 from 6)
derekyl@sterling-malory-archer 17:49:11 ~/45c/hw7
$
```

=====end of the write-up=====