HW9 Report

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Screenshots for Lab 9.4

Compile

```
$ make
echo        ------------compiling SegregateColors.cpp to create executable program main----------------
------------compiling SegregateColors.cpp to create executable program main----------------
g++  -ggdb   -std=c++11   SegregateColors.cpp   -o   SegregateColors
xiaoweit@andromeda-27 20:21:03 ~/253p/hw/hw9/segregate
$ █
```

Test1

```
$ valgrind ./SegregateColors
==30561== Memcheck, a memory error detector
==30561== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30561== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30561== Command: ./SegregateColors
==30561==
7
G B R R B R G
R R R G G B B ==30561==
==30561== HEAP SUMMARY:
==30561==     in use at exit: 72,704 bytes in 1 blocks
==30561==   total heap usage: 2 allocs, 1 frees, 72,711 bytes allocated
==30561==
==30561== LEAK SUMMARY:
==30561==    definitely lost: 0 bytes in 0 blocks
==30561==    indirectly lost: 0 bytes in 0 blocks
==30561==      possibly lost: 0 bytes in 0 blocks
==30561==    still reachable: 72,704 bytes in 1 blocks
==30561==         suppressed: 0 bytes in 0 blocks
==30561== Rerun with --leak-check=full to see details of leaked memory
==30561==
==30561== For counts of detected and suppressed errors, rerun with: -v
==30561== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:23:56 ~/253p/hw/hw9/segregate
$ █
```

Test 2

```
$ valgrind ./SegregateColors
==30596== Memcheck, a memory error detector
==30596== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30596== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30596== Command: ./SegregateColors
==30596==
1
G
G ==30596==
==30596== HEAP SUMMARY:
==30596==     in use at exit: 72,704 bytes in 1 blocks
==30596==   total heap usage: 2 allocs, 1 frees, 72,705 bytes allocated
==30596==
==30596== LEAK SUMMARY:
==30596==    definitely lost: 0 bytes in 0 blocks
==30596==    indirectly lost: 0 bytes in 0 blocks
==30596==      possibly lost: 0 bytes in 0 blocks
==30596==    still reachable: 72,704 bytes in 1 blocks
==30596==         suppressed: 0 bytes in 0 blocks
==30596== Rerun with --leak-check=full to see details of leaked memory
==30596==
==30596== For counts of detected and suppressed errors, rerun with: -v
==30596== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:24:23 ~/253p/hw/hw9/segregate
$ █
```

Test 3

```
$ valgrind ./SegregateColors
==30672== Memcheck, a memory error detector
==30672== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30672== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30672== Command: ./SegregateColors
==30672==
0
==30672==
==30672== HEAP SUMMARY:
==30672==     in use at exit: 72,704 bytes in 1 blocks
==30672==   total heap usage: 2 allocs, 1 frees, 72,704 bytes allocated
==30672==
==30672== LEAK SUMMARY:
==30672==    definitely lost: 0 bytes in 0 blocks
==30672==    indirectly lost: 0 bytes in 0 blocks
==30672==      possibly lost: 0 bytes in 0 blocks
==30672==    still reachable: 72,704 bytes in 1 blocks
==30672==         suppressed: 0 bytes in 0 blocks
==30672== Rerun with --leak-check=full to see details of leaked memory
==30672==
==30672== For counts of detected and suppressed errors, rerun with: -v
==30672== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:26:07 ~/253p/hw/hw9/segregate
$ █
```

Test 4

```
$ valgrind ./SegregateColors
==30706== Memcheck, a memory error detector
==30706== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30706== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30706== Command: ./SegregateColors
==30706==
20
R G B G G G B B R B R G B R R B B G G B
R R R R G G G G G G G B B B B B B B B ==30706==
==30706== HEAP SUMMARY:
==30706==     in use at exit: 72,704 bytes in 1 blocks
==30706==   total heap usage: 2 allocs, 1 frees, 72,724 bytes allocated
==30706==
==30706== LEAK SUMMARY:
==30706==    definitely lost: 0 bytes in 0 blocks
==30706==    indirectly lost: 0 bytes in 0 blocks
==30706==      possibly lost: 0 bytes in 0 blocks
==30706==    still reachable: 72,704 bytes in 1 blocks
==30706==         suppressed: 0 bytes in 0 blocks
==30706== Rerun with --leak-check=full to see details of leaked memory
==30706==
==30706== For counts of detected and suppressed errors, rerun with: -v
==30706== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:27:14 ~/253p/hw/hw9/segregate
$
```

Screenshots for Lab 9.5

Compile

```
$ make
echo        ------------compiling SubarrayofLargestSum.cpp to create executable program main----------------
------------compiling SubarrayofLargestSum.cpp to create executable program main----------------
g++  -ggdb  -std=c++11   SubarrayofLargestSum.cpp   -o   SubarrayofLargestSum
xiaoweit@andromeda-27 20:27:59 ~/253p/hw/hw9/largestSum
$
```

Test 1

```
$ valgrind ./
Makefile                    SubarrayofLargestSum        SubarrayofLargestSum.cpp    SubarrayofLargestSum.dSYM/
xiaoweit@andromeda-27 20:27:59 ~/253p/hw/hw9/largestSum
$ valgrind ./SubarrayofLargestSum
==30841== Memcheck, a memory error detector
==30841== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30841== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30841== Command: ./SubarrayofLargestSum
==30841==
6
34 -50 42 14 -5 86
137
==30841==
==30841== HEAP SUMMARY:
==30841==     in use at exit: 72,704 bytes in 1 blocks
==30841==   total heap usage: 2 allocs, 1 frees, 72,728 bytes allocated
==30841==
==30841== LEAK SUMMARY:
==30841==    definitely lost: 0 bytes in 0 blocks
==30841==    indirectly lost: 0 bytes in 0 blocks
==30841==      possibly lost: 0 bytes in 0 blocks
==30841==    still reachable: 72,704 bytes in 1 blocks
==30841==         suppressed: 0 bytes in 0 blocks
==30841== Rerun with --leak-check=full to see details of leaked memory
==30841==
==30841== For counts of detected and suppressed errors, rerun with: -v
==30841== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:28:58 ~/253p/hw/hw9/largestSum
$
```

Test 2

```
$ valgrind ./SubarrayofLargestSum
==30883== Memcheck, a memory error detector
==30883== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30883== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30883== Command: ./SubarrayofLargestSum
==30883==
0
0
==30883==
==30883== HEAP SUMMARY:
==30883==     in use at exit: 72,704 bytes in 1 blocks
==30883==   total heap usage: 2 allocs, 1 frees, 72,704 bytes allocated
==30883==
==30883== LEAK SUMMARY:
==30883==    definitely lost: 0 bytes in 0 blocks
==30883==    indirectly lost: 0 bytes in 0 blocks
==30883==      possibly lost: 0 bytes in 0 blocks
==30883==    still reachable: 72,704 bytes in 1 blocks
==30883==         suppressed: 0 bytes in 0 blocks
==30883== Rerun with --leak-check=full to see details of leaked memory
==30883==
==30883== For counts of detected and suppressed errors, rerun with: -v
==30883== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:29:28 ~/253p/hw/hw9/largestSum
$
```

Test 3

```
$ valgrind ./SubarrayofLargestSum
==30901== Memcheck, a memory error detector
==30901== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30901== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30901== Command: ./SubarrayofLargestSum
==30901==
1
100
100
==30901==
==30901== HEAP SUMMARY:
==30901==     in use at exit: 72,704 bytes in 1 blocks
==30901==   total heap usage: 2 allocs, 1 frees, 72,708 bytes allocated
==30901==
==30901== LEAK SUMMARY:
==30901==    definitely lost: 0 bytes in 0 blocks
==30901==    indirectly lost: 0 bytes in 0 blocks
==30901==      possibly lost: 0 bytes in 0 blocks
==30901==    still reachable: 72,704 bytes in 1 blocks
==30901==         suppressed: 0 bytes in 0 blocks
==30901== Rerun with --leak-check=full to see details of leaked memory
==30901==
==30901== For counts of detected and suppressed errors, rerun with: -v
==30901== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:29:48 ~/253p/hw/hw9/largestSum
$ █
```

Test 4

```
$ valgrind ./SubarrayofLargestSum
==30950== Memcheck, a memory error detector
==30950== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==30950== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==30950== Command: ./SubarrayofLargestSum
==30950==
20
100 -2 3 40 91 23 59 -4 2 -10 -100 23 42 -99 12 -45 7 123 -42 10
314
==30950==
==30950== HEAP SUMMARY:
==30950==     in use at exit: 72,704 bytes in 1 blocks
==30950==   total heap usage: 2 allocs, 1 frees, 72,784 bytes allocated
==30950==
==30950== LEAK SUMMARY:
==30950==    definitely lost: 0 bytes in 0 blocks
==30950==    indirectly lost: 0 bytes in 0 blocks
==30950==      possibly lost: 0 bytes in 0 blocks
==30950==    still reachable: 72,704 bytes in 1 blocks
==30950==         suppressed: 0 bytes in 0 blocks
==30950== Rerun with --leak-check=full to see details of leaked memory
==30950==
==30950== For counts of detected and suppressed errors, rerun with: -v
==30950== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 20:31:04 ~/253p/hw/hw9/largestSum
$
```

Screenshots for Lab 9.6

Compile

```
$ make
echo       ------------compiling RotatedArray.cpp to create executable program main----------------
------------compiling RotatedArray.cpp to create executable program main----------------
g++  -ggdb  -std=c++11  RotatedArray.cpp  -o  RotatedArray
xiaoweit@andromeda-27 21:10:32 ~/253p/hw/hw9/rotate
$
```

Test 1

```
$ valgrind ./RotatedArray
==14074== Memcheck, a memory error detector
==14074== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==14074== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==14074== Command: ./RotatedArray
==14074==
6
13 18 25 2 8 10
8
4
==14074==
==14074== HEAP SUMMARY:
==14074==     in use at exit: 72,704 bytes in 1 blocks
==14074==   total heap usage: 2 allocs, 1 frees, 72,728 bytes allocated
==14074==
==14074== LEAK SUMMARY:
==14074==    definitely lost: 0 bytes in 0 blocks
==14074==    indirectly lost: 0 bytes in 0 blocks
==14074==      possibly lost: 0 bytes in 0 blocks
==14074==    still reachable: 72,704 bytes in 1 blocks
==14074==         suppressed: 0 bytes in 0 blocks
==14074== Rerun with --leak-check=full to see details of leaked memory
==14074==
==14074== For counts of detected and suppressed errors, rerun with: -v
==14074== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 21:11:22 ~/253p/hw/hw9/rotate
$ █
```

Test 2

```
$ valgrind ./RotatedArray
==14119== Memcheck, a memory error detector
==14119== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==14119== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==14119== Command: ./RotatedArray
==14119==
6
13 18 25 2 8 10
18
1
==14119==
==14119== HEAP SUMMARY:
==14119==     in use at exit: 72,704 bytes in 1 blocks
==14119==   total heap usage: 2 allocs, 1 frees, 72,728 bytes allocated
==14119==
==14119== LEAK SUMMARY:
==14119==    definitely lost: 0 bytes in 0 blocks
==14119==    indirectly lost: 0 bytes in 0 blocks
==14119==      possibly lost: 0 bytes in 0 blocks
==14119==    still reachable: 72,704 bytes in 1 blocks
==14119==         suppressed: 0 bytes in 0 blocks
==14119== Rerun with --leak-check=full to see details of leaked memory
==14119==
==14119== For counts of detected and suppressed errors, rerun with: -v
==14119== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 21:12:08 ~/253p/hw/hw9/rotate
$ 
```

Test 3

```
$ valgrind ./RotatedArray
==14170== Memcheck, a memory error detector
==14170== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==14170== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==14170== Command: ./RotatedArray
==14170==
6
2 8 10 13 18 25
18
4
==14170==
==14170== HEAP SUMMARY:
==14170==     in use at exit: 72,704 bytes in 1 blocks
==14170==   total heap usage: 2 allocs, 1 frees, 72,728 bytes allocated
==14170==
==14170== LEAK SUMMARY:
==14170==    definitely lost: 0 bytes in 0 blocks
==14170==    indirectly lost: 0 bytes in 0 blocks
==14170==      possibly lost: 0 bytes in 0 blocks
==14170==    still reachable: 72,704 bytes in 1 blocks
==14170==         suppressed: 0 bytes in 0 blocks
==14170== Rerun with --leak-check=full to see details of leaked memory
==14170==
==14170== For counts of detected and suppressed errors, rerun with: -v
==14170== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 21:13:05 ~/253p/hw/hw9/rotate
$
```

Test 4

```
$ valgrind ./RotatedArray
==14202== Memcheck, a memory error detector
==14202== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==14202== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==14202== Command: ./RotatedArray
==14202==
6
10 13 18 25 2 8
8
5
==14202==
==14202== HEAP SUMMARY:
==14202==     in use at exit: 72,704 bytes in 1 blocks
==14202==   total heap usage: 2 allocs, 1 frees, 72,728 bytes allocated
==14202==
==14202== LEAK SUMMARY:
==14202==    definitely lost: 0 bytes in 0 blocks
==14202==    indirectly lost: 0 bytes in 0 blocks
==14202==      possibly lost: 0 bytes in 0 blocks
==14202==    still reachable: 72,704 bytes in 1 blocks
==14202==         suppressed: 0 bytes in 0 blocks
==14202== Rerun with --leak-check=full to see details of leaked memory
==14202==
==14202== For counts of detected and suppressed errors, rerun with: -v
==14202== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
xiaoweit@andromeda-27 21:14:00 ~/253p/hw/hw9/rotate
$
```