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Quiz 4 – November 4, 2016 – ECE 264 Fall 2016

The following code compiles and runs, but it has memory errors.

```
 1 #include <stdlib.h>
 2 #include <stdio.h>
 3 int main() {
 4     char* s = malloc(sizeof(*s) * 3);
 5     s[0] = 'A';
 6     s[1] = 'B';
 7     s[2] = 'C';
 8     printf("%s", s);
 9     if(s[3] == 'D') {
10         printf("%c", s[3]);
11     }
12 }
```

Below is the output running `valgrind`. Fill in the blanks below.

To get a solution, simply enter the code above and test in Valgrind.

[...]
==40245== Invalid read of size _____
==40245== at 0x382F447DEC: vfprintf (vfprintf.c:1641)
==40245== by 0x382F44F149: printf (printf.c:35)
==40245== by 0x40064E: main (quiz4.c:8)
==40245== Address 0x4c3d043 is 0 bytes after a block of size _____ alloc'd
==40245== at 0x4A06A2E: malloc (vg_replace_malloc.c:270)
==40245== by 0x400617: main (quiz4.c: _____)
==40245==
==40245== Invalid read of size _____
==40245== at 0x400657: main (quiz4.c:9)
==40245== Address 0x4c3d043 is 0 bytes after a block of size _____ alloc'd
==40245== at 0x4A06A2E: malloc (vg_replace_malloc.c:270)
==40245== by 0x400617: main (quiz4.c: _____)
==40245==
ABC==40245==
==40245== HEAP SUMMARY:
==40245== in use at exit: _____ bytes in _____ blocks
==40245== total heap usage: _____ allocs, _____ frees, _____ bytes allocated
==40245==
==40245== _____ bytes in _____ blocks are definitely lost in loss record 1 of 1
==40245== at 0x4A06A2E: malloc (vg_replace_malloc.c:270)
==40245== by 0x400617: main (quiz4.c: _____)
==40245==
==40245== LEAK SUMMARY:
==40245== definitely lost: _____ bytes in _____ blocks
==40245== indirectly lost: 0 bytes in 0 blocks
==40245== possibly lost: 0 bytes in 0 blocks
==40245== still reachable: 0 bytes in 0 blocks
==40245== suppressed: 0 bytes in 0 blocks