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I pledge my honor that I have abided by the Stevens Honor System.

Lab 3 Report

CS 382 LB

```
Reading symbols from ./a.out...
(gdb) b 19
Breakpoint 1 at 0x1342: file main.c, line 19.
(gdb) run
Starting program: /home/rohan/Downloads/Stevens/CS382/Lab3/handout/handout/a.out
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Empty array created

Breakpoint 1, main () at main.c:19
19          add(arr, i, counter);
(gdb) c
Continuing.

Breakpoint 1, main () at main.c:19
19          add(arr, i, counter);
(gdb) p arr[0]
$1 = 0
(gdb) p counter
$2 = 0
(gdb) █
```

- Checked the values of the params of the called functions using gdb after each iteration
- Noticed counter isn't incrementing after first iteration so added a counter++ on line 20
- As well add on line 26 for second half of array

```

Breakpoint 1, main () at main.c:19
19             add(arr, i, counter);
(gdb) c
Continuing.
0

Breakpoint 1, main () at main.c:19
19             add(arr, i, counter);
(gdb) p arr[0]
$2 = 0
(gdb) p counter
$3 = 1
(gdb) s
add (arr=0x7fffffffdb30, i=2, count=1) at buggy.c:14
14             arr[++count] = i;
(gdb) s
15         }
(gdb) p arr[1]
$4 = 0
(gdb) p arr[2]
$5 = 2
(gdb) █

```

- Used gdb to go through the loop
- After implementing a counter noticed that arr[++count] was assigning to wrong addresses in the arr so got rid of the ++

```

Breakpoint 1, main () at main.c:30
30             if (contains(arr, size, 6))
(gdb) s
contains (arr=0x7fffffffdb30, count=20, target=6) at buggy.c:28
28             for (i = 0; i < count; ++i)
(gdb) s
30                 if (arr[i] == target)
(gdb) s
33                 return 0;
(gdb) █

```

- Use gdb to step by step go through the for loop for contains
- Else statement will cause function to end after first test and not execute full loop, remove the else statement

```

rohan@robojesus:~$ cd Downloads/Stevens/CS382/Lab3/handout/
handout/ _MACOSX/
rohan@robojesus:~$ cd Downloads/Stevens/CS382/Lab3/handout/handout/
rohan@robojesus:~/Downloads/Stevens/CS382/Lab3/handout/handout$ gcc buggy.c main.c -g
rohan@robojesus:~/Downloads/Stevens/CS382/Lab3/handout/handout$ gdb ./a.out
GNU gdb (Ubuntu 12.0.90-0ubuntu1) 12.0.90
Copyright (C) 2022 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
Type "show copying" and "show warranty" for details.
This GDB was configured as "x86_64-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<https://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.

For help, type "help".
Type "apropos word" to search for commands related to "word"...
Reading symbols from ./a.out...
(gdb) run
Starting program: /home/rohan/Downloads/Stevens/CS382/Lab3/handout/handout/a.out
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib/x86_64-linux-gnu/libthread_db.so.1".
Empty array created
0
0 2
0 2 4
0 2 4 6
0 2 4 6 8
0 2 4 6 8 10
0 2 4 6 8 10 12
0 2 4 6 8 10 12 14
0 2 4 6 8 10 12 14 16
0 2 4 6 8 10 12 14 16 18
0 2 4 6 8 10 12 14 16 18 1
0 2 4 6 8 10 12 14 16 18 1 3
0 2 4 6 8 10 12 14 16 18 1 3 5
0 2 4 6 8 10 12 14 16 18 1 3 5 7
0 2 4 6 8 10 12 14 16 18 1 3 5 7 9
0 2 4 6 8 10 12 14 16 18 1 3 5 7 9 11
0 2 4 6 8 10 12 14 16 18 1 3 5 7 9 11 13
0 2 4 6 8 10 12 14 16 18 1 3 5 7 9 11 13 15
0 2 4 6 8 10 12 14 16 18 1 3 5 7 9 11 13 15 17
0 2 4 6 8 10 12 14 16 18 1 3 5 7 9 11 13 15 17 19
Number 6 present in Array
Number 30 not in Array
[Inferior 1 (process 18186) exited normally]
(gdb) █

```

Working code