

CS2263 Lab 2 – Isaac Shoebottom

Exercise 0:

```
[ishoebot@id415m35 Lab3]$ git clone https://vcs.cs.unb.ca/git/cs2263-ishoebot
Cloning into 'cs2263-ishoebot'...
Username for 'https://vcs.cs.unb.ca': ishoebot
Password for 'https://ishoebot@vcs.cs.unb.ca':
warning: You appear to have cloned an empty repository.
[ishoebot@id415m35 Lab3]$ ls
cs2263-ishoebot
[ishoebot@id415m35 Lab3]$ cd cs2263-ishoebot/
[ishoebot@id415m35 cs2263-ishoebot]$
```

Exercise 1:

Question 1:

The pointer variables are incremented correctly. They are shown to go up by the size of the data type they hold. (0x7ffddeee84b4 - 0x7ffddeee84b0 = 4, 0x7ffddeee84a1 - 0x7ffddeee84a0 = 1, 0x7ffddeee8488 - 0x7ffddeee8480 = 8)

Question 2:

The increments of the different pointers are different, not the same. They would only be the same if they were the same type.

```
[ishoebot@id415m35 cs2263-ishoebot]$ ./arithmetic1
lengths = 9, 6, 4
values = 7, m, 3.140000      pointers = 0x7ffddeee84b0, 0x7ffddeee84a0, 0x7ffddeee8480
values = 2, q, -2.718000    pointers = 0x7ffddeee84b4, 0x7ffddeee84a1, 0x7ffddeee8488
values = 5, k, 6.626000    pointers = 0x7ffddeee84b8, 0x7ffddeee84a2, 0x7ffddeee8490
values = 3, z, 0.529000    pointers = 0x7ffddeee84bc, 0x7ffddeee84a3, 0x7ffddeee8498
[ishoebot@id415m35 cs2263-ishoebot]$
```

```
[ishoebot@id415m35 cs2263-ishoebot]$ git add arraylisting.c
[ishoebot@id415m35 cs2263-ishoebot]$ git commit -m "Changed how I printed pointer address in arithmetic1 and added arraylisting.c"
[master 59829c9] Changed how I printed pointer address in arithmetic1 and added arraylisting.c
 1 file changed, 12 insertions(+)
 create mode 100644 arraylisting.c
[ishoebot@id415m35 cs2263-ishoebot]$ git push
Username for 'https://vcs.cs.unb.ca': ishoebot
Password for 'https://ishoebot@vcs.cs.unb.ca':
Counting objects: 4, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 491 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://vcs.cs.unb.ca/git/cs2263-ishoebot
 759579e..59829c9 master -> master
[ishoebot@id415m35 cs2263-ishoebot]$
```

Exercise 2:

```
[ishoebot@id415m35 cs2263-ishoebot]$ ./arraylisting
0      10      0x7ffc54f880d0  10
1      11      0x7ffc54f880d4  11
2      12      0x7ffc54f880d8  12
3      13      0x7ffc54f880dc  13
4      14      0x7ffc54f880e0  14
5      15      0x7ffc54f880e4  15
6      16      0x7ffc54f880e8  16
[ishoebot@id415m35 cs2263-ishoebot]$
```

```
[ishoebot@id415m35 cs2263-ishoebot]$ git add arrindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ git commit -m "Added arrindex.c"
[master 5e17525] Added arrindex.c
 1 file changed, 12 insertions(+)
 create mode 100644 arrindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ git push
Username for 'https://vcs.cs.unb.ca': ishoebot
Password for 'https://ishoebot@vcs.cs.unb.ca':
Counting objects: 4, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 498 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://vcs.cs.unb.ca/git/cs2263-ishoebot
   59829c9..5e17525  master -> master
[ishoebot@id415m35 cs2263-ishoebot]$
```

Exercise 3:

```
[ishoebot@id415m35 cs2263-ishoebot]$ ./arrindex
0
1      1
2      2
3      3
4      4
5      5
6      6
```

```
[ishoebot@id415m35 cs2263-ishoebot]$ git add arrindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ git commit -m "Added arrindex.c"
[master 5e17525] Added arrindex.c
 1 file changed, 12 insertions(+)
 create mode 100644 arrindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ git push
Username for 'https://vcs.cs.unb.ca': ishoebot
Password for 'https://ishoebot@vcs.cs.unb.ca':
Counting objects: 4, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 498 bytes | 0 bytes/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://vcs.cs.unb.ca/git/cs2263-ishoebot
   59829c9..5e17525  master -> master
[ishoebot@id415m35 cs2263-ishoebot]$
```

Exercise 4:

Question 1:

High	X
	Arr[4]
	Arr[3]
	Arr[2]
	Arr[1]
	Arr[0]
Low	Y

Question 2:

They are different. I assume it has something to do with the way the operating system/cpu handles memory, something beyond my control. Otherwise I have no idea.

```
[ishoebot@id415m35 cs2263-ishoebot]$ ./wrongindex
$ x = 0x7fff9eb95b8c, & y = 0x7fff9eb95b6c
$ arr[0] = 0x7fff9eb95b70, & arr[4] = 0x7fff9eb95b80
x = -2, y = 15
pointers: x = 0x7fff9eb95b8c, y = 0x7fff9eb95b6c, arr[0] = 0x7fff9eb95b70, arr[1] = 0x7fff9eb95b74, arr[2] = 0x7fff9eb95b78, arr[3] = 0x7fff9eb95b7c, arr[4] = 0x7fff9eb95b80
x = -2, y = 7
pointers: x = 0x7fff9eb95b8c, y = 0x7fff9eb95b6c, arr[0] = 0x7fff9eb95b70, arr[1] = 0x7fff9eb95b74, arr[2] = 0x7fff9eb95b78, arr[3] = 0x7fff9eb95b7c, arr[4] = 0x7fff9eb95b80
x = -2, y = 7
pointers: x = 0x7fff9eb95b8c, y = 0x7fff9eb95b6c, arr[0] = 0x7fff9eb95b70, arr[1] = 0x7fff9eb95b74, arr[2] = 0x7fff9eb95b78, arr[3] = 0x7fff9eb95b7c, arr[4] = 0x7fff9eb95b80
x = -353, y = 7
pointers: x = 0x7fff9eb95b8c, y = 0x7fff9eb95b6c, arr[0] = 0x7fff9eb95b70, arr[1] = 0x7fff9eb95b74, arr[2] = 0x7fff9eb95b78, arr[3] = 0x7fff9eb95b7c, arr[4] = 0x7fff9eb95b80
```

```
[ishoebot@id415m35 cs2263-ishoebot]$ git commit --amend
[master bc8d254] Added wrongindex.c, and fixed bug in arithmetic1.c
 1 file changed, 28 insertions(+)
 create mode 100644 wrongindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ git push
Username for 'https://vcs.cs.unb.ca': ishoebot
Password for 'https://ishoebot@vcs.cs.unb.ca':
Counting objects: 4, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 598 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
To https://vcs.cs.unb.ca/git/cs2263-ishoebot
 5e17525..bc8d254 master -> master
[ishoebot@id415m35 cs2263-ishoebot]$
```

Exercise 5:

```
[ishoebot@id415m35 cs2263-ishoebot]$ rm arrindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ ls
arithmetic1 arithmetic1.c arraylisting arraylisting.c arrindex wrongindex wrongindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ git checkout arrindex.c
[ishoebot@id415m35 cs2263-ishoebot]$ ls
arithmetic1 arithmetic1.c arraylisting arraylisting.c arrindex arrindex.c wrongindex wrongindex.c
```