ICSI 333 – Systems Fundamentals

Lab 11 – Memory

Create a file called data by running this command:

```
head –c 10000 /dev/random > data
```

Create a program that uses mmap to map the above “data” file into memory

It should then create a shared memory area and uses memcpy to copy the data from the mmap’ed memory into the shared memory area.

Create a program that attaches to the shared memory from above.

It should mmap a new file and memcpy the data from shared memory into the new file.

Use cmp to ensure that the two files are the same. If they are the same, you will see no output. If they are different, you will see the first difference.

```
[root@alarm ~]# head -c 10000 /dev/random > data
[root@alarm ~]# cp data data2
[root@alarm ~]# cmp data data2
[root@alarm ~]# head -c 10000 /dev/random > data
[root@alarm ~]# cmp data data2
data data2 differ: char 1, line 1
```

Hints:
MAP_PRIVATE does not update underlying file
mmap permissions can cause mmap to fail – be careful to get what you need
you can view your shared data at /dev/shm/myArea
Use od piped to head to show your input and output and shared memory