Lab 9 Results

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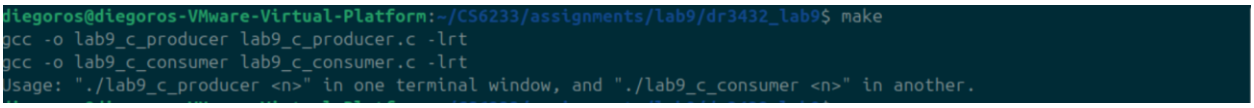
a)

a. Memory allocation: in fixed size partitioning programs and processes get allocated into fixed size memory partitions. While paging projects get divided into multiple pages.
b. Contiguous memory: In fixed size partitions the entire program or process is loaded into a single block, meaning that all code is contiguous. In paging this is not the case as programs are loaded into potentially non-contiguous pages.
c. Limiting size: fixed size partitioning has a limit to how large programs can be (the size of the partition) while paging is only limited by the total size of the memory.

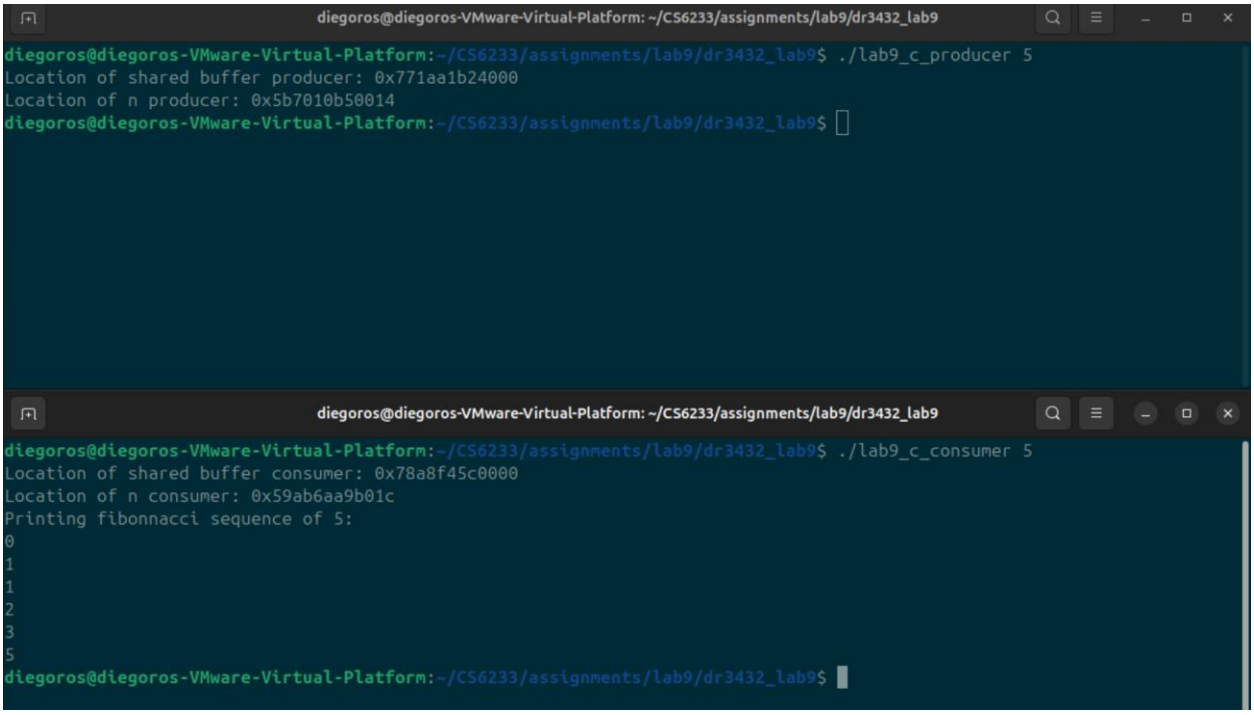
b)

a. Contiguous memory: variable size partitioning loads the entire process into memory in one contiguous block of memory while segmentation separates the program into multiple segments and loads them in non-contiguous ways.
b. Memory management: in variable size partitioning the MMU handles the contiguous blocks of memory and requires no extra steps. In segmentation we have to use a segment table to tell the MMU which segments belong to which processes (since they are non-contiguous).

c) Program of 5A split into two: lab9_c_producer and lab9_c_consumer.

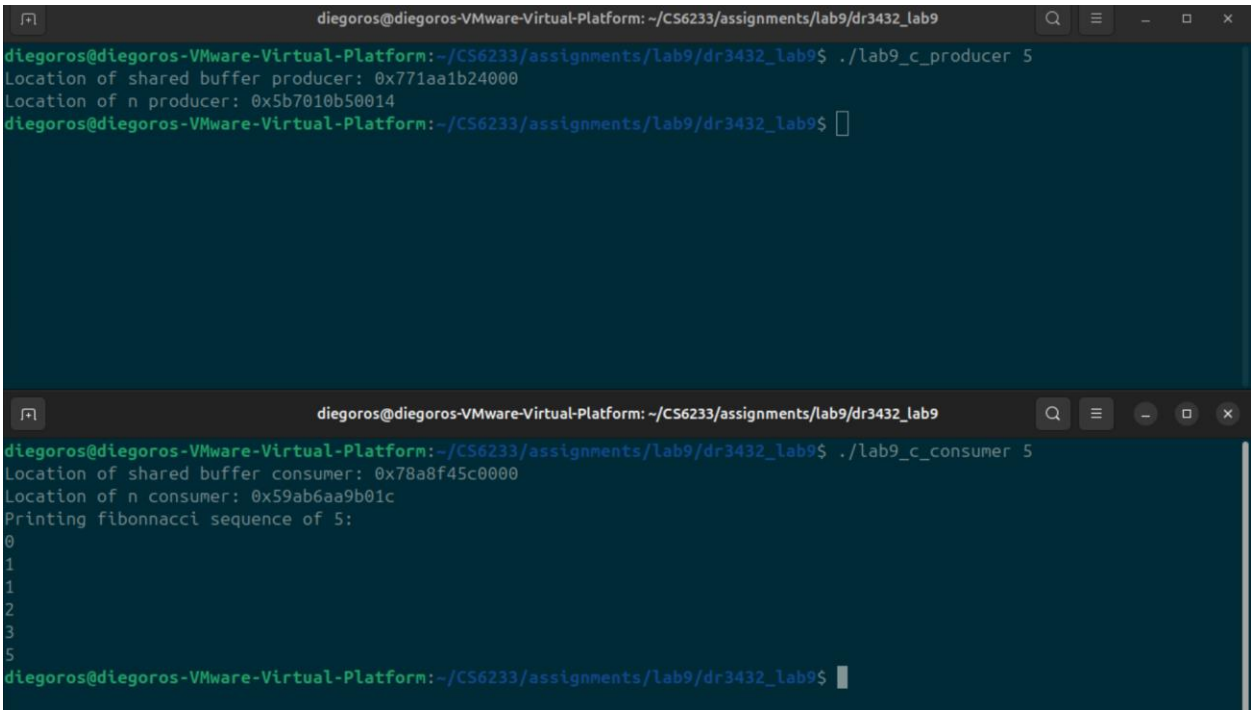


d)

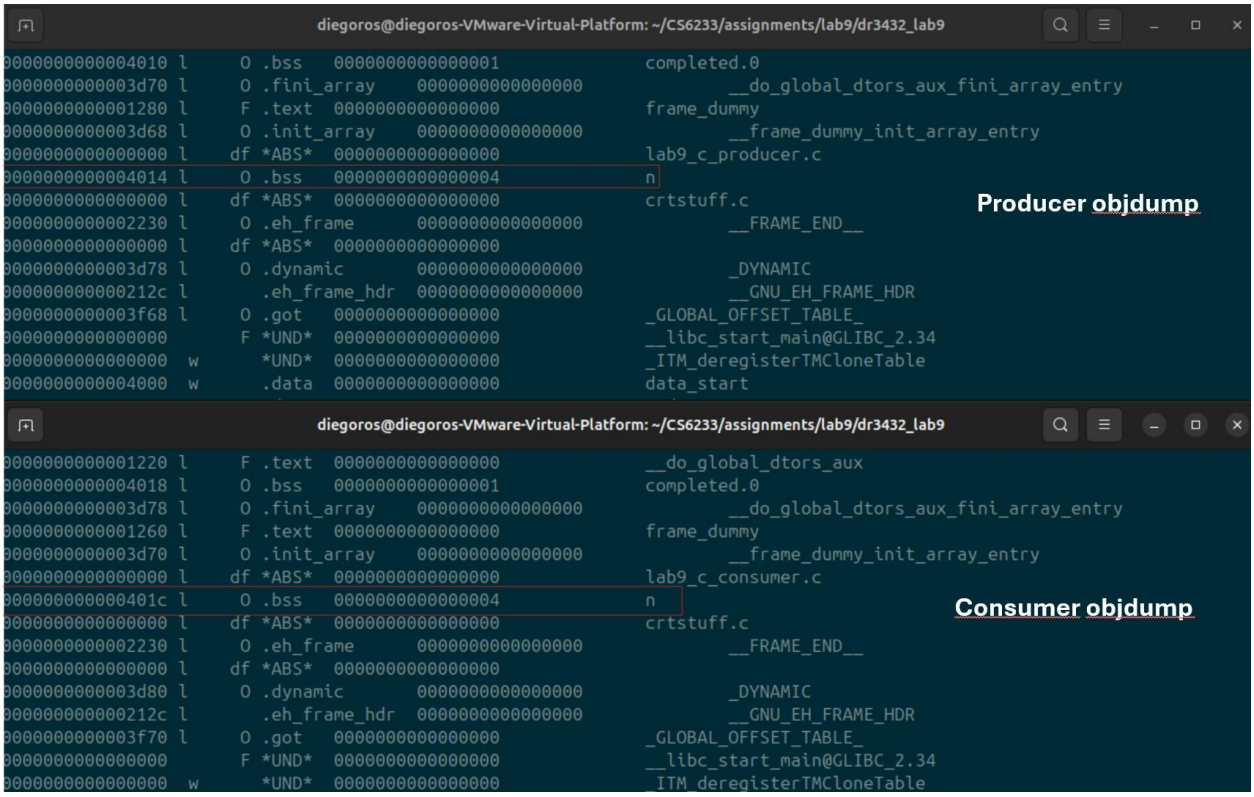


e) The address printed above was the virtual address for each process.

f)

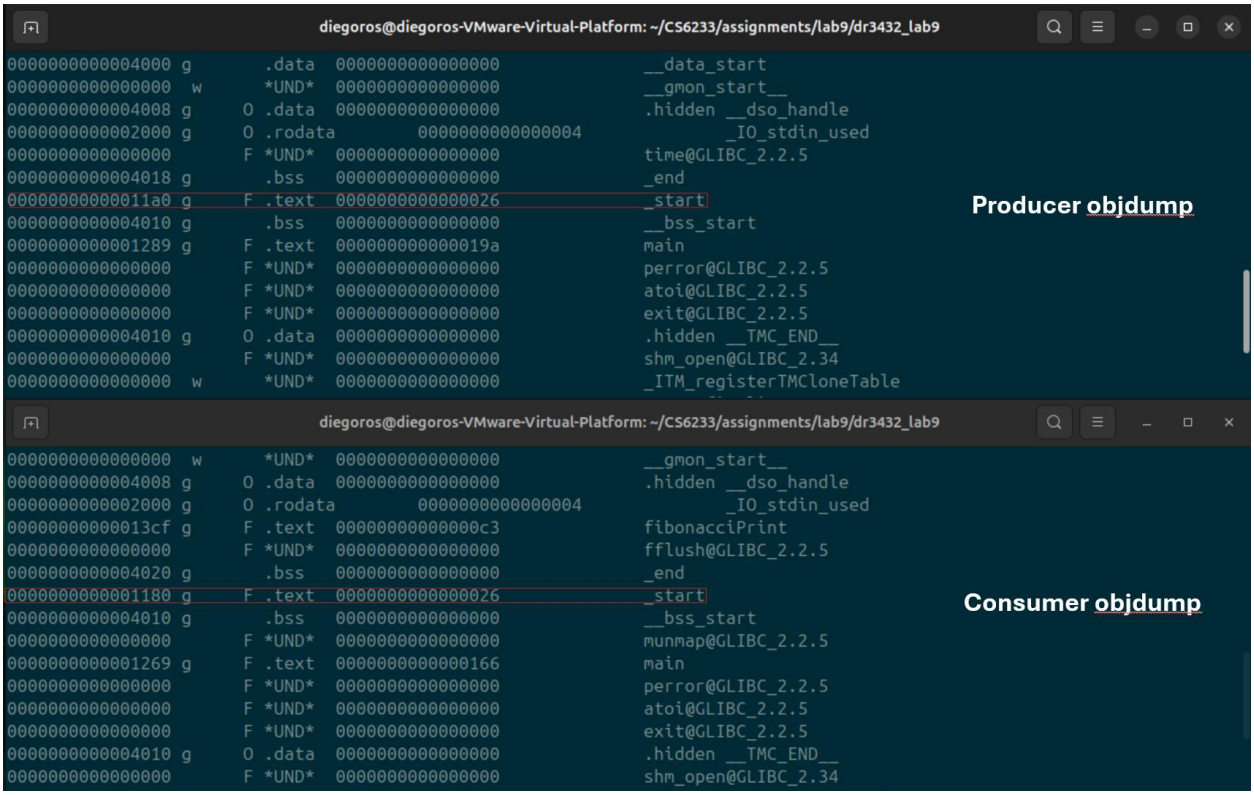


g)



h) The addresses printed for n did not match. They do not match since this does not include any dynamic linking done at runtime as well as the addresses displayed above starting sequentially at 0 since the program is not loaded into memory.

i) The entry point (labeled _start) for my producer code is at 00...011a0 and for my consumer code it is at 00...01180.


diegoros@diegoros-VMware-Virtual-Platform: ~/CS6233/assignments/lab9/dr3432_lab9
0000000000004000 g .data 0000000000000000 __data_start
0000000000000000 w *UND* 0000000000000000 __gmon_start__
0000000000004008 g O .data 0000000000000000 .hidden __dso_handle
0000000000002000 g O .rodata 0000000000000004 _IO_stdin_used
0000000000000000 F *UND* 0000000000000000 time@GLIBC_2.2.5
0000000000004018 g .bss 0000000000000000 _end
00000000000011a0 g F .text 0000000000000026 _start
0000000000004010 g .bss 0000000000000000 __bss_start
0000000000001289 g F .text 000000000000019a main
0000000000000000 F *UND* 0000000000000000 perror@GLIBC_2.2.5
0000000000000000 F *UND* 0000000000000000 atoi@GLIBC_2.2.5
0000000000000000 F *UND* 0000000000000000 exit@GLIBC_2.2.5
0000000000004010 g O .data 0000000000000000 .hidden __TMC_END__
0000000000000000 F *UND* 0000000000000000 shm_open@GLIBC_2.34
0000000000000000 w *UND* 0000000000000000 _ITM_registerTMCloneTable
Producer objdump
diegoros@diegoros-VMware-Virtual-Platform: ~/CS6233/assignments/lab9/dr3432_lab9
0000000000000000 w *UND* 0000000000000000 __gmon_start__
0000000000004008 g O .data 0000000000000000 .hidden __dso_handle
0000000000002000 g O .rodata 0000000000000004 _IO_stdin_used
00000000000013cf g F .text 00000000000000c3 fibonacciPrint
0000000000000000 F *UND* 0000000000000000 fflush@GLIBC_2.2.5
0000000000004020 g .bss 0000000000000000 _end
0000000000001180 g F .text 0000000000000026 _start
0000000000004010 g .bss 0000000000000000 __bss_start
0000000000000000 F *UND* 0000000000000000 munmap@GLIBC_2.2.5
0000000000001269 g F .text 0000000000000166 main
0000000000000000 F *UND* 0000000000000000 perror@GLIBC_2.2.5
0000000000000000 F *UND* 0000000000000000 atoi@GLIBC_2.2.5
0000000000000000 F *UND* 0000000000000000 exit@GLIBC_2.2.5
0000000000004010 g O .data 0000000000000000 .hidden __TMC_END__
0000000000000000 F *UND* 0000000000000000 shm_open@GLIBC_2.34
Consumer objdump