

New York University

Tandon School of Engineering

Department of Electrical & Computer Engineering

Introduction to Operating Systems (CS-GY6233)
Spring 2020

Assignment 6
(10 points)

- a) (1 point) List two main similarities between fixed sized partitioning and paging
- b) (1 point) List two main similarities between variable sized partitioning and segmentation
- c) (1 point) List three main differences between paging and segmentation
- d) (7 point) Repeat problem (a) of assignment 4, except that now you should NOT use the `fork()` system call but instead create two separate programs, a producer program and a consumer program, where each is then invoked from a separate command shell (you should pass the same sequence size value n to both programs). They should both communicate via shared memory (note that anonymous mmap won't work in this case). Also separate the Fibonacci into its own separate .c file.
 - Print the start address of the shared buffer from both processes. Did you expect it to be similar when printed from both processes? and why?
 - In the Fibonacci function, use global variables instead of local static variables for storing the previous 2 Fibonacci values (i.e. store them in the data section not the stack). Report the addresses of these two variables within the relocatable object module and also within the absolute module.

What to hand in (using NYU Classes):

- Your “.c” and “.h” files (with appropriate comments). Do not attach project or make files.
- A file containing answers to questions or any comments you would like to add (if any) in word or pdf format.
- A screen shot(s) of your terminal window (possibly in the same file) showing the current directory, the command used to compile your program, the command used to run your program and the output of your program.

RULES:

- You may consult with other students about GENERAL concepts or methods, but copying code (or code fragments) or algorithms is NOT ALLOWED and is considered cheating (whether copied from other students, the internet or any other source).
- If you are having trouble, please ask your teaching assistant for help.
- You must submit your assignment prior to the deadline.
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