New York University
Tandon School of Engineering
Department of Computer Science and Engineering

Introduction to Operating Systems (CS-UG 3224)
Fall 2024

Assignment 1
(5 points)

In this assignment, you are required to download and install the latest VMware Workstation Player from www.vmware.com and create a new virtual machine after downloading the latest Ubontu Linux distribution from www.ubunto.com.

If you already have an Ubunto linux machine, then you may use it, however it is recommended that you use a virtual machine for assignments that pertain to developing kernel modules. Please note that we will develop Linux kernel modules in this class, and as such Mac OS will not do (besides, it behaves differently from Linux when used with pthreads).

After successfully installing and running Linux, use one of the pre-installed editors (e.g. vi, gedit, emacs, etc), or download an editor of your choice, to write a C program that prints the text "Hello world! This is CS3224, Fall 2024!" on the first line, and then on the next line, prints the student's first/last names on the second line, followed by a random number whose value is between 0-199 (please ensure you seed your `rand()` properly, e.g. use `srand(time(NULL))` to seed). Your program shall then put a new-line character and then exit.

You should use gcc for compiling your program. You should name your output file (i.e. the executable) lab1 (yes, no extension).

Below are the links for the free versions (for student use) of Vmware workstation (windows/linux) and Fusion (Mac).

https://www.vmware.com/products/workstation-player/workstation-player-evaluation.html

https://customerconnect.vmware.com/web/vmware/evalcenter?p=fusion-player-personal

Submission file structure:

Please submit a **single .zip file** named **[Your Netid]_lab#.zip**. It shall have the following structure (replace # with the actual assignment number):

```
└── [Your Netid] hw# (Single folder includes all your submissions)
    ├── lab#_1.c (Source code for problem 1)
    ├── lab#_2a.c (Source code for problem 2a, and so on)
    ├── lab#_1.h (Source code header file, if any)
    ├── Makefile  (makefile used to build your program, if any)
    ├── lab#.pdf (images + Report/answers to short-answer questions)
```

What to hand in (using Brightspace):

- Source files (.c or .h) with appropriate comments.
- Your Makefile if any.
- A .pdf file named **"lab#.pdf"** (# is replaced by the assignment number), containing:
    - Screen shot(**s**) of your terminal window 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 shall **use kernel version 4.x.x or above**. You shall not use kernel version 3.x.x.
- 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 form 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.