Operating Systems–II: CS3523
Spring 2020
Lab Assignment 5: Virtual to Physical address mapping
Last date for submission: N/A

Problem Statement 1:

Background:

- Linux maintains separate virtual address space for each process's userspace. But there is one kernel address space for all processes.

Goal: The goal of this assignment is to see anatomy of virtual address space of processes using kernel debugger.

Details: On the virtual machine running centos, run the following experiments and create a .txt report with observations.

Experiment:

a. As a normal user, run two processes of the "sample" program shared in the class in two different ssh sessions.
b. While the processes are still running, collect pmap of both the processes from a third ssh session and save them.
c. While the processes are still running, collect kernel dump from the third ssh session.
d. In the kernel debugger, analyze the processes' address spaces using "ps", "vm -m" "vm -p". Notice the page frame number of the libc's text segment. It should be same for both the processes.
e. Capture the outputs from (a), (b), (c), (d) (only necessary lines), in a separate .txt report.