Assignment 3

Question 1 Documentation

Program Logic / How the Program Works:

1. In this question, I first made a syscall in order for the scheduler such that anytime the said process is chosen by the scheduler, it adjusts the vruntime of the said process so as to delay its selection in the **kernel/sys.c** file.
2. The syscall takes in the process id and the custom delay in milliseconds as the two parameters for the syscall.
3. Then the process is obtained using the **find_get_pid** function and then using the **task_struct** the task is obtained by giving the **process_struct** and **PGID** as parameters to the **pid_task** function.
4. Then the current process delay is set.
5. After writing the syscall, I added **u64 poccessDelay** in the **struct sched_entity** to set the processing delay when the syscall sets the processing delay in the **include/linux/sched.h** file.
6. Then in **kernel/sched/core.c** in **__sched_fork** function, I set the **p->se.processDelay** to 0.
7. We also have to add the syscall declaration in **arch/x86/entry/syscalls/syscall_64.tbl**, at the **448th** position.
8. Now finally we have to add this delay to the selected process in **kernel/sched/fair.c**, I just added **curr->processDelay** to the curr->vruntime.
9. Then after compiling the new changes I tested the syscall using the test.c file provided.
10. Then I generate a diff file between the kernel with the added changes and the stock kernel to get the patch file.

How to compile the file:

After patching the kernel with the diff file run **make** for the **test.c** file and run **./test**