CS4375- Fall 2025 Homework Report

<Your name> Submitted on <date>

<Your email address>

**HW 3: Priority-based Scheduler for xv6**

Please replace red text with your report text and any tables or figures, names of any accompanying files, etc. Remember to commit all the files for your lab submission, to put the URL for your private xv6 repo in the Teams assignment, to submit the Teams assignment, and to give the instructor and TA access to your repo.

Task 1. Modify the provided ps command to print the priority of each process.

Your modified ps.c should be in the user directory in the hw3 branch of your xv6 repo. Describe what change you had to make to the getprocs() system call and its helper function procinfo(). Show the results of running your modified ps command.

Task 2. Implement a priority-based scheduler.

List the files and functions you changed and explain the purpose of each change. Be sure to do git add and git commit as needed and push your changes to your online repo.

Show the results of running your test programs using the priority scheduler. Your tests should show higher priority programs getting to run first. You may use the provided pexec program for your tests.

Summarize what you learned by carrying out this task.

Describe any difficulties you ran into with this task and if/how you overcame them.

Task 3. Add a readytime field to struct proc, initialize it correctly, and modify ps to print a process’s age.

Explain how you calculate a process’s age. Show the results of running your modified ps command.

Task 4. Add aging to your priority based scheduler.

Explain your aging policy. Show results from running your priority-based scheduler with aging. Your tests should show the benefits of using aging.

Answer the questions asked in the pdf.

Summarize what you learned by carrying out this task.

Describe any difficulties you ran into with this task and if/how you overcame them.

Extra Credit Task (10 points).

Explain how you implemented the user program (modified pexec) to calculate scheduling metrics, i.e., turnaround time and response time for your priority scheduling with aging policy.