

CS471: Operating System Concepts

Fall 2007

Homework #4

Points: 20

Due: October 12, 2007

Question 1 [Points 4] Compare the differences between `fork()` and `vfork()` by running the program in Exercise 3.3 (pages 116-117). Print the values using `fork()` (as shown in 3.3) and by running again by replacing `fork()` with `vfork()`. Summarize the differences you have noticed with a brief explanation.

Question 2 [Points 8] Write a program that reads a sequence of address references of a process from an input file (provided to you under `testdata5.txt`). Assume that this process has been allocated 4 frames. It uses pure demand paging. Using FCFS page replacement algorithm, determine the total number of page faults. The page size is 1024 bytes.

Question 3 [Points 8] For the given sequence of page references, determine the number of page faults under these page replacement algorithms: (i) FCFS (ii) Optimal (iii) LRU
Each process has 4 buffers.

Reference string: 1,3,5,7,3,8,1,2,3,4,5,7,8,3,6,5,3,6,4,3,9,4,7,5,8,9