COSC 350 System Software Midterm #2-2

04/16/2021

4. (15 pt.) Write following syntax error free compliable program. (**DO NOT USE GLOBAL VARIABLE)**
   A child is created and child and parent try runs forever by printing "I am your child" and "I am your parent" respectively. Child and parent run concurrently. Parent and child process sleep one second after each message display. After printing message 10 times, parent send signal SIGUSER1 to child. Once child get the signal from parent, child print "From now on, I am a zombie" and remain as a zombie.

5. (15 pt.) Write following syntax error free compliable program. (**DO NOT USE GLOBAL VARIABLE)**
   Create two thread which runs a function thrd1(), thrd2() respectively. Each thread including original program tries to run forever. Each thread need sleep one second for each loop.
   In function thrd1(), local variable count is used for counting a number. The count value will be increased by one for each loop. When count = 10, it tries to terminate all threads including original program **without using pthread_cancel() function**.
   Threads (original program and created threads) must run concurrently.

6. (15 pt.) Write an error free following compliable C program. (**DO NOT USE GLOBAL VARIABLE)**
   Two threads are running on different functions. Two threads are sharing a global variable "counter" with mutual exclusion (must avoid race condition). The "counter" is initiated with value 0. One thread increases "counter" by one if it is less than 10 then print the counter value. Other thread decreases "counter" if it is greater than 0 then print the counter value. Both threads run forever.

How to submit

- Need submit three files : task4.c, task5.c and task6.c
- Submit by email to cosc350@gmail.com