

CSCE 36103 Operating Systems – Homework 2

Due: February 17, 2025 at 3:05 pm; Total Points: 100

Assignments: (see HW2-ProblemStatements.pdf for problems.)

1. (30 points) 3.19
 - Name your program as zombie.c
 - Create a Makefile to compile your code to an executable as zombie
2. (30 points) 3.21
 - Name your program as collatz.c
 - Create a Makefile to compile your code to an executable as collatz
 - Run the executable as “./collatz n”, where n is a positive integer
3. (40 points) 3.22
 - Name your program as collatz.c
 - Create a Makefile to compile your code to an executable as collatz
 - Run the executable as “./collatz n”, where n is a positive integer
 - The parent process does the following
 - Create the child process and wait for it to terminate
 - Output the contents of shared memory
 - Remove the shared-memory object
 - The child process does the following
 - Establish the shared-memory object (shm open(), ftruncate(), and mmap())
 - Write the sequence to the shared memory object
 - Hint: choose a unique name for the shared memory object

Submission:

1. Make sure that your code runs on turing. We ONLY use turing to test code.
 - Host: turing.csce.uark.edu
 - To log into turing remotely from a Windows machine, you can use Command Prompt or Putty, and utilize WinSCP for transferring files between turing and your local computer. Alternatively, if you are using a macOS machine, you can log into turing remotely using Terminal and employ FileZilla to transfer files between turing and your local computer.
2. zip -r hw2_<your last name>_<your first name>.zip 3.19 3.21 3.22
 - 3.19, 3.21, and 3.22 are folders containing the respective c file and the Makefile.
 - For example, for name **Jane Doe**, then the tar file is hw2_Doe_Jane.zip
3. Submit the zip file to Blackboard before the deadline. Late submission will not be graded.