UFAZ - Bachelor of Computer Science

System Programming

PW07 : processes

For each exercice, we expect the student to write a program, compile it and run it without errors of several examples. Test sets and comments are as important as the code itself.

Exercice 1

Write a program which generate a child process using the system call `fork`.

- the child process should display its number (pid) as well as the number (pid) of its father using the system calls `getpid` and `getppid`, then exits (system call `exit`) with a return code equal to the last digit of its pid.

- the father process should display the pid of its child, and wait for the child process to terminate (using `wait`) and display the return code.

Exercice 2

Write a program which takes as parameter an integer n. This program should first launch n child processes and then wait for their termination using the system call `wait`. Each time a process terminate, the parent should display its number (pid) and its return code.

Exercice 3

Write a program with one single argument: a file name, which :

1. opens the file in read-only mode;

2. create a child process

3. then the 2 processes (parent and child) read characters one at a time using `read` and display them on the screen

Make some experiements with a big text file. Check whether the number of read characters in correct r not ? What happens if the file is opened after the call of the function `fork`?