Programming Assignment 1

CSC 4320/6320 - Operating Systems, Spring 2018
Due Date: Feb. 7, 11:59pm

Purpose of This Assignment

To provide experience with process creation in Unix
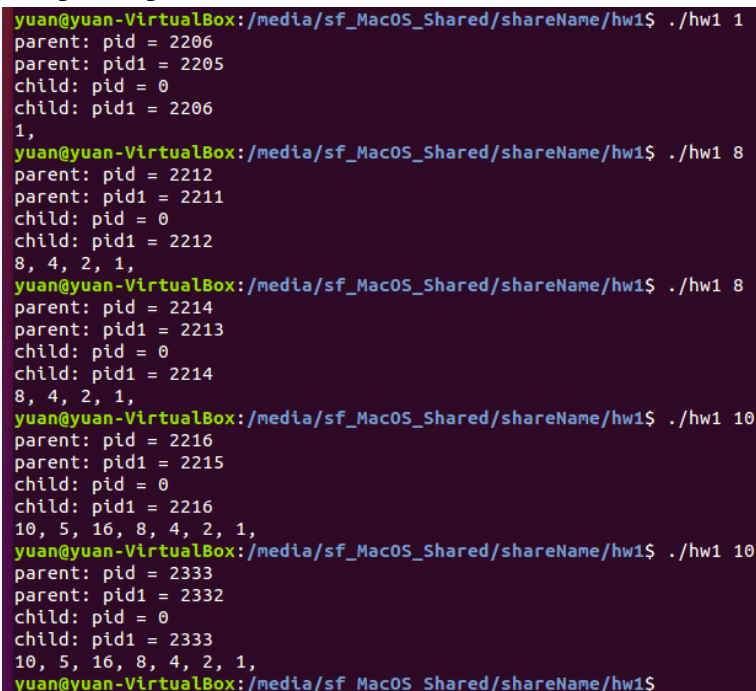
Problem Statement:

Programming problem 3.21 (page 155), with the following **extra information/requirements**:

1. Besides requirements in Problem 3.21, your program should also display the process IDs of both the parent and child processes. Follow the code in Figure 3.34 (page 152) to structure your program and to print the process IDs. Capture a screenshot after running your program. A sample screenshot is provided below (the output of your program should have the same structure as in the sample screenshot).
2. A skeleton of the program is provided in iCollege, which has code to obtain user's input number from command line. Add your own code based on the existing code.
3. You can use the gcc command to compile the program. See the sample screenshot below.

What to submit (submit through iCollege):

Upload program file *hw1.c* and a project report (named as "*HW1.pdf*" or "*HW1.doc*") to iCollege. The project report should include 1) a sample screenshot of the output; 2) the source code of *hw1.c*.

Sample output screenshot

```
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ./hw1 1
parent: pid = 2206
parent: pid1 = 2205
child: pid = 0
child: pid1 = 2206
1,
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ./hw1 8
parent: pid = 2212
parent: pid1 = 2211
child: pid = 0
child: pid1 = 2212
8, 4, 2, 1,
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ./hw1 8
parent: pid = 2214
parent: pid1 = 2213
child: pid = 0
child: pid1 = 2214
8, 4, 2, 1,
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ./hw1 10
parent: pid = 2216
parent: pid1 = 2215
child: pid = 0
child: pid1 = 2216
10, 5, 16, 8, 4, 2, 1,
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ./hw1 10
parent: pid = 2333
parent: pid1 = 2332
child: pid = 0
child: pid1 = 2333
10, 5, 16, 8, 4, 2, 1,
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$
```

Sample compiling screenshot


```
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ls
hw1.c
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ gcc -o hw hw1.c
hw1.c: In function 'main':
hw1.c:27:6: warning: implicit declaration of function 'atoi' [-Wimplicit-functio
n-declaration]
  n = atoi(argv[1]);
      ^
hw1.c:54:3: warning: implicit declaration of function 'wait' [-Wimplicit-functio
n-declaration]
   wait(NULL);
   ^
yuan@yuan-VirtualBox:/media/sf_MacOS_Shared/shareName/hw1$ ls
hw  hw1.c
```