OS Home Assignment 1

Answer 1)

Output, if child process is scheduled first:

Child sees i = 0

Parent sees i = 0

Child sees i = 1

Parent sees i = 1

Child sees i = 2

Parent sees i = 2

Answer 2)

Output if child processes have highest priorities:

Parent says a: 1

id: 2 a: 2 b: 1

id: 1 a: 3 b: 1

# The program will now go into infinite loop

Note: The statements pthread\_join will not be executed. Since the child processes have the highest priorities, they will enter into the infinite loop and the remaining statements of the parent process wont be executed.

Answer 3)

This threading approach ( m:n threading ) is better than user-level threads because of cheap context switching. It is so because it does not involve OS kernel operations for user level thread switch. Kernel context switches are expensive. It is ideal that there are absolutely no kernel thread context switches at all except OS kernel process scheduling. In user-level threading all the context switches happen in kernel, so context switching is easier in m:n threading.

Mapping is possible for these relative values of m and n :

m >> n

m > n

m (approx) = n

Best choice: m >> n