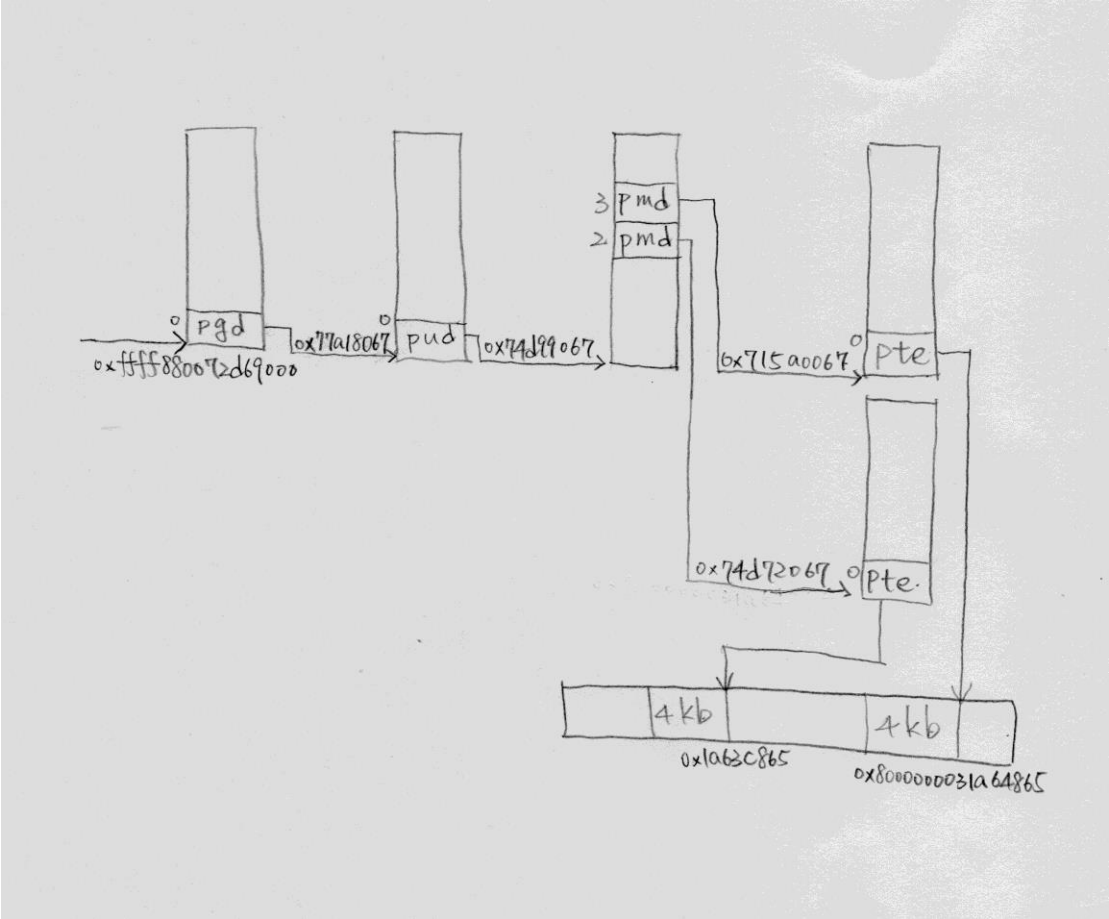
0316320 吳赫倫

Part A

(1) No, we just need to allocate 5 memory pages because three of them (pgd, pud, pmd) can share memory space.

(2)



Part B

In this program, the physical address of stack{1, 2} will not be changed until they are modified. After child process does a writing operation to stack1, the physical address of stack1 of child process is changed, but the physical address of stack2 will still be the same value until child process does another writing operation to it. This method is called CoW(Copy on Write). It will reduce the overhead of creating new process, because it only copies the physical memory when a process wants to modify the memory.

Part C

In these programs, they use the same shared library (libslt.so.1). Because the code segment of shared library is read only, each process which uses this shared library

can use the same physical memory. Each process also uses the same data segment before changes it. Once a process wants to do a writing operation to data segment, it will copy the physical memory. Cow technique is used on data segment.