Homework Chapter 9

1. Suppose you are working on a large project with several smaller teams working semi-independently. What are some pros- and cons- of using shared, dynamic libraries for sharing code versus sharing source code .

2. Despite memories and programs growing in size, memory page sizes have mostly remained fixed at 4KB. Some architectures do support larger pages, but the 4KB is still the standard. Why can't we just modify the kernel to support something other than 4KB?

3. What is the address-space identifier, and why is it crucial to storing this in the TLB?

4. Is it possible to have more *page in* than *page out*s? Is this the sign of a healthy, well-performing system?

5. A program is running on a 32-bit intel computer, and the virtual address for variable a is 0x4010_001F. The operating system has assigned virtual page $262,400_{10}$ to physical page $524,102_{10}$. Show the 32-bit hexadecimal physical address for variable a. Also, write the *page directory* address and the *page table's* address using Intel's 32-bit scheme.