**Assignment 5**

**Exercise 47 - Chapter 3**

We consider a program which has the two segments shown below consisting of instructions in segment 0, and read/write data in segment 1. Segment 0 has read/execute protection, and segment 1 has just read/write protection. The memory system is a demand paged virtual memory system with virtual addresses that have a 4-bit page number, and a 10-bit offset. The page tables and protection are as follows (all numbers in the table are in decimal):

|  |  |  |  |
| --- | --- | --- | --- |
| **Segment 0** | | **Segment 1** | |
| **Read/Execute** | | **Read/Write** | |
| **Virtual Page #** | **Page Frame #** | **Virtual Page #** | **Page Frame #** |
| 0 | 2 | 0 | On Disk |
| 1 | On Disk | 1 | 14 |
| 2 | 11 | 2 | 9 |
| 3 | 5 | 3 | 6 |
| 4 | On Disk | 4 | On Disk |
| 5 | On Disk | 5 | 13 |
| 6 | 4 | 6 | 8 |
| 7 | 3 | 7 | 12 |

For each of the following cases, either give the real (actual) memory address which results

from dynamic address translation or identify the type of fault which occurs (either page or protection fault).

(a) Fetch from segment 1, page 1, offset 3

(b) Store into segment 0, page 0, offset 16

(c) Fetch from segment 1, page 4, offset 28

(d) Jump to location in segment 1, page 3, offset 32

**Exercise 10 - Chapter 4**

Consider the directory tree of Fig. 4-8. If */usr/jim* is the working directory, what is the

absolute path name for the file whose relative path name is *../ast/x*?

