Virtual Memory In Class Assignment

1. List 2 advantages of using a virtual address space as opposed to the physical address space.

2. What is meant by the term 'lazy swapper'? List some advantages of using this technique for memory management.

3. What is the valid/invalid bit used for in the page table?

4. What is meant by the term 'copy-on-write'? How is this approach advantageous to memory management?

5. Given the reference string used in the class lecture and textbook, compare the performance (page faults) of each of the following page replacement algorithms assuming the process has 3 pages available to it:

    1. FIFO

2. LRU
3. Second Chance
4. Optimal Page Replacement

Reference String:
7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1

6. (optional) If time permits in class, create your own algorithm for page replacement. Describe it below and check it's performance using the above reference string (if able).