Chapter 10 Important Points

This is a summary of the parts of Chapter 10 that you should understand and be able to explain. In addition you should be able to solve problems related to them.

1. Demand paging

    (a) How it facilitates sharing

    (b) How it provides protection

    (c) Effect of page size on

        i. Fragmentation
        ii. Page table size
        iii. I/O overhead
        iv. Number of page faults
        v. Locality

    (d) Prepaging

2. Page faults

    (a) Valid/invalid bit to determine

    (b) How they are handled - detailed steps

    (c) How they affect performance

        i. Instruction restart
        ii. Effective access time calculations

3. Copy-on-write

4. Page replacement - basic steps independent of algorithm

5. FIFO page replacement

    (a) Belady's anomaly

6. Optimal page replacement

7. Least Recently Used page replacement

    (a) approximations :

        i. Least frequently used
        ii. Most frequently used

8. Second chance stack algorithms

    (a) With just reference bit

    (b) With reference and modified bit

9. Stack algorithm - definition of

10. Global versus local replacement

11. Page buffering

12. Allocation of pages to processes

13. Principle of locality

14. Thrashing

15. Working set

    (a) Definition

    (b) How implemented

    (c) Page fault frequency as an approximation

16. TLB Reach and working set

17. Allocating kernel memory

    (a) Buddy system

    (b) Slab allocation

18. Effect of program loop structures on page fault rate