Operating System

HW#5, Memory Management, segmentation, paging

By Prof K R Chowdhary

JNV University

January 11, 2024

Problem set A: Short questions

1. What bindings are used in Linux/Unix, in DOS?
2. What is virtual address, logical address and physical address?
3. What MMU does?
4. What is use of base register and of relocation register?
5. The user program generates only the logical address (T/F).
6. What is linking loader?
7. What is dynamic linking loader?
8. What is static linking?
9. What is dynamic loading?
10. What is interrupt vector?
11. Does segmentation offer fragmentation? Is it internal or external or non or both? Does segmentation requires compaction?
12. Does the backing store has problem of fragmentation as in RAM for segmentation?
13. Is compaction possible in he backing store?
14. Is paging used in smartphones?
15. Why it is called demand paging?

Problem set B: Not too short answers

1. What are the contiguous and non-contiguous memory allocation?
2. What is compaction in memory allocation? What is necessary condition for compaction to be possible?
3. What is meaning of address binding, compile time binding, load time binding, and execution time binding?
4. What is advantage of swapping? What are its disadvantages? How much time it takes?
5. How the *limit* and *relocation* registers together helps in providing memory protection? When OS should be placed in the low memory and when in the high memory?
6. Why it is easier for the programmar to write programs for the virtual memory system?
7. How the memory mapping works in relocation addressing?
   - 7.1 If base register has value 10000 and logical address is 3000, what is physical address?
   - 7.2 If physical address is 12000 and logical address is 2000, what is base address?