Andrew Guarino

Professor Krawitz

Operating Systems

11 February 2022

Chapter 2 Exercises

1. First memory allocation is the main memory allocation scheme that searches from beginning of the free block list and selects to allocate the first block of memory large enough to fulfill the request. Best fit memory allocation is the main allocation scheme that consider all free blocks and selects for allocation the one that will result in the least amount of wasted space.
2. I think memory compaction and relocation should happen every minute. We are on the computer all day and everything we do deals with memory. If the computer only looked at the compaction and relocation a few times a day than the computer might have a little problem.
3. A computer circumstance that would favor best first would be if you download a piece of software. The first program that pops into my head is Visual Studios. Visual studios is a decent size program and it doesn’t want to take up a piece of memory that it doesn’t need.
4. Job orders
   1. This job has the biggest memory requested with 990k and highest block available 960k. To accomplish this job it will need to take 30k from block 1.
   2. This job can will fit in block 3 with 25k remaining
   3. Will fit in job 1 with 130 remaining
5. Job orders
   1. This will go to block 4 with 44k remaining
   2. Will fit perfectly in block 2 both having values of 900k
   3. Will go to the block 3 with 150K remaining
   4. Will go to block 1 with 560k remaining with a total of 754k remaining of memory
6. There are less jobs than memory so we can combine the memory together to make this work. Job 4 can go to block 5 with 6K remaining. Job C can go to block 2 with 0k remaining. We combine block 1, 3, and 4 for a total of 930 plus the 6 from block 6 comes to a total of 936K of memory. Job A uses 635K which leaves 311 remaining. Job D 220K can then uses with the remaining 311 remaining. After all the calculations is done there is a total of 91K of memory available to use.
7. Worst fit allocation is the worst memory you can use because it is either to big that leaves to much extra memory that can be used for something else or that it doesn’t pick the right one to be in.
8. Memory deallocation is the process of freeing an allocated resource whether the memory space, a device a file or a CPU.
9. Relocatable dynamic partitions is a memory allocation scheme in which system relocates programs in memory in order to gather together all empty blocks and compact them to make one block of memory that’s large enough to accommodate some, or all, of the jobs waiting for memory.
10. Relocatable dynamic partitions is a memory allocation scheme in which system relocates programs in memory in order to gather together all empty blocks and compact them to make one block of memory that’s large enough to accommodate some, or all, of the jobs waiting for memory.
11. Bounds register is defined as a register used to store the highest location in memory legally accessible by each program.
12. Relocation register contains the value that must be added to each address refereneced in the program so that the memory manager will be able to access the correct memory address.