Exercises
Memory-Management-Static-Dynamic-Partitions

E-1: Difference between logical and physical addresses and when will be both same.

E-2: Compaction is used to overcome fragmentation issue. Which fragmentation (external or internal) is managed by compaction ?

E-3: Consider a main memory size of 2^{24} bytes, with a fixed partitioning scheme of equal-size partitions of 2^{16} bytes. How many partitions are created and what is the size of each partition. If first partition at lower address is assigned to OS, what is the base address of next partition.

E-4: How following job sequence will be allocated memory in a best fit dynamic memory management system with available memory of 256KB
J1(65K), J2(15K), J3(35K), J4 (50k), J5(35K), J6(5K), J3 terminates,
J1 terminates, J7(40K), J2 terminates, J8(100K), J9(10K), J6 terminates, J10(12K),
J4 terminates, J9(30K).

E-5: For job sequence of E-4, allocate memory using buddy system dynamic memory management system.

E-6: In a fixed partitions memory management system of 2MB memory which uses first fit job allocation scheme. Lower address IMB is used to have partitions of 64KB, and higher address IMB is used to have partitions of 128KB. Out of lower address IMB, 128KB is used by the OS. Following jobs are allocated and de-allocated. J1(60KB), J2(120KB), J3(64JB), J4(128KB), J5(50KB), J1, J3, and J5 terminate respectively. J6(40KB), J7(60KB), J8(62KB).
The system uses 6 most significant bits out of the total address space as Job ID, and the remaining bits as the logical address generated by jobs). Compute the physical address (hexadecimal) for the following (hexadecimal) address generated by different jobs.

Logical addresses: 180BCD, 09FFFF, 1C00FF, 1FABCD, 201234, 0B0B0B

E-7: In a variable partitions memory management system of 1MB memory which used best fit job allocation, 64KB (at lower address) is used by the OS. Following jobs are allocated and de-allocated. J1(64KB), J2(128KB), J3(64JB), J4(128KB) J5(64KB), J1, J3, and J5 terminate respectively. J6(40KB), J7(60KB), J8(62KB).
The system uses 4 most significant out of address space as Job ID, and the remaining bits as the logical address generated by jobs). Compute physical address (hexadecimal) for the following (hexadecimal) address generated by different jobs.

Logical addresses: 75A0B, 6AABC, 800AB, 4FEFE, 61234

E-8: Given six memory partitions of 300 KB, 600 KB, 350 KB, 200 KB, 750 KB, and 125 KB (in order), how would the first-fit, best-fit, and worst-fit algorithms place processes of size 115 KB, 500 KB, 358 KB, 200 KB, and 375 KB (in order)?