Operating Systems – Lab#5

Section A

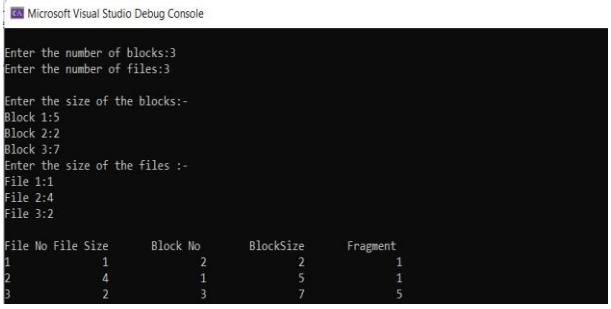
Memory allocation techniques

Aim: To Write a C program to simulate the following contiguous memory allocation techniques namely, Best-fit, First-fit and Worst-fit.

Description:

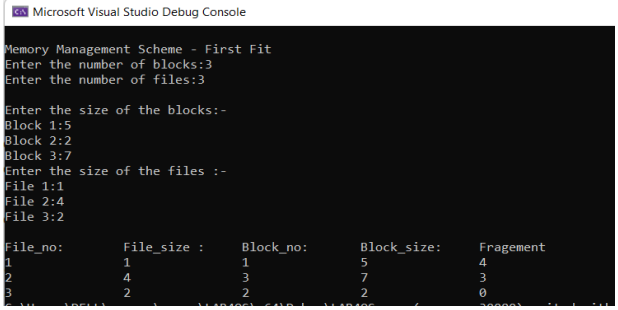
One of the simplest methods for memory allocation is to divide memory into several fixed-sized partitions. Each partition may contain exactly one process. In this multiple-partition method, when a partition is free, a process is selected from the input queue and is loaded into the free partition. When the process terminates, the partition becomes available for another process. The operating system keeps a table indicating which parts of memory are available and which are occupied. Finally, when a process arrives and needs memory, a memory section large enough for this process is provided. When it is time to load or swap a process into main memory, and if there is more than one free block of memory of sufficient size, then the operating system must decide which free block to allocate.

a) Best-fit strategy chooses the block that is closest in size to the request.



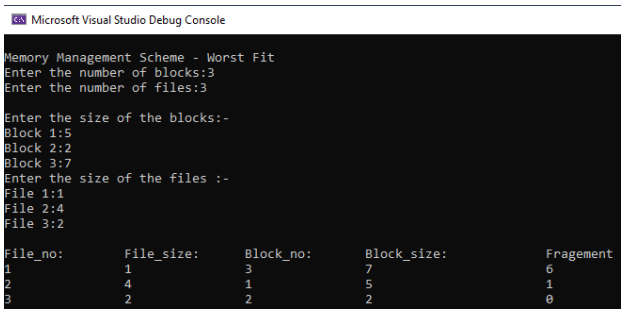
Best-Fit Sample run

b) First-fit chooses the first available block that is large enough.



First-Fit Sample run

c) Worst-fit chooses the largest available block.



Worst-Fit Sample run