

Operating Systems Project

Implementation of first-fit, best-fit and worst-fit algorithms

- Manoj Pissay A

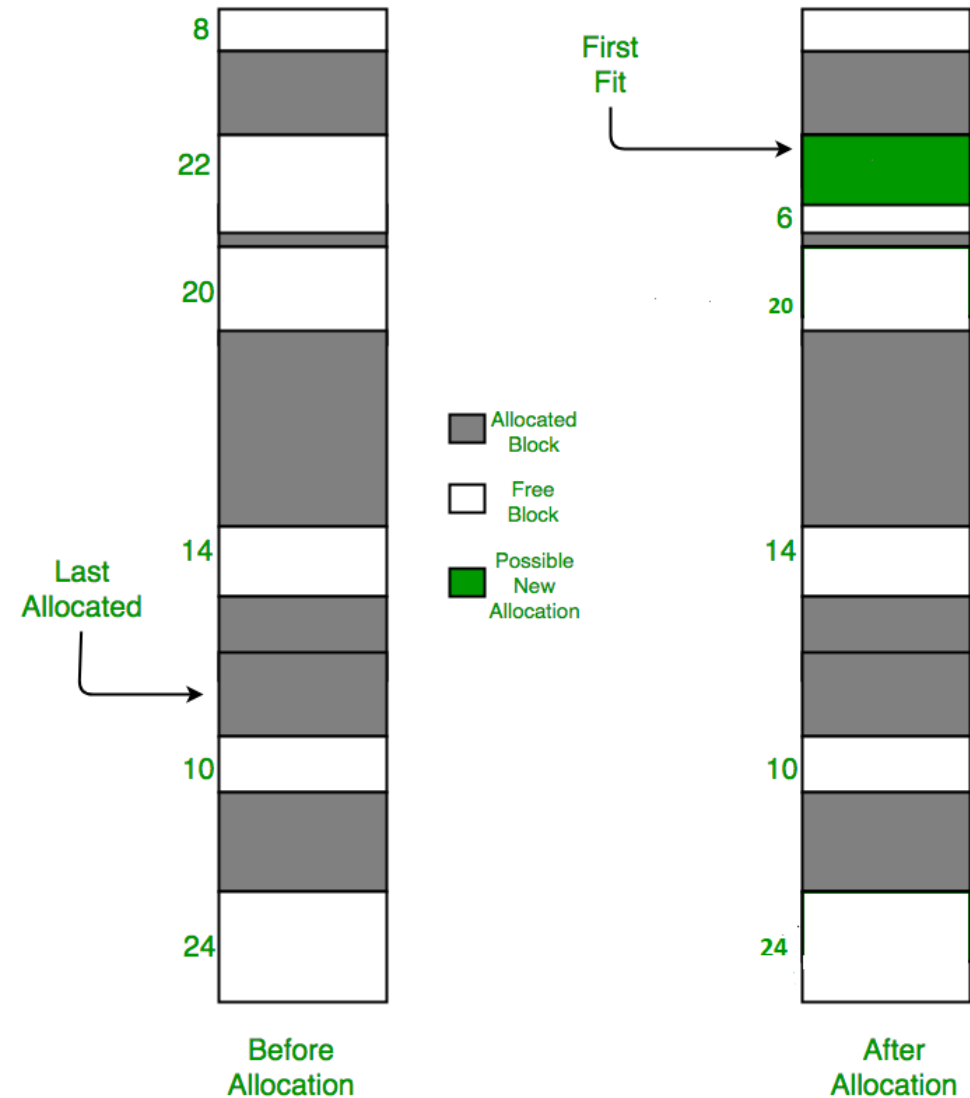
Memory Management Techniques

- First Fit Algorithm
- Worst Fit Algorithm
- Best Fit Algorithm

First Fit Algorithm

- This algorithm starts scanning from the beginning of available memory to the end, until the first free space which is at least big enough to accept the data is found.

Memory Allocation before and after allocation of 16 M of memory



First Fit Algorithm

Advantage:

- Fastest algorithm because it searches as little as possible.

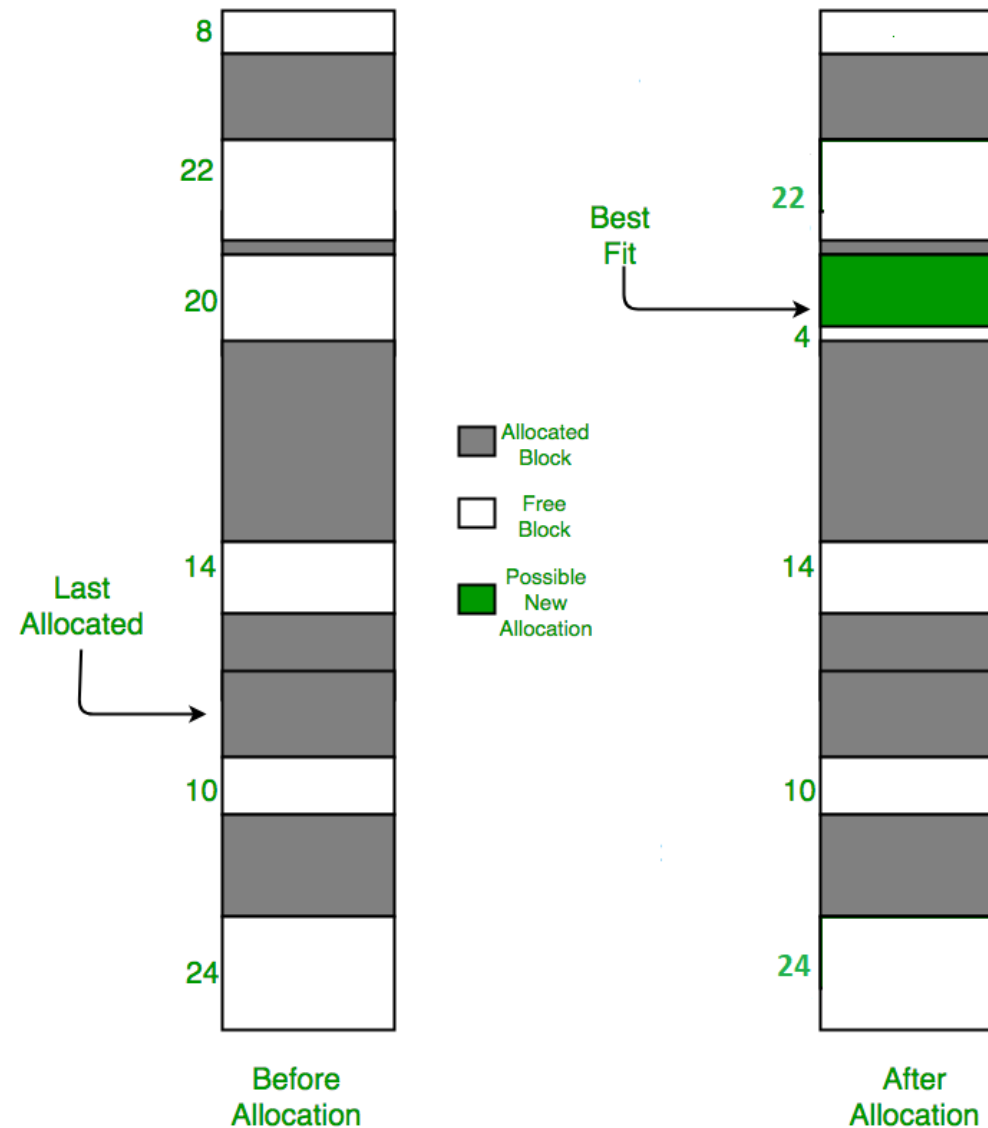
Disadvantage:

- Internal and External Fragmentation.

Best Fit Algorithm

- The best fit deals with allocating the smallest free partition which meets the requirement of the requesting process.
- This algorithm first searches the entire list of free partitions and considers the smallest hole that is adequate.

Memory Allocation before and after allocation of 16 M of memory



Best Fit Algorithm

Advantages:

- Memory utilization is much better than first fit as it searches the smallest free partition.
- It is best for variable size partitioning.

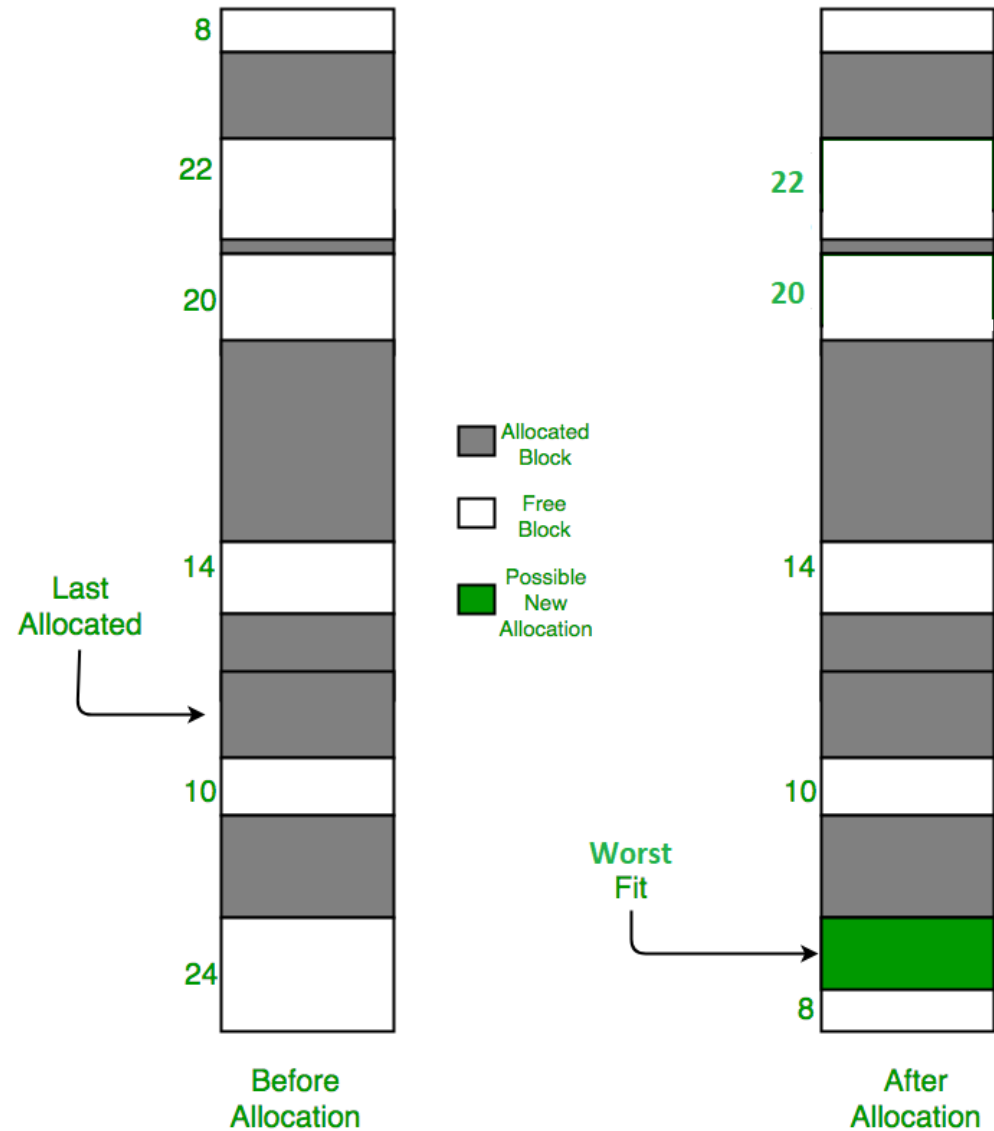
Disadvantages:

- It is slower because it has to search for the entire memory space.
- It is not recommended for fixed size partitioning.

Worst Fit Algorithm

- In worst fit, the approach is to locate the largest available free portion, so that the portion left will be big enough to be useful.
- It is the reverse of best fit.

Memory Allocation before and after allocation of 16 M of memory



Worst Fit Algorithm

Advantage:

- It is best for variable size partitioning.

Disadvantages:

- If a process requiring larger memory arrives at a later stage, then it cannot be accommodated, as the largest hole is already split and occupied.
- It is not recommended for fixed size partitioning.