

# Important decisions

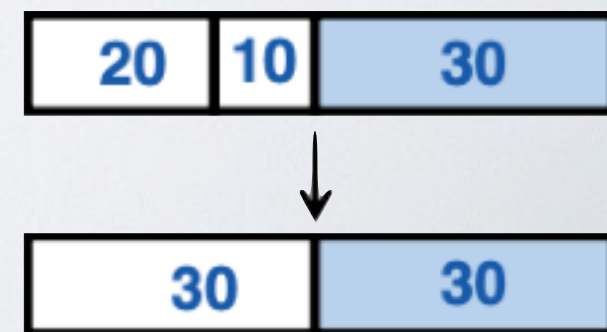
## **Placement choice : where in free memory to put a requested block?**

- Freedom : can select any memory in the heap
- Ideal : put block where it won't cause fragmentation later (impossible in general, requires future knowledge)

## **Split free blocks to satisfy smaller requests?**

- Freedom : can choose any larger block to split
- Ideal : choose block to minimize fragmentation

## **Coalescing free blocks to yield larger blocks**



# Fragmentation is impossible to solve

## **Theoretical result**

For any allocation algorithm, there exist streams of allocation and deallocation requests that defeat the allocator and force it into severe fragmentation

➡ Avoiding fragmentation is impossible