Comparing First Fit and Best Fit

First Fit

✓ Simplest, and often fastest and most efficient

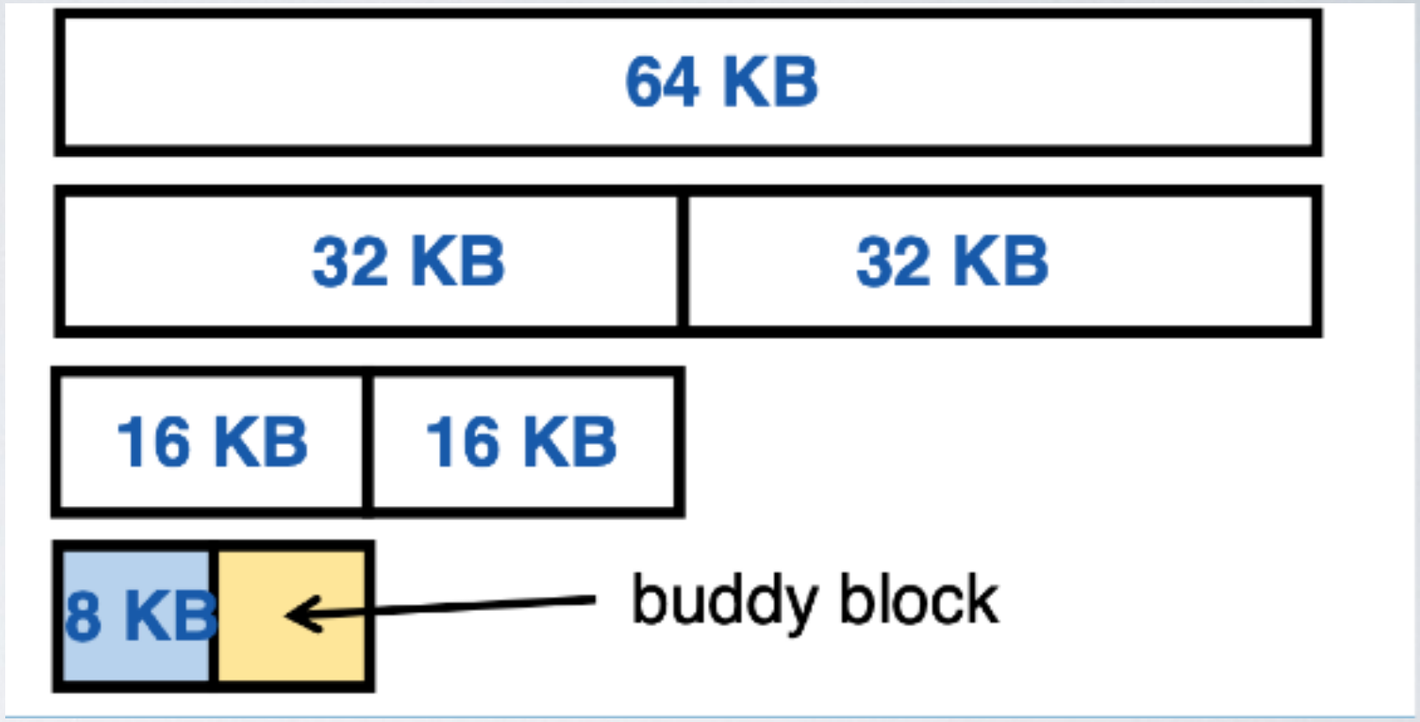
◉ May leave many small fragments near start of memory that must be searched repeatedly

Best Fit

✓ In practice, similar storage utilization to first-fit

◉ Left-over fragments tend to be small (unusable)

Buddy Allocation



➡ Allocate blocks in 2^k

Data structure

Maintain n free lists of blocks of size 2^0, 2^1, …, 2^n

Code

- recursively divide larger blocks until reach suitable block
- insert buddy blocks into free lists
- upon free, recursively coalesce block with buddy if buddy free

➡ the addresses of the buddy pair only differ by one bit