Memory Allocation Problem
Best fit, Worst fit, First fit

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Question

- consider a swapping system in which memory consists of the following sizes of holes in memory order: 11 kb, 5 kb 21 kb 18 kb 8 kb 10 kb 13 kb and 16 kb which hole is taken for successive segment request of
- 13 kb
- 11 kb
- 9 kb
- for first fit, best fit and worst fit

Solution

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

Segment/ Process	Size
Segment 1	13k
Segment 2	11k
Segment 3	9k

Best fit

- All 8 holes are free first
- For first process segment i.e. 13 k will fit best in hole 7 i.e. 13 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

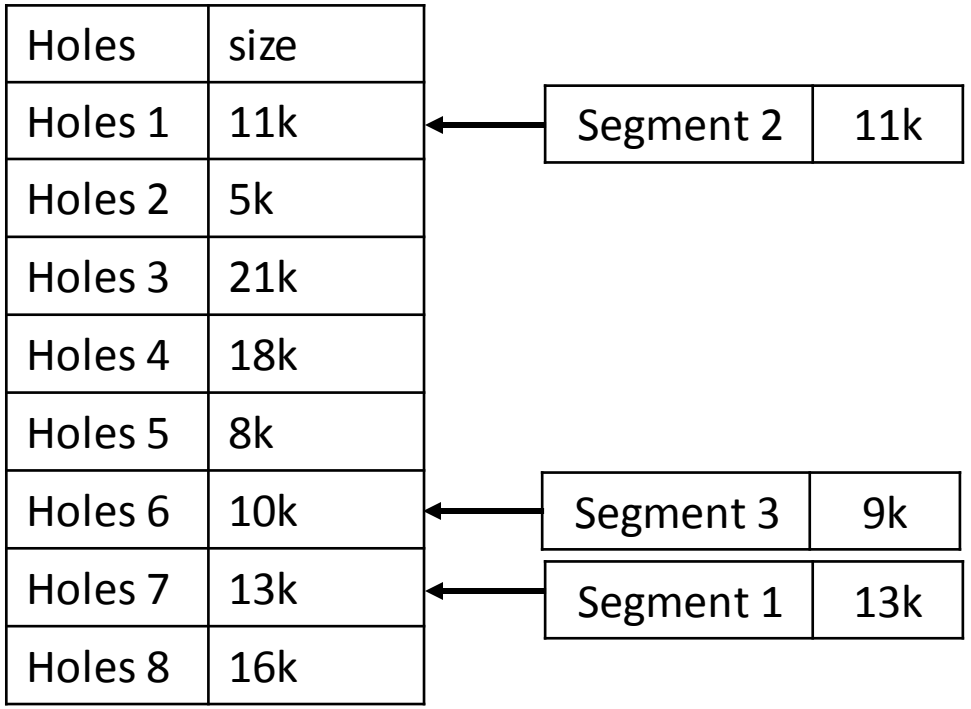
Best fit

- Only 7 holes are free (hole 7 is occupied)
- For second process segment i.e. 11 k will fit best in hole 1 i.e. 11 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

Best fit

- Only 6 holes are free (hole 7,1 is occupied)
- For third process segment i.e. 9 k will fit best in hole 6 i.e. 10 k size



First fit

- All 8 holes are free first
- For first process segment i.e. 13 k will fit best in hole 3 i.e. 21 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

First fit

- Only 7 holes are free (hole 3 is occupied)
- For second process segment i.e. 11 k will fit best in hole 1 i.e. 11 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

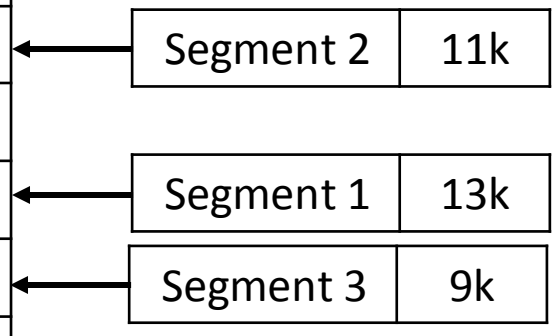
Segment 2	11k

Segment 1	13k

First fit

- Only 6 holes are free (hole 7,1 is occupied)
- For third process segment i.e. 9 k will fit best in hole 4 i.e. 18 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k



Worst fit

- All 8 holes are free first
- For first process segment i.e. 13 k will fit best in hole 3 i.e. 21 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

Worst fit

- Only 7 holes are free (hole 3 is occupied)
- For second process segment i.e. 11 k will fit best in hole 4 i.e. 18 k size

Holes	size
Holes 1	11k
Holes 2	5k
Holes 3	21k
Holes 4	18k
Holes 5	8k
Holes 6	10k
Holes 7	13k
Holes 8	16k

Segment 1	13k
Segment 2	11k

Worst fit

- Only 6 holes are free (hole 3,4 is occupied)
- For second process segment i.e. 9k will fit best in hole 8 i.e. 16k size