

Due: Fri Feb 14, 2025 11:59pm

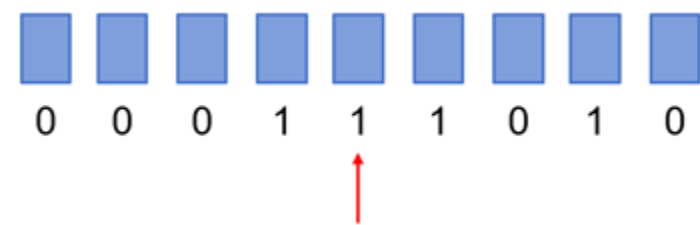
Review Feedback
SUBMITTED: Feb 14, 2025 11:20pm

Anonymous Grading: **no**

Unlimited Attempts Allowed

Details

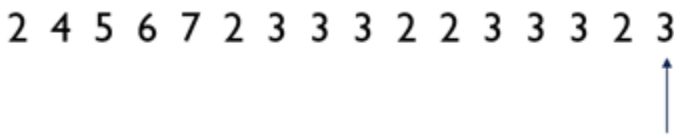
Q1: Using Second Chance Replacement algorithm, what would be the next frame replaced? What would be the values of the reference bits?



Q2: Think of the possible advantages of the second chance replacement algorithm.

Q3: What would be drawbacks of proportional memory allocation?

Q4: What is the working set for the process at this stage in execution? How many frames should the OS allocate for this process? Consider delta = 13



Answer1:

Given sequence,

0	0	0	1	1	1	0	1	0
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As OS proceeds and encounters 1s, it replaces those 1s with 0s and upon finding a 0, the frame is removed and the 0 is turned into 1. Thereby,

						removed		
0	0	0	1	0	0	1	1	0



Answer2:

Advantages of the Second Chance Replacement Algorithm:

- No need to pause programs to reset bits, as the bits are reset during the search.
- No need to reset all bits, because only the relevant bits are reset.

- Fewer stalls and shorter penalties.

Answer3:

Drawbacks of Proportional Memory Allocation:

- Processes do not need all their pages in memory.
- The number of frames required is not always proportional to the process size.
- The number of frames required might vary during run time.

Answer4:

Given the execution set for the process and $\Delta = 13$,
 2 4 5 **6 7 2 3 3 3 2 2 3 3 2 3** : the working set for $\Delta = 13$ is, $\{ 2, 3, 6, 7 \}$

Hence, the number of frames that OS should allocate for this process = size of the working set = 4 **(ANS)**