Worksheet 11

2/12/2025

16/16 Points

Attempt 1

Review Feedback
2/12/2025

Attempt 1 Score:
16/16

Add Comment

Anonymous Grading: **no**

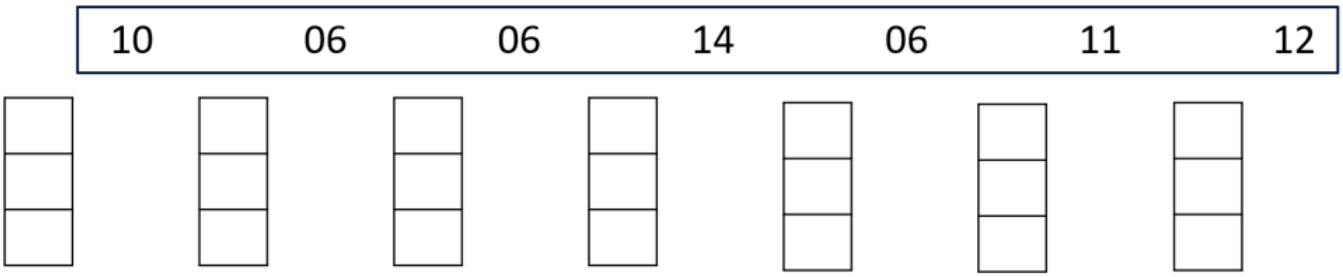
Unlimited Attempts Allowed

Details

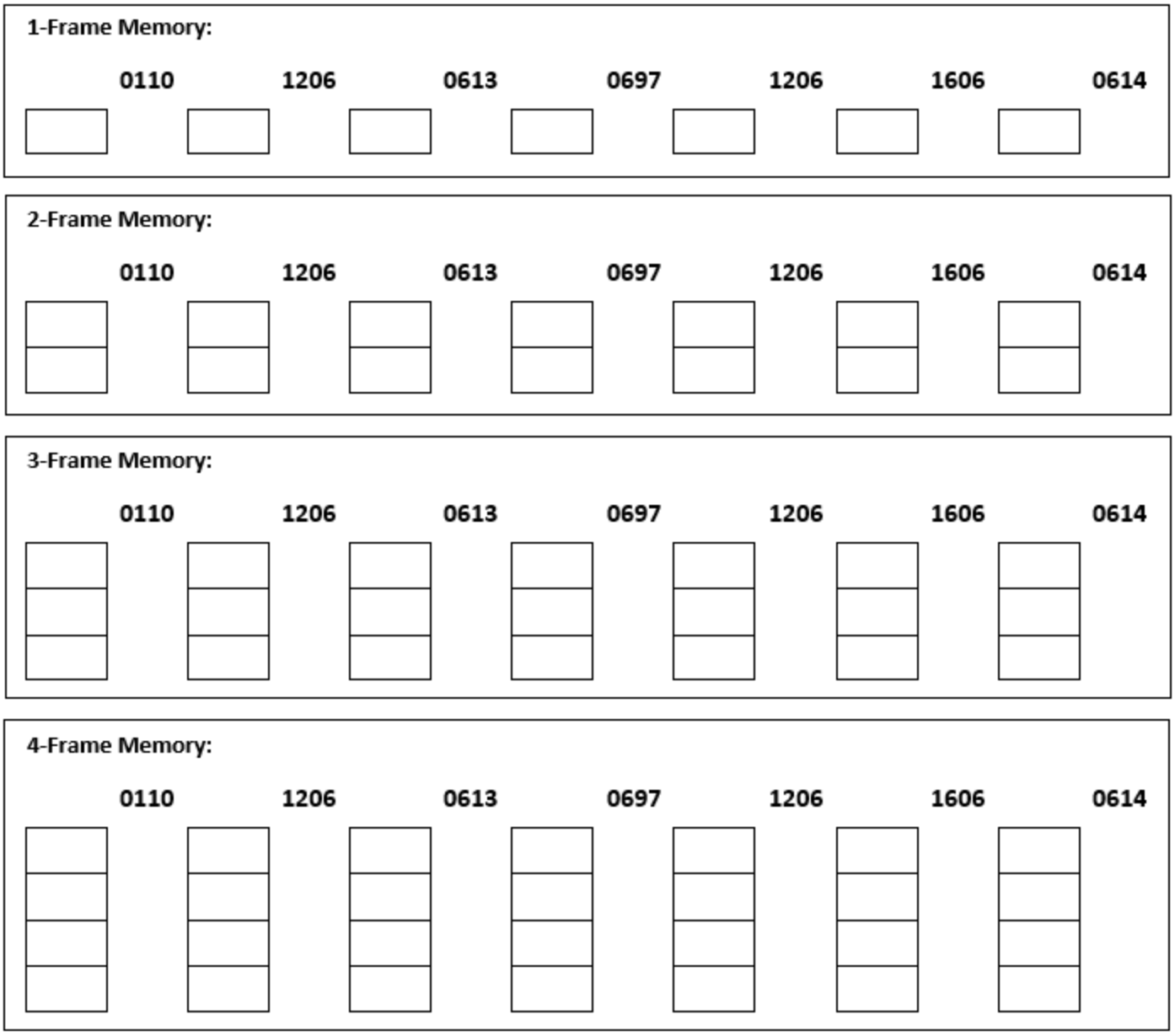
Q1: What are the new entries in the page table after retrieving page from storage**?**

Q2: What are possible criteria or factors for selecting the victim page?

Q3: Assuming FIFO page replacement and a 3-frame limit for the process, how would the frames be filled? Which instances of memory access would cause a page fault?



Q4: Assume a page/frame architecture where each page has **100 bytes.** Assume the following byte (address) requests, left to right (written in base 10) generated by a process. Taking into account offset, and that pages/frames are swapped in/out, and NOT bytes, then how many page faults are generated when the memory has 1, 2, 3 or 4 frames?



Answer1:

New entries in the page table after retrieving it from storage:

I am not sure how to answer this question. :(

Answer2:

Criteria or factors for selecting the victim page:

- Duration of the page accessing the frame
- Frequency/number of times the page is accessing the frame
- Track/history of the page access

Answer3:

Given an instance of the memory access,

10	06	06	14	06	11	12

Assuming the **FIFO replacement algorithm** and **3-frame limit** for the process,

- There will be 5 page faults as shown below.
- Using the FIFO approach, we replaced 10 (the oldest one) with the new entry 11.
- Using the FIFO approach, we again replaced 06 with the new entry 12.

Page Fault	Page Fault	✓	Page Fault	✓	Page Fault	Page Fault
10	06	06	14	06	11	12

3-frame Memory:

10	10	10	10	10	**11**	11
	06	06	06	06	06	**12**
			14	14	14	14

Answer4:

Given an instance of the byte requests,

01	12	06	06	12	16	06

Assuming the **FIFO replacement algorithm** and **frame limits as 1, 2, 3, 4** for the process,

1-frame Memory:

- There will be 6 page faults as shown below.

Page Fault	Page Fault	Page Fault	✓	Page Fault	Page Fault	Page Fault
01	12	06	06	12	16	06

1-frame Memory:

01	12	06	06	12	16	06

2-frame Memory:

- There will be 4 page faults as shown below.

Page Fault	Page Fault	Page Fault	✓	✓	Page Fault	✓
01	12	06	06	12	16	06

2-frame Memory:

01	01	06	06	06	06	06
	12	12	12	12	**16**	16

3-frame Memory:

- There will be 4 page faults as shown below.

Page Fault	Page Fault	Page Fault	✓	✓	Page Fault	✓
01	12	06	06	12	16	06

3-frame Memory:

01	01	01	01	01	**16**	16
	12	12	12	12	12	12
		06	06	06	06	06

4-frame Memory:

- There will be 4 page faults as shown below.

Page Fault	Page Fault	Page Fault	✓	✓	Page Fault	✓
01	12	06	06	12	16	06

4-frame Memory:

01	01	01	01	01	01	01
	12	12	12	12	12	12
		06	06	06	06	06
					16	16

New Attempt