King Saud University College of Computer & Information Sciences Department of Computer Science



CS227: Operating Systems

Tutorial 9

Second Semester 1442

Bonus Homework Submission deadline: Saturday March 20th by 11:59 pm

Q2) Consider the following page reference string:

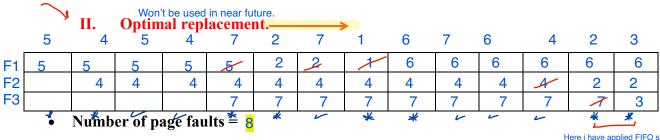
5,4,5,4,7,2,7,1,6,7,6,4,2,3.

How many page faults would occur for the following replacement algorithms, assuming three frames were allocated for the process? Please indicate page faults with an asterisk.

Remember that all frames are initially empty, so your first unique pages will cost one fault each.

5	I. 4	5	4	acemen 7	2	7	1	6	7	6	4	2	3	
5	5	5	5	15	2	2	2	2	7	7	7	7	3	
	4	4	4	4	4 .	4	1	1	1	1	4	4	4	
				7	7	7	7	6	6	6	18	2	2	
*	Numl	per of	page f	aults =	10 *		*	*	*	-	ĸ	*	*	

Best one!



Here i have applied FIFO since 6 4 7 won't be used anymore.

	Page which is not in use for a long time. III. LRU replacement.														
	5	4	5	4	7	2	7	1	6	7	6	4	2	3	
F1	5	5	5	5	B	2	2	2	6	6	6	6	8-	• 3	
F2		4	4	4	4	4	A	1	1	1	1	4	4	4	
F3					7	7	7	7	7	7	7	7 -	2	2	
	+	NT			-14.*	<u> </u>		*	*		_	*	4	*	

Number of page faults = 9

IV. Most Recently Used (MRU) replacement: removes from memory the most recently used page.

	5	4	5	4	7	2	7	1	6	7	6	4	2	3	
F1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
F2		4	4	4	4	4	4	4	4	4	4	4	2	, 3	
F3					7	, 2	7	1	B	7	6	6	6	6	
•	Number of page faults = 11							*	*	*	*	V	*	*	

