

## HW 5 - Page Faults

9.21 Consider the following page reference string

7, 2, 3, 1, 2, 5, 3, 4, 6, 7, 7, 1, 0, 5, 4, 6, 2, 3, 0, 1

Assuming demand paging with three frames, How many page faults would occur for the following replacement algorithms?

FIFO

~~LRU~~ replacement (3 frames)

7	2	3	1	2	5	3	4	6	7	7	1	0	5	4	6	2	3	0	1
7	7	7	1	x	1	x	1	6	6	x	6	0	0	0	6	6			
	2	2	2		5		5	5	7		7	7	5	5	5	2			
		3	3		3		4	4	4		1	1	1	4	4	4			

3	0	1
6	0	0
2	2	1
3	3	3

17 page faults

LRU

~~FIFO~~ replacement (3 frames)

x ————— Least Recently Used

7	2	3	1	2	5	3	4	6	7	7	1	0	5	4
7	7	7	1	x	1	3	3	3	7	x	7	7	5	5
	2	2	2		2	2	4	4	4		1	1	1	4
		3	3		5	5	5	6	6		6	0	0	0

6	2	3	0	1
5	2	2	2	1
4	4	3	3	3
6	6	6	0	0

18 page faults

HW 2 - Page Faults

Optimal Replacement (Look into the future)

7, 2, 3, 1, 2, 5, 3, 4, 6, 7, 7, 1, 0, 5, 4, 6, 2, 3

7	7	7	1	X	1	X	1	1	1	X	X	1	X	1	1	1	1
2	2	2	2		5		2	6	7			0		0	0	0	0
3	3	3	3		3		5	5	5			5		4	6	2	3

0, 1

13 Page Faults

X X