

- 3) Optimal Page Replacement
 Replace a page that will not be used in near future.

Pages	7	0	1	2	0	3	0	4	2	3	0	3	2	3
F1	7	7	7	7	7	3	3	3	3	3	3	3	3	3
F2		0	0	0	0	0	0	0	0	0	0	0	0	0
F3			1	1	1	1	1	4	4	4	4	4	4	4
F4														
F4	X	X	X	X	✓	X	✓	X	✓	✓	✓	✓	✓	✓

Page fault = 6

Page Hit = 8

Hit Ratio = $8/14$

Miss Ratio = $6/14$

2) Pages	4	7	6	1	7	6	1	2	7	2
F1	4	4	4	1	1	1	1	1	1	1
F2		7	7	7	7	7	7	7	7	7
F3			6	6	6	6	6	2	2	2
	X	X	X	X	✓	✓	✓	X	✓	✓

Page fault = 5, Hit = 5

Pages	3	2	1	3	4	1	6	2	4	3	4	2	1	4	5	2	1	3	4	(3)
F1	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	
F2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	
F3			1	1	1	1	6	6	6	3	3	3	1	1	1	1	1	1	4	
	X	X	X	✓	X	✓	X	✓	✓	X	✓	✓	X	✓	X	✓	✓	X	X	

Page fault = 10

Page hits = 9

Hit Ratio = $9/19$

Miss Ratio = $10/19$

Comparison (FIFO, LRU, Optimal)

String:- 3 2 1 3 4 1 6 2 4 3 4 2 1 4 5 2 1 3 4

Page faults

1 3	FIFO
1 4	LRU
1 0	Optimal

Best is optimal page replacement