CSC369 A3 Report

1. Table 1

	A	B	C	D	E	F	G
1	**Statistics: page-simpleloop.ref**						
2		**Hit Rate**	**Hit count**	**Miss count**	**Overall Eviction count**	**Clean eviction count**	**Dirty eviction count**
3	Memory Size = 50						
4	FIFO	22.4822%	759	2617	2567	45	2522
5	LRU	25.2073%	851	2525	2475	0	2475
6	CLOCK	25.1481%	849	2527	2477	0	2477
7	Memory Size = 100						
8	FIFO	23.7855%	803	2573	2473	23	2450
9	LRU	25.2073%	851	2525	2425	0	2425
10	CLOCK	25.1481%	849	2527	2427	0	2427
11							
12	**Statistics: page-matmul.ref**						
13		**Hit Rate**	**Hit count**	**Miss count**	**Overall Eviction count**	**Clean eviction count**	**Dirty eviction count**
14	Memory Size = 50						
15	FIFO	62.9391%	1,913,768	1,126,896	1,126,846	1,104,455	22,391
16	LRU	65.7665%	1,999,739	1,040,925	1,040,875	1,039,914	961
17	CLOCK	65.7665%	1,999,739	1,040,925	1,040,875	1,039,912	963
18	Memory Size = 100						
19	FIFO	64.3709%	1,957,302	1,083,362	1,083,262	1,071,710	11,552
20	LRU	66.9061%	2,034,389	1,006,275	1,006,175	1,005,215	960
21	CLOCK	67.0594%	2,039,051	1,001,613	1,001,513	1,000,552	961
22							
23	**Statistics: page-blocked.ref**						
24		**Hit Rate**	**Hit count**	**Miss count**	**Overall Eviction count**	**Clean eviction count**	**Dirty eviction count**
25	Memory Size = 50						
26	FIFO	99.8245%	3,507,538	6,166	6,116	4,121	1,995
27	LRU	99.8618%	3,508,848	4,856	4,806	2,604	2,202
28	CLOCK	99.8473%	3,508,339	5,365	5,315	3,039	2,276
29	Memory Size = 100						
30	FIFO	99.8817%	3,509,549	4,155	4,055	2,738	1,317
31	LRU	99.8971%	3,510,089	3,615	3,515	2,568	947
32	CLOCK	99.8866%	3,509,721	3,983	3,883	2,570	1,313

2. Paragraph

In all traces and for both memory sizes of 50 and memory size of 100, FIFO has the lowest hit rate and the highest overall eviction count comparing to LRU and CLOCK. LRU algorithm and CLOCK algorithm have similar and really close hit rate and overall eviction count. In the trace of “simpleloop”, LRU gives a slightly higher hit rate and lower overall eviction count than CLOCK in both memory size cases. In running the more memory aware task for “BLOCK”(more memory aware matrix multiply), LRU also gives a slightly higher hit rate and lower overall eviction count

than CLOCK in both memory size cases. However, in the trace of "matmul" with a memory size of 50, LRU and CLOCK gives exactly the same hit rate and overall eviction count. In the trace of "matmul" with a memory size of 100, CLOCK slightly outperforms LRU that CLOCK has a higher hit rate and lowever overall eviction count than LRU. Moreover, when the memory size increases from 50 to 100, the hit rate for FIFO, LRU and CLOCK all increase and the overall eviction count for FIFO, LRU and CLOCK all decrease. Also,in matmul trace, dirty eviction count for FIFO is dramatically larger(more than 10 times larger) than LRU and CLOCK in both cases of memory size of 50 and memory size of 100.

3.Table 2

trace1.ref			
	Hit Rate	**Hit count**	**Miss count**
FIFO	37.50%	12	20
LRU	31.25%	10	22
CLOCK	34.38%	11	21
OPT	50.00%	16	16
trace2.ref			
	Hit Rate	**Hit count**	**Miss count**
FIFO	75.00%	24	8
LRU	75.00%	24	8
CLOCK	75.00%	24	8
OPT	75.00%	24	8
trace3.ref			
	Hit Rate	**Hit count**	**Miss count**
FIFO	0.00%	0	33
LRU	0.00%	0	33
CLOCK	0.00%	0	33
OPT	45.45%	15	18