

**Blocked; Memory Size = 50**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	99.7618	2412375	5761	5711	3286	2425
FIFO	99.7314	2411642	6494	6444	4177	2267
LRU	99.7878	2413116	5132	5082	2752	2330
OPT	99.8469	2414434	3702	3652	2572	1080
RAND	99.6571	2409956	8292	8242	5719	2523

**Blocked; Memory Size = 100**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	99.8221	2413834	4302	4202	2609	1593
FIFO	99.8209	2413805	4331	4231	2756	1475
LRU	99.8436	2414467	3781	3681	2601	1080
OPT	99.8758	2415132	3004	2904	1835	1069
RAND	99.7870	2413097	5151	5051	3326	1725

**Blocked; Memory Size = 150**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	99.8439	2414361	3775	3625	2568	1057
FIFO	99.8255	2413916	4220	4070	2650	1420
LRU	99.8443	2414483	3765	3615	2556	1059
OPT	99.8957	2415615	2521	2371	1299	1072
RAND	99.8206	2413910	4338	4188	2729	1459

**Blocked; Memory Size = 200**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	99.8674	2414929	3207	3007	1938	1069
FIFO	99.8690	2414968	3168	2968	1873	1095
LRU	99.8473	2414556	3692	3492	2433	1059
OPT	99.9061	2415865	2271	2071	1008	1063
RAND	99.8405	2414390	3858	3658	2340	1318

**Matmul; Memory Size = 50**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	63.9460	1846735	1041225	1041175	1040073	1102
FIFO	60.9670	1760702	1127258	1127208	1083225	43983
LRU	63.9486	1846932	1041220	1041170	1040069	1101
OPT	79.6587	2300510	587450	587400	586318	1082
RAND	65.5308	1892630	995522	995472	956127	39345

**Matmul; Memory Size = 100**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	65.3115	1886169	1001791	1001691	1000612	1079
FIFO	62.4809	1804422	1083538	1083438	1061220	22218
LRU	65.1524	1881701	1006451	1006351	1005272	1079
OPT	96.7869	2795168	92792	92692	91610	1082
RAND	88.7908	2564414	323738	323638	316114	7524

**Matmul; Memory Size = 150**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	98.7981	2853250	34710	34560	33482	1078
FIFO	98.8087	2853556	34404	34254	32941	1313
LRU	98.8615	2855270	32882	32732	31654	1078
OPT	99.0786	2861351	26609	26459	25377	1082
RAND	96.6605	2791702	96450	96300	93912	2388

**Matmul; Memory Size = 200**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	98.8614	2855077	32883	32683	31606	1077
FIFO	98.8267	2854077	33883	33683	32431	1252
LRU	98.8619	2855282	32870	32670	31592	1078
OPT	99.3331	2868701	19259	19059	17977	1082
RAND	98.0441	2831664	56488	56288	54662	1626

**Simpleloop; Memory Size = 50**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	72.9864	7503	2777	2727	84	2643
FIFO	71.1868	7318	2962	2912	202	2710
LRU	73.7754	7832	2784	2734	90	2644
OPT	59.6206	6129	4151	4101	1025	3076
RAND	71.7408	7616	3000	2950	251	2699

**Simpleloop; Memory Size = 100**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	73.8716	7594	2686	12862	2582	10280
FIFO	73.2004	7525	2755	2655	46	2609
LRU	74.6797	7928	2688	2588	2	2586
OPT	73.2782	7533	2747	2647	81	2566
RAND	73.9921	7855	2761	2661	52	2609

**Simpleloop; Memory Size = 150**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	73.9202	7599	2681	2531	0	2531
FIFO	73.5992	7566	2714	2564	16	2548
LRU	74.7080	7931	2685	2535	0	2535
OPT	74.2996	7638	2642	2492	1	2491
RAND	74.3971	7898	2718	2568	18	2550

**Simpleloop; Memory Size = 200**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	73.9202	7599	2681	2481	0	2481
FIFO	73.6770	7574	2706	2506	12	2494
LRU	74.7080	7931	2685	2485	0	2485
OPT	74.2996	7638	2642	2442	1	2441
RAND	74.3877	7897	2719	2519	16	2503

**Simplestack; Memory Size = 50**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	92.8935	6562	502	452	79	373
FIFO	91.6903	6477	587	537	140	397
LRU	92.8937	6889	527	477	88	389
OPT	86.1268	6084	980	930	491	439
RAND	90.9790	6747	669	619	205	414

**Simplestack; Memory Size = 100**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	94.0968	6647	417	317	4	313
FIFO	93.7429	6622	442	342	24	318
LRU	94.1613	6983	433	333	2	331
OPT	93.3182	6592	472	372	60	312
RAND	93.8916	6963	453	353	22	331

**Simplestack; Memory Size = 150**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	94.1676	6652	412	262	0	262
FIFO	94.1251	6649	415	265	1	264
LRU	94.2017	6986	430	280	0	280
OPT	94.4649	6673	391	241	1	240
RAND	94.2826	6992	424	274	4	270

**Simplestack; Memory Size = 200**

Algo:	Hit Rate	Hit Count	Miss Count	Overall Evict Count	Clean Evict Count	Dirty Evict Count
CLOCK	94.1676	6652	412	212	0	212
FIFO	94.1393	6650	414	214	0	214
LRU	94.2017	6986	430	230	0	230
OPT	94.4649	6673	391	191	1	190
RAND	94.4175	7002	414	214	2	212

**Comparison**

After running all 5 different page replacement algorithms on multiple programs, we noticed that all of the algorithms generally had a higher hit rate the larger the memory size. Along with this trend we noticed that OPT generally had the best hit rate due to its ability to decide in advance which pages will not be needed. Although for the cases of smaller memory sizes in both simplestack and simpleloop OPT had a lower hit rate. Coming in a very close second and third were LRU and CLOCK. These two generally had very close hit rates in all of the run programs due to the very similar structure that the two algorithms have. In third place we had FIFO, which performed very well still but could not beat out the algorithms mentioned above, except for the case of matmul at memory size of 50. Generally the last place algorithm amongst all programs was RAND. Since RAND has no real thought process in picking which page to evict, this makes sense.

**LRU Description**

For LRU across all programs, as we increased the memory size, the hit rates increase, which in turn causes the miss count to decrease. Along with the miss counts decreasing, the overall evict count, the clean evict count, and the dirty evict count all also decrease.