



Bilkent University Computer Engineering CS 224

Lab # 6 Report

Section # 3

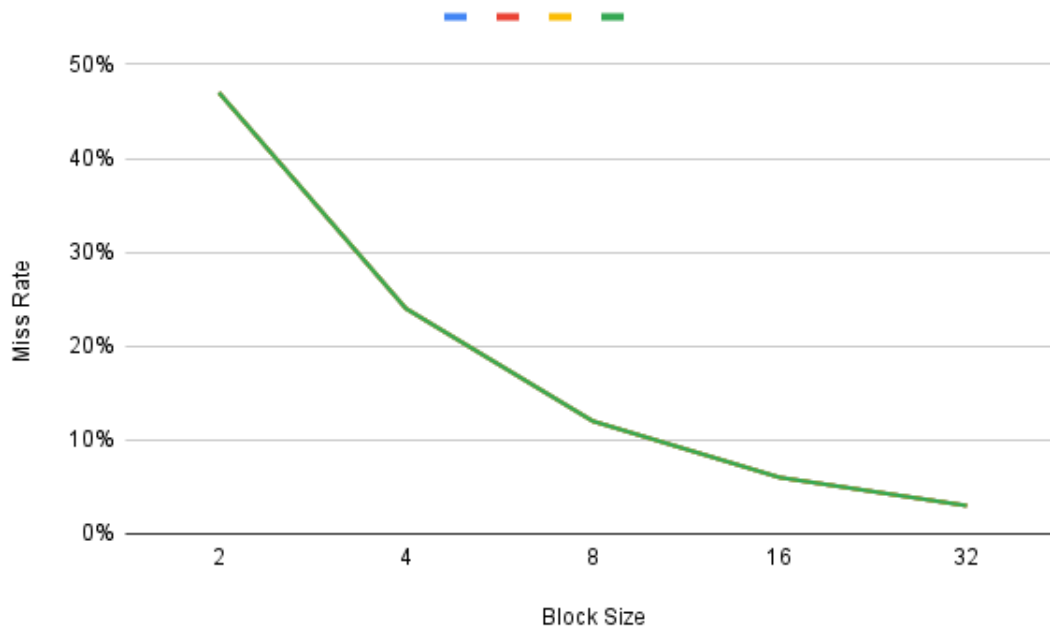
Ghulam Ahmed (22101001)

$N = 50$

a) Direct Mapped Caches

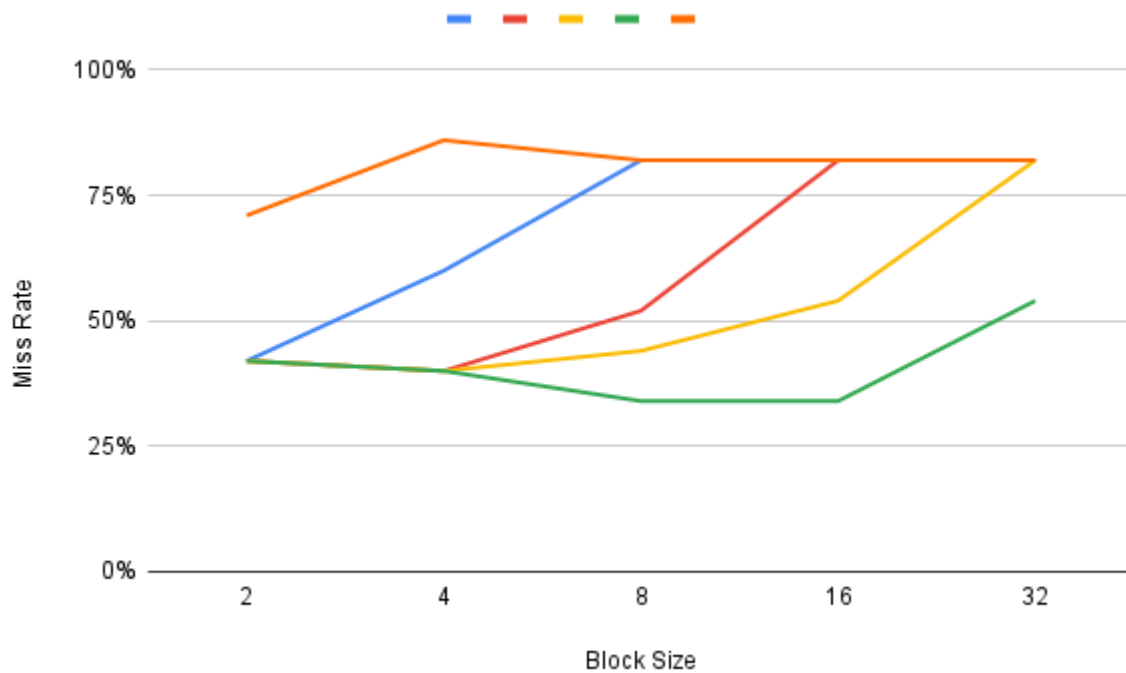
N = 50		Block Size				
		2	4	8	16	32
Cache Size	256	47% 1285	24% 644	12% 324	6% 165	3% 85
	512	47% 1285	24% 644	12% 324	6% 165	3% 85
	1024	47% 1285	24% 644	12% 324	6% 165	3% 85
	2048	47% 1285	24% 644	12% 324	6% 165	3% 85
	4096	47% 1285	24% 644	12% 324	6% 165	3% 85

Miss rate and number of misses for row-wise summation



N = 50		Block Size				
		2	4	8	16	32
Cache Size	256	71% 1285	86% 1568	82% 1484	82% 1484	82% 1484
	512	42% 796	60% 1086	82% 1484	82% 1484	82% 1484
	1024	42% 796	40% 724	52% 941	82% 1484	82% 1484
	2048	42% 796	40% 724	44% 796	54% 977	82% 1484
	4096	42% 796	40% 724	34% 615	34% 615	54% 977

Miss rate and number of misses for column-wise summation



b) Fully Associative Caches

N = 50	Good hit rate	Medium hit rate	Poor hit rate
Direct Mapped	6% 220	85% 2611	82% 2519
Fully Associative-LRU	14% 430	68% 2089	82% 2519
Fully Associative-Random	30% 922	60% 1843	82% 2519

c) N-way Set Associative Caches

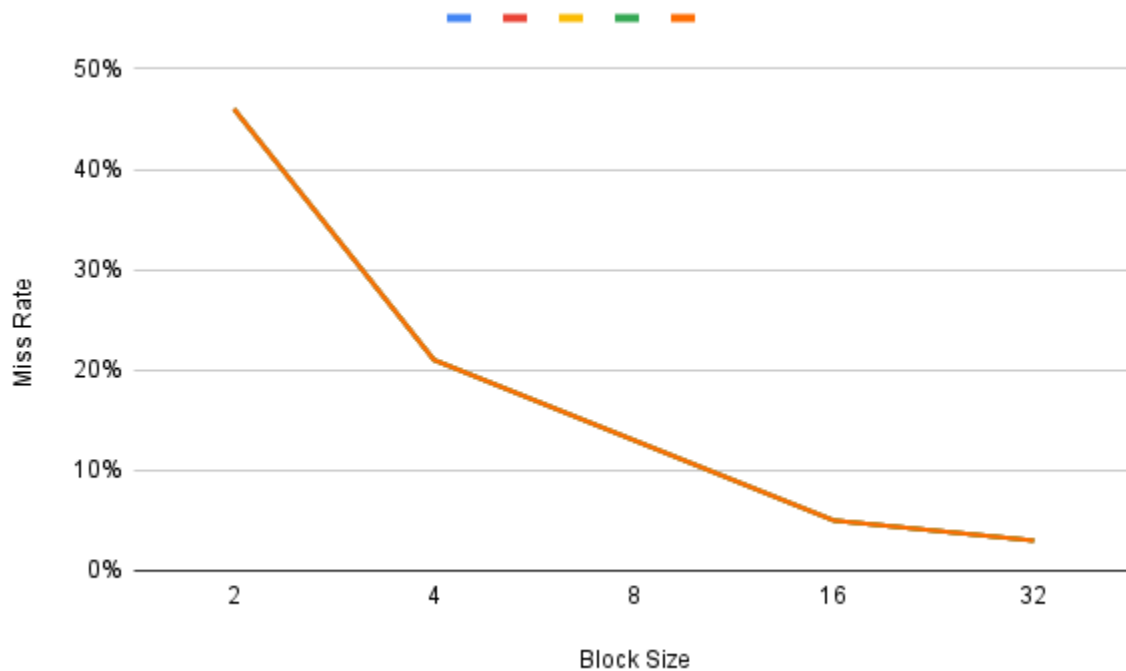
N = 50	Good hit rate	Medium hit rate	Poor hit rate
4	15% 464	82% 2537	80% 2475
8	9% 2784	82% 2537	80% 2475

$N = 100$

a) Direct Mapped Caches

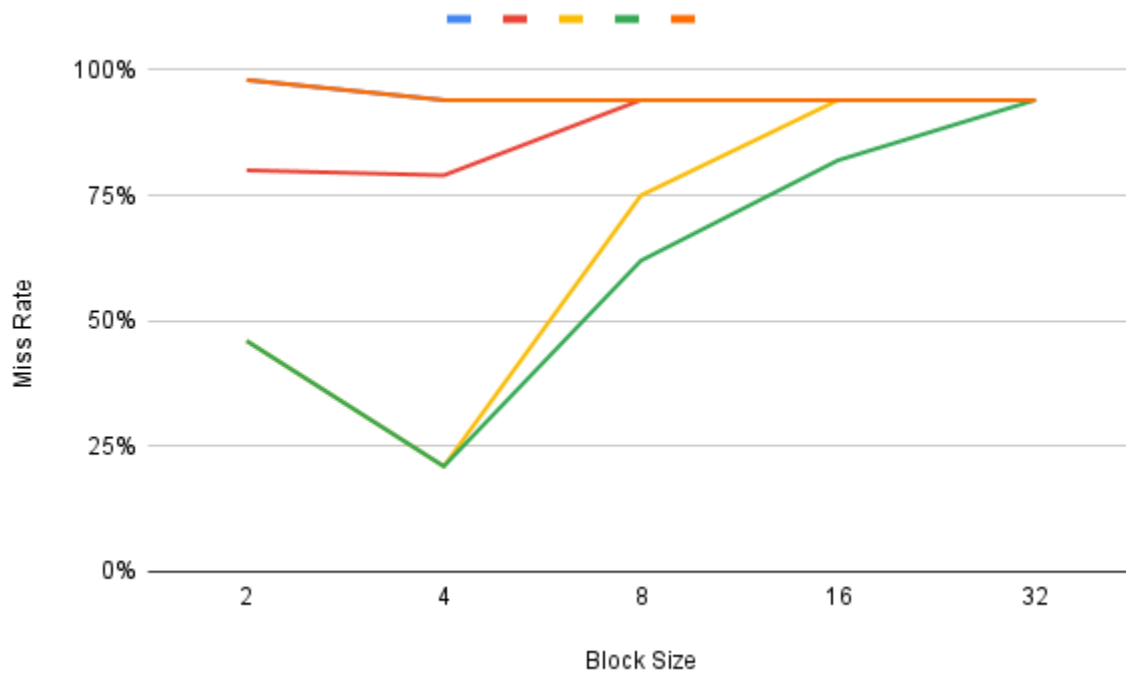
N = 100		Block Size				
		2	4	8	16	32
Cache Size	256	46% 4402	21% 2010	13% 1244	5% 479	3% 287
	512	46% 4402	21% 2010	13% 1244	5% 479	3% 287
	1024	46% 4402	21% 2010	13% 1244	5% 479	3% 287
	2048	46% 4402	21% 2010	13% 1244	5% 479	3% 287
	4096	46% 4402	21% 2010	13% 1244	5% 479	3% 287

Miss rate and number of misses for row-wise summation



N = 100		Block Size				
		2	4	8	16	32
Cache Size	256	98% 8333	94% 7990	94% 7996	94% 7988	94% 7906
	512	98% 8333	94% 7997	94% 7998	94% 7943	94% 7967
	1024	80% 6802	79% 6717	94% 7994	94% 7912	94% 7991
	2048	46% 4402	21% 1785	75% 6377	94% 7945	94% 7987
	4096	46% 4405	21% 1784	62% 5272	82% 6972	94% 7943

Miss rate and number of misses for column-wise summation



b) Fully Associative Caches

N = 100	Good hit rate	Medium hit rate	Poor hit rate
Direct Mapped	24% 2168	86% 7741	96% 8640
Fully Associative-LRU	45% 4056	69% 6215	94% 8467
Fully Associative-Random	20% 1802	73% 6578	98% 8825

c) N-way Set Associative Caches

N = 100	Good hit rate	Medium hit rate	Poor hit rate
4	23% 1869	90% 7311	91% 7392
8	23% 1869	90% 7311	91% 7392