

Mehmet Hasat Serinkan

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Course Code: CS224

LAB-6

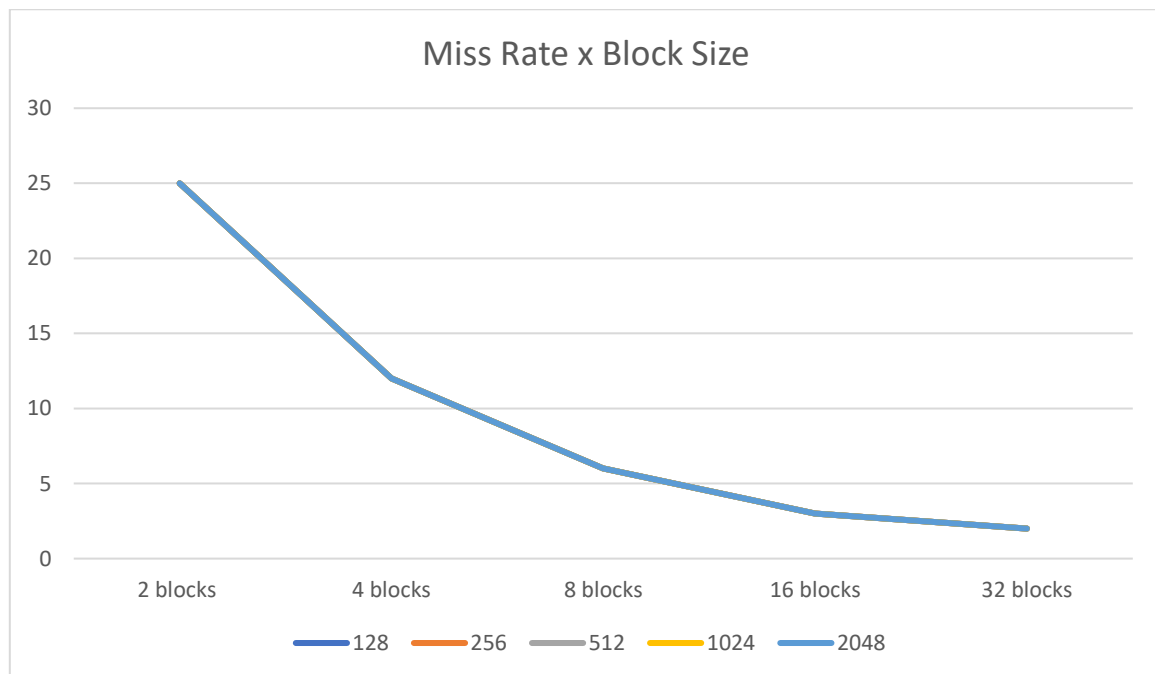
Section 4

Lab Work

Part A)

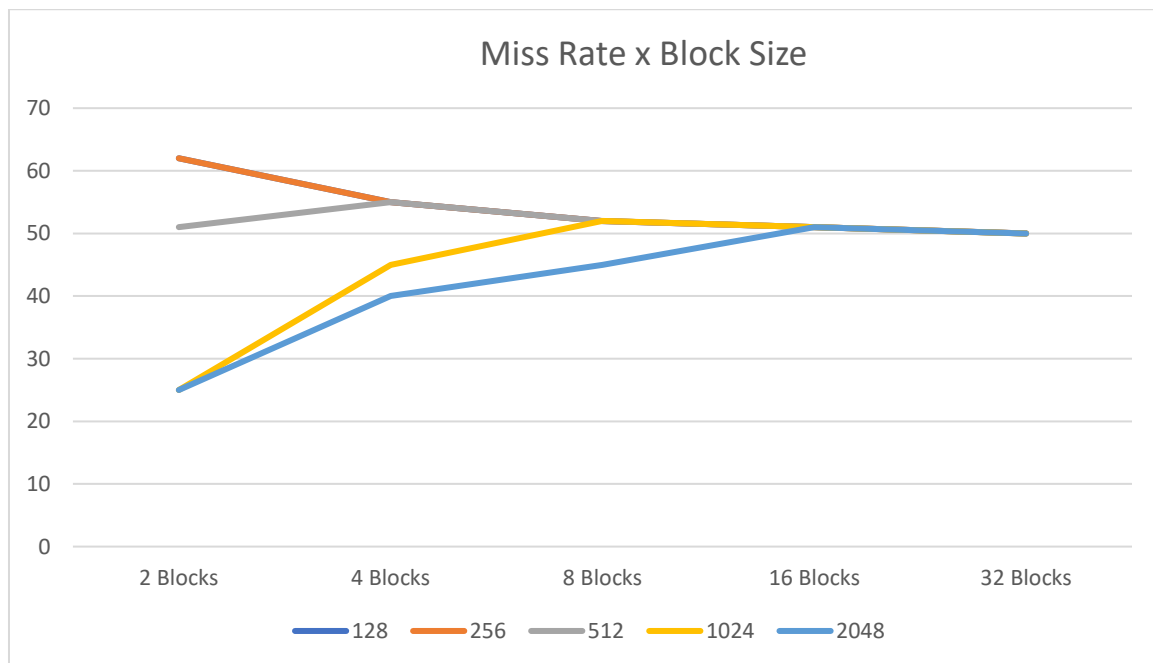
N = 100 / Row Major Sum

Block Size→ Cache Size	2	4	8	16	32
128	Miss Rate: 25% # Of Misses: 5061	Miss Rate: 12% # Of Misses: 2532	Miss Rate: 6% # Of Misses: 1269	Miss Rate:3% # Of Misses: 638	Miss Rate: 2% # Of Misses: 323
256	Miss Rate: 25% # Of Misses: 5061	Miss Rate: 12% # Of Misses: 2532	Miss Rate: 6% # Of Misses: 1269	Miss Rate:3% # Of Misses: 638	Miss Rate: 2% # Of Misses: 323
512	Miss Rate: 25% # Of Misses: 5061	Miss Rate: 12% # Of Misses: 2532	Miss Rate: 6% # Of Misses: 1269	Miss Rate:3% # Of Misses: 638	Miss Rate: 2% # Of Misses: 323
1024	Miss Rate: 25% # Of Misses: 5061	Miss Rate: 12% # Of Misses: 2532	Miss Rate: 6% # Of Misses: 1269	Miss Rate:3% # Of Misses: 638	Miss Rate: 2% # Of Misses: 323
2048	Miss Rate: 25% # Of Misses: 5061	Miss Rate: 12% # Of Misses: 2532	Miss Rate: 6% # Of Misses: 1269	Miss Rate:3% # Of Misses: 638	Miss Rate: 2% # Of Misses: 323



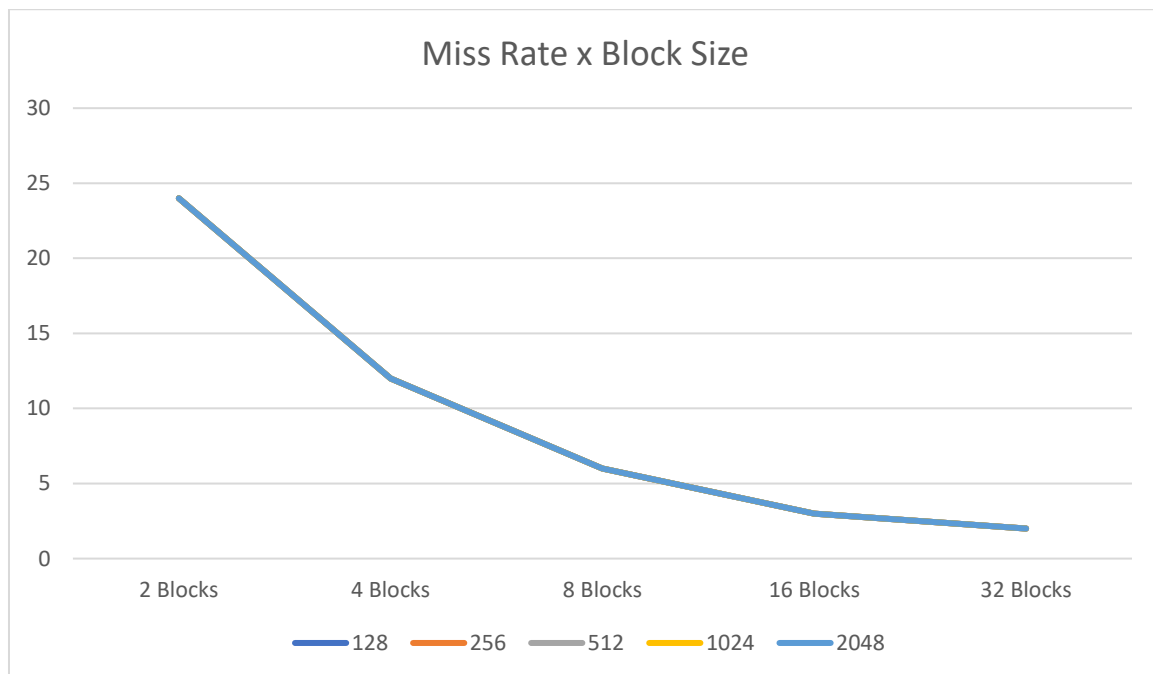
N = 100 / Col Major Sum

Block Size→ Cache Size	2	4	8	16	32
128	Miss Rate: 62% # Of Misses: 12561	Miss Rate: 55% # Of Misses: 11282	Miss Rate: 52% # Of Misses: 10644	Miss Rate: 51% # Of Misses: 10325	Miss Rate: 50% # Of Misses: 10166
256	Miss Rate: 62% # Of Misses: 12561	Miss Rate: 55% # Of Misses: 11282	Miss Rate: 52% # Of Misses: 10644	Miss Rate: 51% # Of Misses: 10325	Miss Rate: 50% # Of Misses: 10166
512	Miss Rate: 51% # Of Misses: 10461	Miss Rate: 55% # Of Misses: 11282	Miss Rate: 52% # Of Misses: 10644	Miss Rate: 51% # Of Misses: 10325	Miss Rate: 50% # Of Misses: 10166
1024	Miss Rate: 25% # Of Misses: 5058	Miss Rate: 45% # Of Misses: 9182	Miss Rate: 52% # Of Misses: 10644	Miss Rate: 51% # Of Misses: 10325	Miss Rate: 50% # Of Misses: 10166
2048	Miss Rate: 25% # Of Misses: 5027	Miss Rate: 40% # Of Misses: 8197	Miss Rate: 45% # Of Misses: 9106	Miss Rate: 51% # Of Misses: 10325	Miss Rate: 50% # Of Misses: 10166



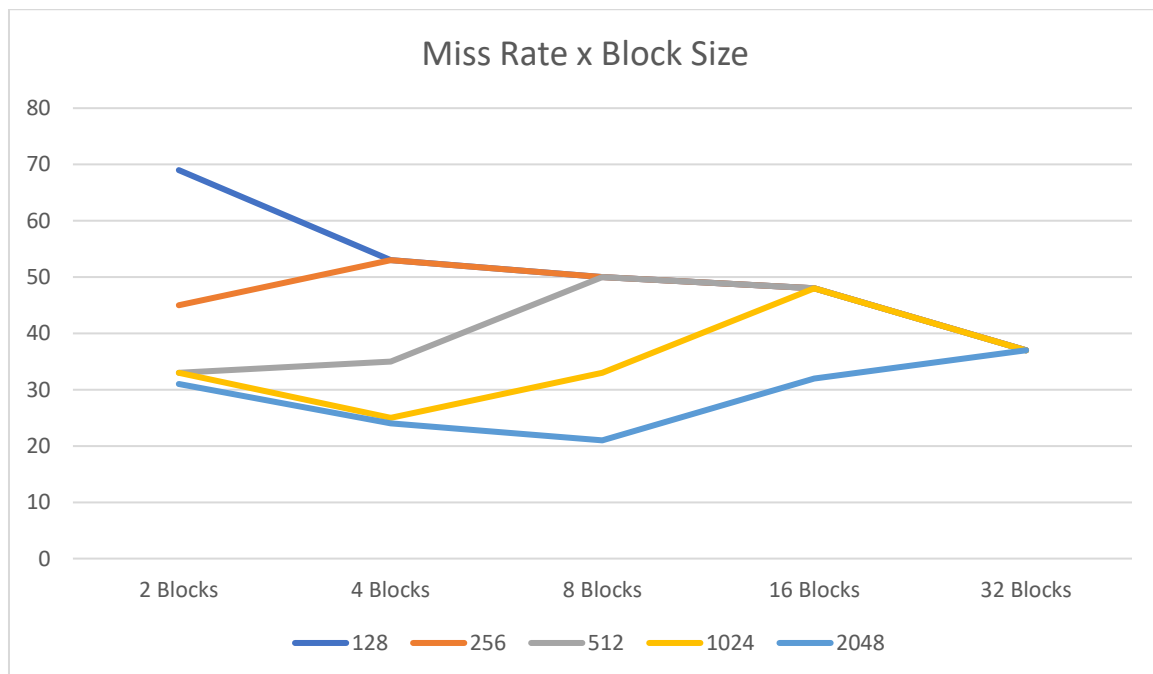
N = 50 / Row Major Sum

Block Size→ Cache Size 	2	4	8	16	32
128	Miss Rate: 24% # Of Misses: 1311	Miss Rate: 12% # Of Misses: 658	Miss Rate: 6% # Of Misses: 333	Miss Rate: 3% # Of Misses: 170	Miss Rate: 2% # Of Misses: 89
256	Miss Rate: 24% # Of Misses: 1311	Miss Rate: 12% # Of Misses: 658	Miss Rate: 6% # Of Misses: 333	Miss Rate: 3% # Of Misses: 170	Miss Rate: 2% # Of Misses: 89
512	Miss Rate: 24% # Of Misses: 1311	Miss Rate: 12% # Of Misses: 658	Miss Rate: 6% # Of Misses: 333	Miss Rate: 3% # Of Misses: 170	Miss Rate: 2% # Of Misses: 89
1024	Miss Rate: 24% # Of Misses: 1311	Miss Rate: 12% # Of Misses: 658	Miss Rate: 6% # Of Misses: 333	Miss Rate: 3% # Of Misses: 170	Miss Rate: 2% # Of Misses: 89
2048	Miss Rate: 24% # Of Misses: 1311	Miss Rate: 12% # Of Misses: 658	Miss Rate: 6% # Of Misses: 333	Miss Rate: 3% # Of Misses: 170	Miss Rate: 2% # Of Misses: 89



N = 50 / Col Major Sum

Block Size→ Cache Size	2	4	8	16	32
128	Miss Rate: 69% # Of Misses: 3186	Miss Rate: 53% # Of Misses: 2845	Miss Rate: 50% # Of Misses: 2676	Miss Rate: 48% # Of Misses: 2591	Miss Rate: 37% # Of Misses: 2003
256	Miss Rate: 45% # Of Misses: 2452	Miss Rate: 53% # Of Misses: 2845	Miss Rate: 50% # Of Misses: 2676	Miss Rate: 48% # Of Misses: 2591	Miss Rate: 37% # Of Misses: 2003
512	Miss Rate: 33% # Of Misses: 1778	Miss Rate: 35% # Of Misses: 1869	Miss Rate: 50% # Of Misses: 2676	Miss Rate: 48% # Of Misses: 2591	Miss Rate: 37% # Of Misses: 2003
1024	Miss Rate: 33% # Of Misses: 1763	Miss Rate: 25% # Of Misses: 1353	Miss Rate: 33% # Of Misses: 1789	Miss Rate: 48% # Of Misses: 2591	Miss Rate: 37% # Of Misses: 2003
2048	Miss Rate: 31% # Of Misses: 1683	Miss Rate: 24% # Of Misses: 1312	Miss Rate: 21% # Of Misses: 1128	Miss Rate: 32% # Of Misses: 1718	Miss Rate: 37% # Of Misses: 2003



Part B)

Column Major/ N= 100

	Good Hit Rate Block Size: 2 Cache Size: 2048	Medium Hit Rate Block Size: 4 Cache Size: 1024	Poor Hit Rate Block Size:2 Cache Size: 128
Direct Mapped	Miss Rate: 25% # Of Misses: 5027	Miss Rate: 48% # Of Misses: 9182	Miss Rate: 62% # Of Misses: 12561
Fully Associative LRU	Miss Rate: 25% # Of Misses: 5057	Miss Rate: 55% # Of Misses: 11282	Miss Rate: 62% # Of Misses: 12561
Fully Associative Random	Miss Rate: 28% # Of Misses: 5734	Miss Rate: 41% # Of Misses: 8430	Miss Rate: 62% # Of Misses: 12547

Column Major/ N= 50

	Good Hit Rate Block Size: 8 Cache Size: 2048	Medium Hit Rate Block Size: 16 Cache Size: 1024	Poor Hit Rate Block Size:2 Cache Size: 128
Direct Mapped	Miss Rate: 21% # Of Misses: 1128	Miss Rate: 48% # Of Misses: 2591	Miss Rate: 69% # Of Misses: 3186
Fully Associative LRU	Miss Rate: 7% # Of Misses: 376	Miss Rate: 48% # Of Misses: 2591	Miss Rate: 69% # Of Misses: 3186
Fully Associative Random	Miss Rate: 13% # Of Misses: 680	Miss Rate: 46% # Of Misses: 2502	Miss Rate: 67% # Of Misses: 3094

Part C)

Column Major/ N= 100

Set Size	Good Hit Rate Block Size: 2 Cache Size: 2048	Medium Hit Rate Block Size: 4 Cache Size: 1024	Poor Hit Rate Block Size:2 Cache Size: 128
2	Hit Rate: 75% Miss Rate: 25 % # Of Misses: 5049	Hit Rate: 53% Miss Rate: 47 % # Of Misses: 10790	Hit Rate: 38% Miss Rate: 62 % # Of Misses: 12561
4	Hit Rate: 75% Miss Rate: 25 % # Of Misses: 5054	Hit Rate: 45% Miss Rate: 55 % # Of Misses: 11282	Hit Rate: 38% Miss Rate: 62 % # Of Misses: 12561
8	Hit Rate: 75% Miss Rate: 25 % # Of Misses: 5054	Hit Rate: 45% Miss Rate: 55 % # Of Misses: 11282	Hit Rate: 38% Miss Rate: 62 % # Of Misses: 12561
16	Hit Rate: 75% Miss Rate: 25 % # Of Misses: 5056	Hit Rate: 45% Miss Rate: 55 % # Of Misses: 11282	Hit Rate: 38% Miss Rate: 62 % # Of Misses: 12561

Column Major/ N= 50

Set Size	Good Hit Rate Block Size: 8 Cache Size: 2048	Medium Hit Rate Block Size: 16 Cache Size: 1024	Poor Hit Rate Block Size: 2 Cache Size: 128
2	Hit Rate: 87% Miss Rate: 13 % # Of Misses: 700	Hit Rate: 52% Miss Rate: 48 % # Of Misses: 2591	Hit Rate: 41% Miss Rate: 59 % # Of Misses: 3186
4	Hit Rate: 89% Miss Rate: 11 % # Of Misses: 620	Hit Rate: 52% Miss Rate: 48 % # Of Misses: 2591	Hit Rate: 41% Miss Rate: 59 % # Of Misses: 3186
8	Hit Rate: 93% Miss Rate: 7 % # Of Misses: 374	Hit Rate: 52% Miss Rate: 48 % # Of Misses: 2591	Hit Rate: 41% Miss Rate: 59 % # Of Misses: 3186
16	Hit Rate: 93% Miss Rate: 7 % # Of Misses: 375	Hit Rate: 52% Miss Rate: 48 % # Of Misses: 2591	Hit Rate: 41% Miss Rate: 59 % # Of Misses: 3186