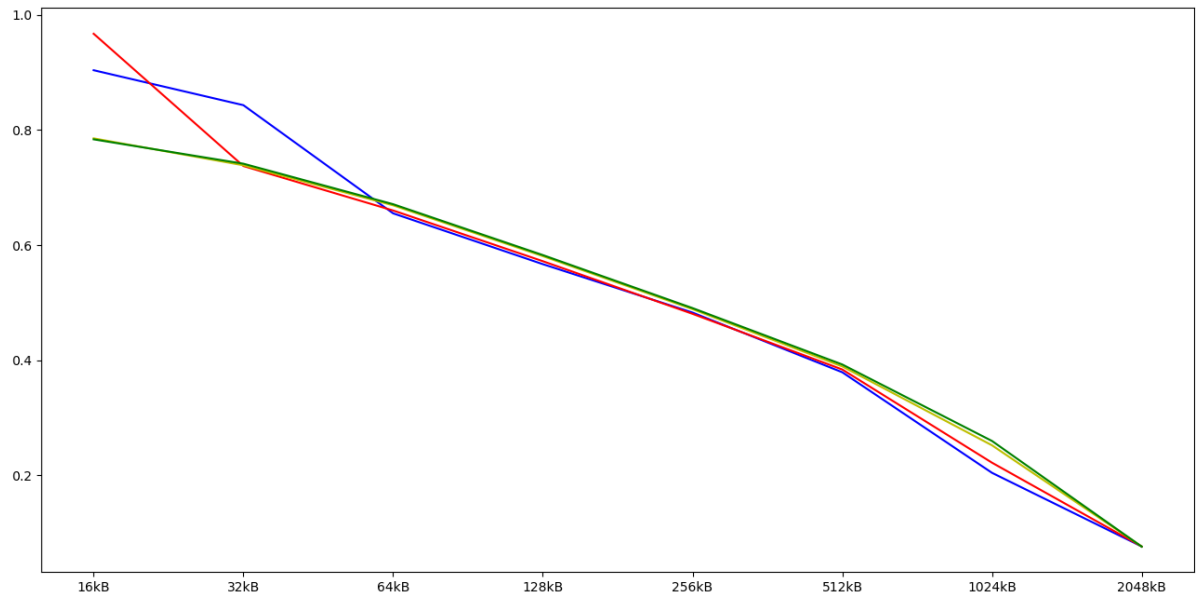


CA Assignment-1 (Animesh Pareek, 2021131)

- 1) We were able to run our program using configuration file successfully
- 2) Then we ran qsortbinary for various configurations of l2 caches. And we were able to get a mshr cache miss ratio for these configurations. (Text file (and even a table, for better visualization) has been attached in the folder)
- 3) Later we Plotted these points as well to get a graph



Blue -> associativity of l2 cache=1
Red -> associativity of l2 cache=2
Yellow -> associativity of l2 cache=4
Green -> associativity of l2 cache=8

- 4) Now we can Clearly see as Size of cache is increasing cache miss ratio is decreasing or

$$\text{Cache miss ratio (mshr)} \propto 1/\text{Cache miss rate}$$

Now we can Clearly see for initial values of cache size with increase in associativity to a certain extent we were witnessing a better cache miss ratio but with cache size in range 64kB to 512kB we witness almost equal cache miss ratio for associativity in range 1 to 8 (with least associativity performing best). But for cache size 1024kB we see a significant difference in performance with best being for associativity=1. Further we see at size 2048kB an almost equal cache miss ratio for associativity in range 1 to 8 (with least associativity performing best).

- 5) Thus, I conclude that we should have a bigger cache size with less associativity and hence among given configurations I recommend 1024kB_2 configuration.