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#COMP273 A4 Q3

A)

Q1:
Number of blocks: 1
cache block size(words): 256
cache size (bytes): 1024
53%

Number of blocks: 2
cache block size(words): 128
cache size (bytes): 1024
97%

Number of blocks: 4
cache block size(words): 64
cache size (bytes): 1024
97%

Number of blocks: 8
cache block size(words): 32
cache size (bytes): 1024
97%

Q2:
Number of blocks: 1
cache block size(words): 256
cache size (bytes): 1024
55%

Number of blocks: 2
cache block size(words): 128
cache size (bytes): 1024
97%

Number of blocks: 4
cache block size(words): 64
cache size (bytes): 1024
100%

Number of blocks: 8
cache block size(words): 32
cache size (bytes): 1024
100%

findings:
I found that the recusrsive method uses more memory compare to the iterative one.
In order to save the register in the stack, the recursive method use n-time more memory(where n is number of time the recusrion is called).
Due to the fact the recursive method is trying to store more stuff, the cache will have more miss.
By increasing the size of the cache block we can reduce the misses.

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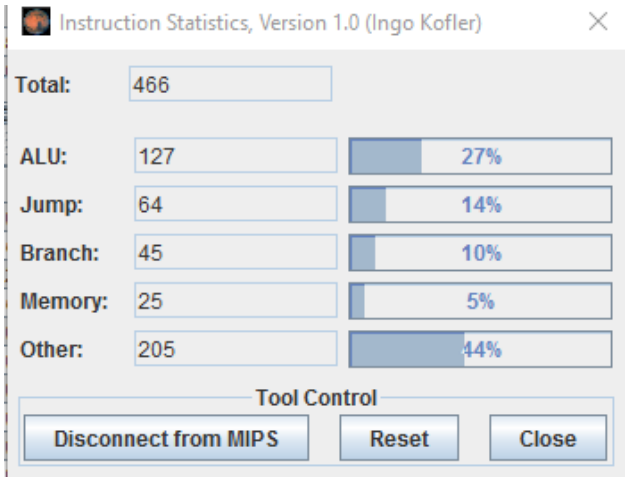
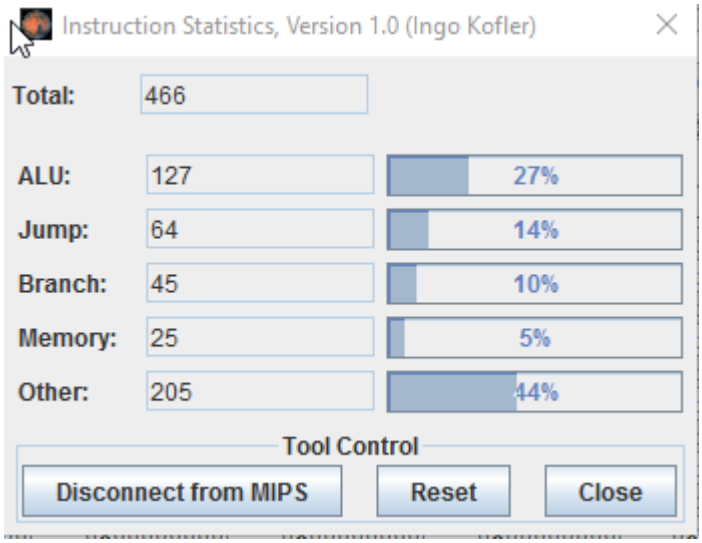
B)
Q1



Q2



it appears to me that the number of instructions in q1 and q2 are consistent.