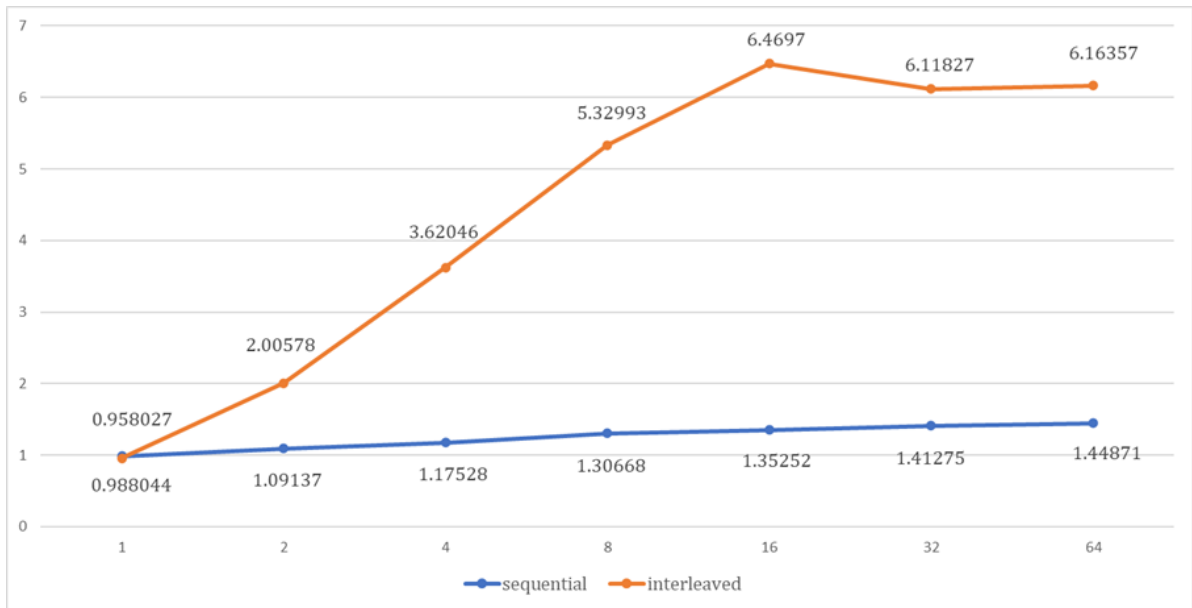
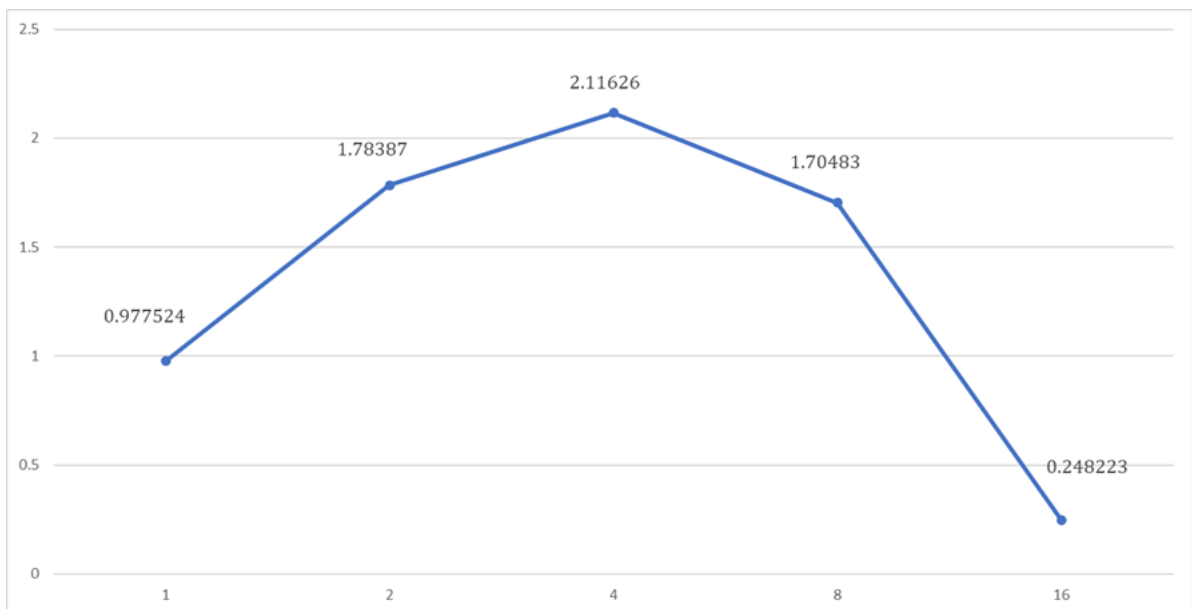


Part 1



For a single loop, it is preferred that the capacity of ILP is fully used (consider issue-width for superscalar). Besides, there should be no leftovers to clean up so that no resource has to wait for the others to finish. I think this tradeoff could be a potential explanation for the interleaved line in the figure: the program gradually makes full use of ILP but later some leftovers come into play, leading to oscillations.

Part 2



As we discussed in class, one of the disadvantages of loop unrolling is register spilling. I think this could be a potential explanation for the drastic decrease at 16.