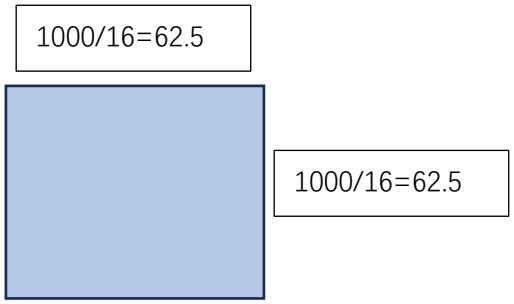
Hairu-Wen hwen020@ucr.edu

1. How many total thread blocks do we use?

   63*63=3969. Matrix Addition operates on 1000x1000 matrices, and the task uses a thread block dimension of 16x16. 1000/16=62.5, so it should be at least 63*63 blocks to cover all the data of the matrices.



2. Are all thread blocks full? That is, do all threads in the thread block have data to operate on?

   No. 63*63*16*16-1000*1000=16064 threads don't have data to operate on.

3. How can this basic Matrix Addition program be improved? (What changes do you think can be made to speed up the code?)

   Store the matrix as a floating point vector/array connecting rows, and then use only a large number of threads in each block, while using the minimum necessary number of blocks.

   Or try Grid Stride Loops, an extensible method that can organize elements in fewer threads.