Develop possibilities of optimizing the execution time of the code in Figure 4.39 (Assembly Generated by Compiler without MAC) vs Figure 4.40 (Custom Assembly without MAC). Find reasons for the difference in execution time.

Part 1: Optimize the codes

1. Use MAC
2. For the C compiler MVI could be removed by placing both arrays in the same pages at data transfers since they are small enough to all fit on one page
3. Remove excess code to increment index in C compiled code

Part 2: Reasons for difference in execution time

1. MVI instructions takes more than MOV
2. Compiled has more instructions to iterate through the array, where the assembly has one register to increment a and b array. - saves memory
3. The compiled code grabs the data from each array and stores in another register before using it, also uneccessary
4. In the Assembly, the incrementing is occuring within in \_mul8 routine and doesn’t need to do consistent lcall to the routine as the Compiled C code does and takes several instructions to do the incrementing

WHIPPEE