Translating from C to MIPS

2.33 [10] <§2.9> Show the single MIPS instruction or minimal sequence of instructions for this C statement:

\[ x[4] = x[5] + a; \]

Assume that \( a \) corresponds to register \( t3 \) and the array \( x \) has a base address of 6,400,000

Reverse Translation from MIPS to C

2.35 [10] <§§2.2, 2.3, 2.6, 2.9> Starting with the corrected program in the answer to Exercise 2.34, write the C code segment that might have produced this code. Assume that variable source corresponds to register \( s0 \), variable destination corresponds to register \( s1 \), and variable count corresponds to register \( v0 \). Show variable declarations, but assume that source and destination have been initialized to the proper addresses.

2.36 Consider the following fragment of C code:

\[
\text{for } (i=0; i<100; i=i+1) \{ a[i] = b[i] + c; \}
\]

Assume that \( a \) and \( b \) are arrays of words and the base address of \( a \) is in \( s0 \) and the base address of \( b \) is in \( s1 \). Register \( t0 \) is associated with variable \( i \) and register \( s0 \) with \( c \). Write the code for MIPS. How many instructions are executed during the running of this code? How many memory data references will be made during execution?