

Q1:

The following problem deals with translating from C to MIPS. Assume that the variables g, h, i and j are given and could be considered 32-bit integers declared in C program

- a. $f = g + h + i + j$
 - b. $f = g + (h + 5)$
- 1.1 For the C statements above, what is the corresponding MIPS assembly code ? Use a minimal number of MIPS assembly instructions.
 - 1.2 If the variables f, g, h, i and j have values 1, 2, 3, 4 and 5 respectively, what is the end value of f?
 - 1.3 How many MIPS instructions are required to run these statements

Q2:

The following problem deals with translating from MIPS to C. Assume that the variables f, g, h, i and j are assigned to registers \$s0, \$s1, \$s2, \$s3 and \$s4 respectively. Assume that the base address of the arrays A and B are in registers \$s6 and \$s7, respectively,

- a. $\text{add } \$s0, \$s0, \$s1$
 $\text{add } \$s0, \$s0, \$s2$
 $\text{add } \$s0, \$s0, \$s3$
 $\text{add } \$s0, \$s0, \$s4$
 - b. $\text{lw } \$s0, 4(\$s6)$
- 2.1 For the MIPS assembly instruction above, what is the corresponding C statement?
 - 2.2 For the MIPS assembly instructions, rewrite the code to minimize the number of instructions (if possible) needed to carry out the same functions.