Md Shahid Emdad

CSC 33200

10-27-2021

**HW 02**

Q3.

Below we give an argument to show that the interrupt mechanism (cpu hardware + service routine actions) does not work correctly. Do you agree with the argument? If not, then what is wrong with the argument?

The argument:

Suppose we have a user program fragment:

L1: CMP R1, R2

L2: Jmpn L3

…

…

L3:

Now suppose there is a hardware interrupt after executing L1 instruction. Suppose that service routine changes condition codes. So when we come back to execute L2, the Jmpn will not work correctly.

**ANSWER:**

No, the argument is not correct because the routine loads back the saved info about the computation that was going on before the occurrence of interrupt and makes the PC value same as what it was immediately before the interrupt. Therefore, it would include the condition codes set after CMP R1.R2. The flag register is one of the registers that is pushed onto the stack before the interrupt is processed and contains itself a conditional code bit. When control returns from the interrupt service routine, the precious flag register is deleted and restored. Thus, conditional codes are not lost.