

Questions and Tasks for Lecture 3

Question 3-1: What happens if your program does not jump back

a) in the simulator, or

b) inside the controller?

(Hint for b: The flash memory CANNOT be empty, it is always 0xFFFF if cells are not programmed.)

Bonus question: What makes the difference between a hardware reset to 0x0000 and a simple jump to address 0x0000? (Hint: Try to simulate that by setting some register values in between. A hardware reset in the simulator is forced with the Restart menu entry! A jump to 0x0000 can be done with RJMP 0).

Questions and Tasks for Lecture 3, Continued

Task 3-2: Go through the instruction set summary and find out if there are INC and DEC instructions for 16 bits. What are their limitations or use conditions?

Questions and Tasks for Lecture 3, Continued

Task 3-3: Find the differences between DEC R16 and SUBI R16,1 in respect to

- a) their execution time, and**
- b) the affected flags in the status register.**

Bonus question: There is no ADDI instruction listed in the instruction set. How can you then increase a register's content with the same flag settings like in SUBI? (Try to simulate your solution and see if the flags Z and C are set/cleared correct.)