

Questions and tasks in Lecture 5

Question 5-1: The instructions PUSH register throws the register content onto the stack and POP register recalls the last value from the stack.

What happens with a POP when the PUSHed values are exhausted (Which value comes back? Which position has the stack pointer?).

Bonus question: What happens if you PUSH a value to an uninitialized stack (the stack pointer is at zero after a RESET).

Questions and tasks in Lecture 5 - Continued

Task 5-2: Design a schematic and program source code that blinks a 2-pin red/green LED with 0.9 seconds in green and 0.1 seconds in red.

Hint: Forward voltages for such LEDs are around 2.0 Volt. Think about using Zener diodes.

Questions and tasks in Lecture 5 - Continued

Task 5-3: Design a schematic and write a program that outputs four bits in binary format on PA0 to PA3 (ones: LED on, zeroes: LED off), then waits for a second and counts up.

Bonus question: What happens if 0x10 is reached after 16 seconds? Is it necessary to restart the counter?