Lab 4: Timers, Interruptus

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In this lab you will write a program that uses timers to create dancing LEDs!

Dancing LEDs

Open the attached video clip where it shows that the LED light moves around in a simple pattern. You will implement a similar program in this lab. Define an array of LEDs in the program. To implement one pattern, you have to use an autoload timer. Creating tasks and calling delay functions are not allowed in this assignment. Implement a few different patterns (use your imagination for some cool dancing light patterns!). Each pattern has to use a separate timer. Using a button, the program inactivates the current pattern (stops the related timer) and activates the next pattern (starts the related timer). The button triggers an external interrupt and in the related ISR you decide which pattern to be activated.

Examination

To pass the lab hand in your code in Blackboard. Using comments try to explain different parts of your code. You also need to demonstrate the programs for the lab assistant in one of the lab sessions. The lab assistant may ask you questions related to lab task.