Lab7 description:

Prerequisites:

- Interrupts overview, chapter 6

Examples objectives:

- Understanding the NVIC capabilities. Its differences from the typical interrupt controllers. The states of NIVC exception model.
- To review the NVIC registers.
- To pass through the complete cycle of configuring and interrupt.
    - Configuring the interrupt request reason at the peripheral.
    - Writing the ISR code.
    - Adding the ISR to the vector table in the startup file.

Lab Example:

- A software to perform an LED toggle based on a button press. The Software shall detect a falling edge event on the button pin and then toggle the LED in an ISR.

Hw Assignments:

- A software to perform a decimal counter on a 7-segment display. System inputs shall be two push buttons. System output shall be 1 seven segment display. Two interrupts to be configured on GPIO falling edge, one for each button. The first ISR shall increment the counter. The second ISR shall decrement the counter. The main function shall perform the display actions. Race condition shall be taken into consideration to protect the counters from being corrupted.