Embedded Systems

Lab 7: Using Interrupts

Wednesday, 3rd November 2021

Objective is to get familiar with implementing basic interrupts on GPIO.

- Write a short program that blinks the on-board RED LED once a second. Have push button that can interrupt the blinking and blink BLUE 4x every 200ms.
    - Test when rising edge of pin is the trigger
    - Test when logic level is HIGH
- Design a system to turn an LED ON for 2 sec and then off for 1 sec. The ON-OFF sequence together is called a cycle. The system also has two inputs A and B. If A goes HIGH, the LED will turn on for 500ms and off for 500ms for three times, and then the old pattern will resume. However, this action will be triggered only after the completion of the current cycle. The system must not miss any A inputs. If B goes high at any time, the LED flashes at 100ms intervals as long as B is HIGH. This action is instant. It will interrupt whatever operation is running currently. You may use an external LED.

    Hint: you need to use systick in conjunction with GPIO interrupts