**; Purpose: To demonstrate the use of External Interrupt 0 (PD2)**; Reference: http://mail.rsgc.on.ca/~cdarcy/Datasheets/ATmega328P.pdf
; Reference: http://www.gammon.com.au/interrupts
; Author: C. D'Arcy
; Date: 2016 12 18
; Status: Working

**#include "avr/io.h"**

**.global setup**setup:
 cli ; disable global interrupts (optional)
 sbi \_SFR\_IO\_ADDR(DDRB), DDB5 ; aka: pinMode(13,OUTPUT)
 sbi \_SFR\_IO\_ADDR(PORTD), DDD2 ; enable pullup resistor (*no external 10kΩ required*)
 ldi r16, 1<<ISC00 ; *any* logical change on INT0 generates an interrupt request.
 sts EICRA,r16 ; External Interrupt Control Register A
 ldi r16,1<<INT0 ; enable External Interrupt 0 (PD2)
 sts EIMSK,r16 ; External Interrupt MaSK register
 sei ; enable global interrupts (optional)
 ret

**.global loop**loop:
 **ret**

**.global INT0\_vect**INT0\_vect: ; written to avoid clobbering *any* GP registers
 sbis \_SFR\_IO\_ADDR(PORTB),PB5 ; if LED currently on, skip the next statement
 rjmp 1f ; relative (forward) jump
 cbi \_SFR\_IO\_ADDR(PORTB),PB5 ; turn LED off
 **reti ; return from interrupt**1:sbi \_SFR\_IO\_ADDR(PORTB),PB5 ; turn LED on
 **reti ; return from interrupt**