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; PIC18F87J11 Configuration Bit Settings

; Assembly source line config statements

#include "p18f87j11.inc"

; CONFIG1L

  CONFIG  WDTEN = OFF          ; Watchdog Timer Enable bit (WDT disabled (control is placed on SWDTEN bit))

  CONFIG  STVREN = OFF         ; Stack Overflow/Underflow Reset Enable bit (Reset on stack overflow/underflow disabled)

  CONFIG  XINST = OFF          ; Extended Instruction Set Enable bit (Instruction set extension and Indexed Addressing mode disabled (Legacy mode))

; CONFIG1H

  CONFIG  CP0 = OFF            ; Code Protection bit (Program memory is not code-protected)

; CONFIG2L

  CONFIG  FOSC = HS            ; Oscillator Selection bits (HS oscillator)

  CONFIG  FCMEN = ON           ; Fail-Safe Clock Monitor Enable bit (Fail-Safe Clock Monitor enabled)

  CONFIG  IESO = ON            ; Two-Speed Start-up (Internal/External Oscillator Switchover) Control bit (Two-Speed Start-up enabled)

; CONFIG2H

  CONFIG  WDTPS = 32768        ; Watchdog Timer Postscaler Select bits (1:32768)

; CONFIG3L

  CONFIG  EASHFT = ON          ; External Address Bus Shift Enable bit (Address shifting enabled, address on external bus is offset to start at 000000h)

  CONFIG  MODE = MM            ; External Memory Bus Configuration bits (Microcontroller mode - External bus disabled)

  CONFIG  BW = 16              ; Data Bus Width Select bit (16-bit external bus mode)
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  CONFIG  WAIT = OFF            ; External Bus Wait Enable bit (Wait states on the external bus are disabled)

; CONFIG3H
  CONFIG  CCP2MX = DEFAULT      ; ECCP2 MUX bit (ECCP2/P2A is multiplexed with RC1)
  CONFIG  ECCPMX = DEFAULT      ; ECCPx MUX bit (ECCP1 outputs (P1B/P1C) are multiplexed with RE6 and RE5; ECCP3 outputs (P3B/P3C) are multiplexed with RE4 and RE3)
  CONFIG  PMPMX = DEFAULT       ; PMP Pin Multiplex bit (PMP port pins connected to EMB (PORTD and PORTE))
  CONFIG  MSSPMSK = MSK7        ; MSSP Address Masking Mode Select bit (7-Bit Address Masking mode enable)


pattern equ 0x25
counter equ 0x26
delay_count1 equ 0x27
delay_count2 equ 0x28


 org 0x0
 goto start
start:
;configuration of PORTD(LED) PORTB0(push button1), and PORTA5(push button2)
    bsf WDTCON,ADSHR ;Shared SFR
    setf ANCON0
    bcf WDTCON,ADSHR

    movlw 0x00
    movwf TRISD ;LEDs are connected to PORTD
    bsf TRISB, 0
    bsf TRISA, 5

start_loop_left:
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call shift_left
btfsc PORTB, 0 ;if SW1 is pressed, then RB0 is zero
bra start_loop_left

bra start_loop_right ;sw1 is pressed, pattern should change

start_loop_right:
        call shift_right
        btfsc PORTA, 5
        bra start_loop_right
        bra start_loop_left

        shift_left:
         movlw .8
         movwf counter
         movlw 1
         movwf pattern
          loop:
                rlncf pattern
                call delay
                decf counter,f
                bnz loop
        return

        shift_right:

           movlw D'8'
           movwf counter
           movlw B'10000000'
           movwf pattern
           loop2:
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                    rrncf pattern, f
                    call delay
                    decf counter,f
                    bnz loop2
            return
    delay:
            movlw .250
            movwf delay_count1
            silmukka:
              movwf delay_count2
              kierros:
                    nop
                    decf delay_count2
                    bnz kierros
            decf delay_count1
            bnz silmukka
    return
end
```