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;*****************************************
;**** lab2.asm  Running LEDS  ********
;*****************************************

        PROCESSOR PIC16F628
        #include <P16F628.INC>
        __CONFIG    _CP_OFF & _MCLRE_OFF & _HS_OSC & _LVP_OFF & _WDT_OFF

;****** Define general purpose registers for temporary variables
        cblock  0x20
            temp
            count
            count0
            count1
            count2
        endc
;***********************************************************
        ORG 0x00        ; Reset Vector
        goto    Mymain      ; vector to main program

Mymain:                 ; Main program begins here

        call    Init

        clrf    PORTB
        bsf PORTB,0
        clrf    temp
        bsf temp,0

Inf_Loop:
        movlw   .7      ; Setting the loop counter 'count'
        movwf   count


LeftLoop:               ; Rotate LED pattern to the left
        rlf temp,f
        ;movf   temp,w
        comf    temp,w  ; complement temp ดับ 1 วิ่ง ที่เหลือติด
        movwf   PORTB
        movlw   .100
        call    DelayMS
        decfsz  count,f     ; repeat the loop 7 times
        goto    LeftLoop

        movlw   .7      ; Setting the loop counter 'count'
        movwf   count
RightLoop:              ; Rotate LED pattern to the right
        rrf temp,f
        ;movf   temp,w
        comf    temp,w  ; complement temp ดับ 1 วิ่ง ที่เหลือติด
        movwf   PORTB
        movlw   .100
        call    DelayMS
        decfsz  count,f     ; repeat the loop 7 times
        goto    RightLoop

        goto    Inf_Loop    ; Go back and repeat this loop

;******************* Subroutines ****************************

;=========================================================
;* Initialization subroutine
;=========================================================
Init:
        movlw   .7
        banksel CMCON
        movwf   CMCON       ; Disable analog comparator
        banksel TRISB
```

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69          movlw   0x00
70          movwf   TRISB       ; Set PORTB as an output port
71          banksel PORTB
72          return
73
74  ;=======================================================
75  ;* Delay 2 Routine - Decrement delay loop in Milisecond*
76  ;* 1 instruction cycle is 1 micro-second
77  ;* at 4 Mhz X'tal frequency, 1MS = 1000 uS = 100x10
78  ;* where 100 iterations for inner loops, 10 iterations for
79  ;* outter loops
80  ;****************************************
81  DelayMS:
82          movwf   count2
83          incf    count2,f
84          decfsz  count2,f
85          goto    $+2
86          goto    $+3
87          call    Delay1MS
88          goto    $-4
89          return
90
91  Delay1MS:
92          movlw   .50         ; 1 cyc
93          movwf   count1      ; 1 cyc
94  outterloop:
95          movlw   .5          ; 1 cyc * count1
96          nop                 ; 1 cyc * count1
97          movwf   count0      ; 1 cyc * count1
98  innerloop:
99          decfsz  count0,F    ; 1 cyc * count1 * count0
100         goto    innerloop   ; 2 cyc * count1 * count0
101         decfsz  count1,F    ; 1 cyc * count1
102         goto    outterloop  ; 2 cyc * count1
103         return              ; 1 cyc
104         ; total = 3 + (6+3.count0).count1
105         ; count0 = 5 , count1 = 50, total = 1053 cyc ??
106
107         END
```