```
;KYLESERVICETECH
;PIC 16F677 LED FLASHER PROGRAM STARTED 11-18-2011
;RECONFIGURED INPUT/OUTPUTS FOR WATTFLYER.COM

;PROGRAM STEPS
;1.   TEST FOR SIGNAL LESS THAN 1.5 MS
;2.   TURN OFF ALL LED'S
;3    LED ABOVE 1.5 MS
;4    TURN ON LED
;5    TURN ON LED FLASHER 30% DUTY CYCLE
;ROUTINES IN PROGRAM
;1    CALL INIT         SETS UP ALL INITIAL PARAMETERS

;ICD_2 PROGRAMMING LEADS
;BROWN   - PIC16F677 PIN  4
;RED     - PIC16F677 PIN 20
;ORANGE  - PIC16F677 PIN 18
;YELLOW  - PIC16F677 PIN  1
;GREEN   - PIC16F677 PIN 19


;PICKIT PROGRAMMING LEADS  WIRES ARE BACKWARDS
;PICKIT 1 - BROWN   - PIC16F677 PIN  4
;PICKIT 2 - RED     - PIC16F677 PIN  1
;PICKIT 3 - ORANGE  - PIC16F677 PIN 20
;PICKIT 4 - YELLOW  - PIC16F677 PIN 19
;PICKIT 5 - GREEN   - PIC16F677 PIN 18
;PICKIT 6 - BLU     - PIC16F677 PIN  3

#include <p16F677.inc>
;PORTC,0 = IS INPUT
;PORTC,1 = IS OUTPUT
;PORTC,2 = IS OUTPUT
#DEFINE     LEDOUT      PORTC,2           ;DEFINE PIC/LCD DATA PORT
#DEFINE     LED_FLASH   PORTC,1
#DEFINE     SERVOIN     PORTC,0

      CBLOCK      0X40
      COUNTER
      DELAY1
      DELAY2
      DELAY3
      ENDC

      ORG   0
      GOTO  START
      ORG 30

START CALL  INITIATE

;TEST FOR SERVO=1  CYCLE THREE TIMES
MAIN_LOOP
LOOPA BTFSS SERVOIN                 ;SKIP IF ZERO C
      GOTO  LOOPA

LOOPB BTFSC SERVOIN                 ;SKIP IF ONE  S
      GOTO  LOOPB

LOOPC BTFSS       SERVOIN                 ;SKIP IF ZERO  C
      GOTO  LOOPC

LOOPD BTFSC SERVOIN                 ;SKIP IF ONE  S
      GOTO  LOOPD
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;PORT IS NOW A ONE, TIME IT AGAINST 1.5 MILLISECONDS
      CLRF  COUNTER                 ;ZERO IT OUT BEFORE ROUTINE
LOOPE BTFSC SERVOIN                 ;EXIT IF ZERO S
      GOTO  LED_PGM
      NOP                     ;TWEAK TIMING
      NOP
      NOP
      NOP
      INCF  COUNTER                 ;INCREMENT COUNTER
      BZ    LED_ON                  ;SERVO SIGNAL RAN OVER, TURN ON
      GOTO  LOOPE             ;STILL ON, LOOP AGAIN

LED_PGM     MOVLW 0X90              ;SET FOR 1.5 MS TIME
      SUBWF COUNTER,0               ;TEST IT
      BC    LED_ON                  ;LOOP AGAIN
      BCF   LEDOUT                  ;TURN OFF LEDS
      BCF   LED_FLASH
      GOTO  MAIN_LOOP

LED_ON      BSF   LEDOUT                  ;TURN ON BOTH LEDS
      BSF   LED_FLASH
      GOTO  MAIN_LOOP

DELAY_ON    MOVLW 0X90              ;TYPICAL DELAY ROUTINES
      MOVWF DELAY2
DLY_ON      DECF  DELAY1,1
      BNZ   DLY_ON
      DECF  DELAY2,1
      BNZ   DLY_ON
      RETURN

DELAY_OFF   MOVLW 0X03
      MOVWF DELAY3
      CLRF  DELAY1
      CLRF  DELAY2
DLY_OFF     DECF  DELAY1,1
      BNZ   DLY_OFF
      DECF  DELAY2,1
      BNZ   DLY_OFF
      DECF  DELAY3,1
      BNZ   DLY_OFF
      RETURN

;INIT INTERRUPT
INITIATE    BCF   STATUS,RP0              ;SET UP PORT C PER MANUAL
      BCF   STATUS,RP1
      CLRF  PORTC
      BSF   STATUS,RP1
      CLRF  ANSEL
      BSF   STATUS,RP0
      BCF   STATUS,RP1
      MOVLW B'00000001'             ;PORTC,3 IS SERVO INPUT
      MOVWF TRISC
      CLRF  TRISB
      CLRF  TRISA
      BCF   STATUS,RP0
      BCF   STATUS,RP1
      RETURN
      END
```