; PIC16F877A Configuration Bit Settings

; Assembly source line config statements

#include "p16f877a.inc"

; CONFIG

; \_\_config 0x3F3A

\_\_CONFIG \_FOSC\_HS & \_WDTE\_OFF & \_PWRTE\_OFF & \_BOREN\_OFF & \_LVP\_OFF & \_CPD\_OFF & \_WRT\_OFF & \_CP\_OFF

include "p16f877A.inc"

CBLOCK 0x20

pb1Last

pb1Curr

pb2Last

pb2Curr

pb3Last

pb3Curr

pb4Last

pb4Curr

pb5Last

pb5Curr

pb6Last

pb6Curr

pb7Last

pb7Curr

pb8Last

pb8Curr

d1

d2

d3

d4

d5

d6

d7

d8

d9

d10

pass

target

ctr

endc

org 0x000

goto Start

org 0x004

Interrupt

retfie

Start

bsf STATUS, RP0 ; Bank 1

bcf STATUS, RP1

movlw b'11111111'

movwf TRISB

movlw b'00000000'

movwf TRISC

movlw b'00000000'

movwf TRISD

bcf STATUS, RP0 ; Bank 0

bcf STATUS, RP1

clrf PORTB

clrf PORTC

clrf PORTD

movlw B'0'

movwf pb1Last

movlw B'0'

movwf pb1Curr

movlw B'0'

movwf pb2Last

movlw B'0'

movwf pb2Curr

movlw B'0'

movwf pb3Last

movlw B'0'

movwf pb3Curr

movlw B'0'

movwf pb4Last

movlw B'0'

movwf pb4Curr

movlw B'0'

movwf pb5Last

movlw B'0'

movwf pb5Curr

movlw B'0'

movwf pb6Last

movlw B'0'

movwf pb6Curr

movlw B'0'

movwf pb7Last

movlw B'0'

movwf pb7Curr

movlw B'0'

movwf pb8Last

movlw B'0'

movwf pb8Curr

Main

;movlw b'11111111'

;movwf PORTC

CheckMain

movlw B'4'

andwf ctr

bsf STATUS, RP0

bcf STATUS, RP1

btfss WREG

goto ContinueChecking

ContinueChecking

bcf STATUS, RP0

bcf STATUS, RP

PB1Check

btfss PORTB,0

goto PB1Off

PB1On

movlw B'00000001'

movwf PORTC

movlw D'1'

addwf pass

call Delay1s

incf ctr

goto PB2Check

PB1Off

movlw B'00000000'

movwf PORTC

goto PB2Check

PB2Check

btfss PORTB,1

goto PB2Off

PB2On

movlw B'00000010'

movwf PORTC

movlw D'2'

addwf pass

incf ctr

call Delay1s

goto PB3Check

PB2Off

movlw B'00000000'

movwf PORTC

goto PB3Check

PB3Check

btfss PORTB,2

goto PB3Off

PB3On

movlw B'00000100'

movwf PORTC

movlw D'3'

addwf pass

incf ctr

call Delay1s

goto PB4Check

PB3Off

movlw B'00000000'

movwf PORTC

goto PB4Check

PB4Check

btfss PORTB,3

goto PB4Off

PB4On

movlw B'00001000'

movwf PORTC

movlw D'4'

addwf pass

incf ctr

call Delay1s

goto PB5Check

PB4Off

movlw B'00000000'

movwf PORTC

goto PB5Check

PB5Check

btfss PORTB,4

goto PB5Off

PB5On

movlw B'00000001'

movwf PORTC

movlw D'5'

addwf pass

incf ctr

call Delay1s

goto PB6Check

PB5Off

movlw B'00000000'

movwf PORTC

goto PB6Check

PB6Check

btfss PORTB,5

goto PB6Off

PB6On

movlw B'00000010'

movwf PORTC

movlw D'6'

addwf pass

incf ctr

call Delay1s

goto PB7Check

PB6Off

movlw B'00000000'

movwf PORTC

goto PB7Check

PB7Check

btfss PORTB,6

goto PB7Off

PB7On

movlw B'00000100'

movwf PORTC

movlw D'7'

addwf pass

incf ctr

call Delay1s

goto PB8Check

PB7Off

movlw B'00000000'

movwf PORTC

goto PB8Check

PB8Check

btfss PORTB,7

goto PB8Off

PB8On

movlw B'00001000'

movwf PORTC

movlw D'8'

addwf pass

incf ctr

call Delay1s

goto DoneChecking

PB8Off

movlw B'00000000'

movwf PORTC

goto DoneChecking

Delay1s

movlw 0x44 ; We put '44' to W (accumulator). '44' data is prepared

movwf dc6 ; It will write the contents of the W register (0100 0100) into dc6 (memory address)

movlw 0x23 ; We put '32' to W (accumulator). '32' data is prepared

movwf dc7 ; It will write the contents of the W register (0011 0010) into dc7 (memory address)

movlw 0x06 ; We put '60' to W (accumulator). '60' data is prepared

movwf dc8 ; It will write the contents of the W register (0110 0000) into dc8 (memory address)

dLx

decfsz dc6,f ; Since we use CBLOCK, we can get reduce the number of bits until the dc6 = f

goto dLx ; Since we use CBLOCK, we can call dLx with the value of dc6

decfsz dc7,f ; Since we use CBLOCK, we can get reduce the number of bits until the dc7 = f

goto dLx ; Since we use CBLOCK, we can call dLx with the value of dc7

decfsz dc8,f ; Since we use CBLOCK, we can get reduce the number of bits until the dc8 = f

goto dLx ; Since we use CBLOCK, we can call dLx with the value of dc8

return

DoneChecking

goto Main

end