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;The delay cycles (long, medium and short) are copyright Charly Bechara - Demystifying
;The Microchip PIC Microcontroller For Engineering Students 2014
;Lampeggiatore per display 7-segmenti anodo comune su PORTD
;Lampeggia anche un led su RB0
;La frequenza di clock è variabile (oscillatore interno/esterno)
;Oscillatore interno: ultimi 3 bit config1 a 100. Ultimo bit OSCCON a 1.
;Secondo, terzo e quarto bit 111 (8 MHz), 110 (4 MHz), 100 (1 MHz).
;Oscillatore esterno ultimi 3 bit config1:  010 (HS), 001 (XT).

                List    P=PIC16F887
                Include "p16F887.inc"
                ERRORLEVEL -302
                __config 0x2007, 0x20E2     ;0010  0000 1110  0010
                __config 0x2008, 0x3EFF     ;0011  1110 1111  1111

DELAY_holdCount1        EQU     0x20
DELAY_holdCount2        EQU     0x21
DELAY_holdCount3        EQU     0x22
DELAY_count1            EQU     0x23
DELAY_count2            EQU     0x24
DELAY_count3            EQU     0x25
                        ORG     0x00

                BSF             STATUS, RP0
                MOVLW           B'01000000'
                MOVWF           OSCCON
                MOVLW           0
                MOVWF           TRISD
                MOVLW           B'11111110'
                MOVWF           TRISB
                BCF             STATUS,RP0

                MOVLW   d'6'
                MOVWF   DELAY_holdCount1
                MOVLW   d'216'
                MOVWF   DELAY_holdCount2
                MOVLW   d'255'
                MOVWF   DELAY_holdCount3

MAINLOOP        MOVLW           0x00
                MOVWF           PORTD
                BSF             PORTB, 0
                CALL            DELAY_Long
                MOVLW           0xFF
                MOVWF           PORTD
                BCF             PORTB, 0
                CALL            DELAY_Long
                GOTO            MAINLOOP
```

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;*******************************************************************************
DELAY_Long      MOVF    DELAY_holdCount1, W
                MOVWF   DELAY_count1
LOOP_LONG2      MOVF    DELAY_holdCount2, W
                MOVWF   DELAY_count2
LOOP_LONG3      MOVF    DELAY_holdCount3, W
                MOVWF   DELAY_count3

RIPETI          DECFSZ  DELAY_count3, F
                GOTO    RIPETI
                MOVF    DELAY_holdCount3, W
                MOVWF   DELAY_count3
                DECFSZ  DELAY_count2, F
                GOTO    RIPETI

                MOVF    DELAY_holdCount3, W
                MOVWF   DELAY_count3
                MOVF    DELAY_holdCount2, W
                MOVWF   DELAY_count2
                DECFSZ  DELAY_count1, F
                GOTO    RIPETI
                RETURN
;La formula è T = 3*DELAY_count1*DELAY_count2*DELAY_count3 +

5*DELAY_count1+DELAY_count2 + DELAY_count1 + 2
;*******************************************************************************
DELAY_Medium    MOVF    DELAY_holdCount1, W
                MOVWF   DELAY_count1
LOOP_MEDIUM     MOVF    DELAY_holdCount2, W
                MOVWF   DELAY_count2
                DECFSZ  DELAY_count2, F
                GOTO    $-1
                DECFSZ  DELAY_count1, F
                GOTO    LOOP_MEDIUM
                RETURN
;La formula è T = 3*DELAY_count1*DELAY_count2 + 5*DELAY_count1
;*******************************************************************************
DELAY_Short     MOVF    DELAY_holdCount1, W
                MOVWF   DELAY_count1
                DECFSZ  DELAY_count1, F
                GOTO    $-1
                RETURN
;La formula è T = 3*DELAY_count1 + 3
;*******************************************************************

                END
```