

11_CW_CCW_ANSELH_887

;The delay cycles (long, medium and short) are copyright Charly Bechara - Demystifying
;The Microchip PIC Microcontroller For Engineering Students 2014
;Un motore DC ruota CW e CCW. Ad ogni rotazione si
;accende un led rosso o verde

```
List      P=PIC16F887
Include   "p16F887.inc"
ERRORLEVEL -302
__config 0x2007, 0x20E4 ;0010 0000 1110 0100
__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
GOTO BEGIN
```

```
BEGIN      BSF      STATUS,RP0
            MOVLW 0X61
            MOVWF OSCCON
            MOVLW 0
            MOVWF TRISC
            MOVWF TRISB
            BANKSEL ANSELH
            CLRF ANSELH
            BCF STATUS,RP0
            BCF STATUS,RP1
            MOVLW d'6'
            MOVWF DELAY_holdCount1
            MOVLW d'216'
            MOVWF DELAY_holdCount2
            MOVLW d'255'
            MOVWF DELAY_holdCount3
```

```
MAINLOOP   BSF      PORTB, 1
            BCF      PORTB, 2
            BSF      PORTC, 1
            BCF      PORTC, 2
            CALL     DELAY_Long
            CALL     DELAY_Long
            CALL     DELAY_Long

            BCF      PORTB, 1
            BCF      PORTB, 2
            BCF      PORTC, 1
            BCF      PORTC, 2
            CALL     DELAY_Long

            BCF      PORTB, 1
```

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```
BSF    PORTB, 2
BCF    PORTC, 1
BSF    PORTC, 2
CALL   DELAY_Long
CALL   DELAY_Long
CALL   DELAY_Long
```

```
BCF    PORTB, 1
BCF    PORTB, 2
BCF    PORTC, 1
BCF    PORTC, 2
CALL   DELAY_Long
```

```
GOTO   MAINLOOP
```

```
.*****
```

```
,
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 $T = 3 \cdot \text{DELAY_count1} \cdot \text{DELAY_count2} \cdot \text{DELAY_count3} + 5 \cdot \text{DELAY_count1} + \text{DELAY_count2} + \text{DELAY_count1}$

+ 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 $T = 3 \cdot \text{DELAY_count1} \cdot \text{DELAY_count2} + 5 \cdot \text{DELAY_count1}$

```
.*****
```

```
,
DELAY_Short   MOVF    DELAY_holdCount1, W
```

```

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MOVWF  DELAY_count1
DECFSZ DELAY_count1, F
GOTO   $-1
RETURN
;La formula è  $T = 3 \cdot \text{DELAY\_count1} + 3$ 
;*****
;
END

```