```
    .title "EL308"
    .sbttl "Simple example on timer1 interrupt"
    .equ __24FJ256GB110, 1
    .include "p24FJ256GB110.inc"

    .global __reset          ;The label for the first line of code.
    .global __T1Interrupt    ;Declare Timer 1 ISR name global

.bss

.section .const,psv

.text                            ;Start of Code section
__reset:
    mov     #__SP_init, W15     ; Initalize the Stack Pointer
    mov     #__SPLIM_init, W0   ; Initialize the Stack Pointer Limit Register
    mov     W0, SPLIM
    nop                         ; Add NOP to follow SPLIM initialization

    call    init_LED
    call    init_timer

do_nothing:
    bra     do_nothing

; :::::::::::::::::
; ::: Functions :::
; :::::::::::::::::

init_timer:
    bclr    T1CON, #TON     ; turn timer1 OFF

    bset    T1CON, #TCKPS1
    bclr    T1CON, #TCKPS0  ; set prescaler to 64

    bclr    T1CON, #TCS     ; select internal clock

    mov     #0x0000, W0
    mov     W0, TMR1        ; clear TMR1 register
    mov     #15625, W0
    mov     W0, PR1         ; set timer1 period to 31250 -> f=2e6/64/31250=2 Hz

    bclr    IPC0, #14
    bclr    IPC0, #13
    bset    IPC0, #12       ; set timer1 priority to 001
    bclr    IFS0, #T1IF     ; clear timer1 interrupt status flag
    bset    IEC0, #T1IE     ; enable timer1 interrupts

    bset    T1CON, #TON     ; turn timer1 ON
    return

init_LED:
    bclr    TRISF, #0
    bclr    TRISF, #1
    bclr    TRISF, #2
    bclr    TRISF, #3       ; LED array
    return

; ::::::::::::::::::::::::::::::::::::::::
; ::: Timer 1 Interrupt Service Routine :::
; ::::::::::::::::::::::::::::::::::::::::

__T1Interrupt:
    push.s                      ; push shadow registers

    btg     PORTF, #0

    bclr    IFS0, #T1IF         ; Clear the Timer1 Interrupt flag Status

    pop.s                       ; pop shadow registers
    retfie                      ; Return from Interrupt Service routine

.end                            ; End of program code in this file
```