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;      DIGITAL AUDIO ALARM SUBROUTINE FOR UNIVERSAL ALARM SYSTEM
;
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;=====
;      org      7              ;start origin of files at register 7

freq    ds      1              ;define freq register
time    ds      1              ;define time register
hold    ds      1              ;define hold register

audio   =      rb.7           ;define output pin as Port 'B' # 7
;-----
;device data and reset vector

        device pic16c54,xt_osc,wdt_off,protect_off      ; Fosc=4 MHz
;=====
start                                ;beginning of program

        mov     !rb,#0          ;make Port 'B' all outputs
        clr     freq            ;clear freq register
:loop   inc     freq            ;increment freq register

        setb    audio          ;turn on audio output bit
        call   msec            ;call msec subroutine
        mov     hold,freq       ;move contents of freq into hold register
:wait1  djnz   hold,:wait1     ;loop until hold register=0

        clrb   audio          ;turn off audio output bit
        call   msec            ;call msec subroutine
        mov     hold,freq       ;move contents of freq into hold register
:wait2  djnz   hold,:wait2     ;loop until hold register=0

        cjne   freq,#200,:loop ;jump to :loop if freq is not equal to 200
        goto   start           ;go back to start
;=====
msec                                ;define 1 msec subroutine

:loop   mov     time,#248       ;load # 248 into time register
        nop                    ;waste 1 usec. of time!!
        djnz   time,:loop      ;decrease time and loop if not = 0
        nop                    ;waste another 1 usec. of time!!
        ret                    ;return from subroutine
;=====
;      END OF PROGRAM!

```

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