Assignment-8

```c
#include <xc.h>

#define _XTAL_FREQ 20000000  // 20MHz Crystal

void __interrupt() Timer0_ISR(void) {
    if (INTCONbits.TMR0IF) {  // Check Timer0 overflow flag
        INTCONbits.TMR0IF = 0; // Clear interrupt flag
        TMR0L = 6;  // Reload Timer0 for 1ms delay

//      PORTB ^= 0x01;  // Toggle LED on RB0

        // Toggle Buzzer (RC0) to create sound when delay is active
        LATAbits.LATA5= ~ LATAbits.LATA5;

        // Toggle RC0 (Buzzer pin)
    }
}

void main() {

    TRISAbits.TRISA5 = 0;  // Set PORTC as output (Buzzer)

    // Initialize LED off
    PORTA = 0x00;  // Initialize Buzzer off
// Initialize Buzzer off

    // Timer0 Configuration
    T0CON = 0b11000111;  // Enable Timer0, 8-bit mode, Prescaler 1:256
    TMR0L = 6;  // Load Timer0 with initial value

    // Enable Interrupts
    INTCONbits.TMR0IE = 1;  // Enable Timer0 interrupt
    INTCONbits.GIE = 1;     // Enable Global Interrupt

    while (1) {
        // Main loop (LED and buzzer controlled by Timer0 ISR)
    }
}
```

MPLAB X IDE v6.20 - Assignmnet : default

File Edit View Navigate Source Refactor Production Debug Team Tools Window Help

```
            // Toggle RC0 (Buzzer pin)
        }
    }
}

void main() {

    TRISAbits.TRISA5 = 0;  // Set PORTC as output (Buzzer)

    // Initialize LED off
    PORTA = 0x00;  // Initialize Buzzer off
// Initialize Buzzer off

    // Timer0 Configuration
    T0CON = 0b11000111;  // Enable Timer0, 8-bit mode, Prescaler 1:256
    TMR0L = 6;  // Load Timer0 with initial value

    // Enable Interrupts
    INTCONbits.TMR0IE = 1;  // Enable Timer0 interrupt
    INTCONbits.GIE = 1;     // Enable Global Interrupt

    while (1) {
        // Main loop (LED and buzzer controlled by Timer0 ISR)
    }
}
```

SFRs (top screenshot):

Address	Name	Hex	Decimal	Binary	Char
	TMR0_Internal	0x0006	6	00000000 00000110	'..'
	TMR0_Prescale	0x04	4	00000100	'.'
	TMR1_Internal	0x0000	0	00000000 00000000	'..'
	TMR1_Prescale	0x00	0	00000000	'.'
	TMR2_Prescale	0x00	0	00000000	'.'
	TMR3_Internal	0x0000	0	00000000 00000000	'..'
	TMR3_Prescale	0x00	0	00000000	'.'
F62	SPPDATA	0x00	0	00000000	'.'
F63	SPPCFG	0x00	0	00000000	'.'
F64	SPPEPS	0x00	0	00000000	'.'
F65	SPPCON	0x00	0	00000000	'.'
F66	UFRM	0x0000	0	00000000 00000000	'..'
F66	UFRML	0x00	0	00000000	'.'
F67	UFRMH	0x00	0	00000000	'.'
F68	UIR	0x00	0	00000000	'.'
F69	UIE	0x00	0	00000000	'.'
F6A	UEIR	0x00	0	00000000	'.'
F6B	UEIE	0x00	0	00000000	'.'
F6C	USTAT	0x00	0	00000000	'.'
F6D	UCON	0x00	0	00000000	'.'
F6E	UADDR	0x00	0	00000000	'.'
F6F	UCFG	0x00	0	00000000	'.'
F70	UEP0	0x00	0	00000000	'.'
F71	UEP1	0x00	0	00000000	'.'
F72	UEP2	0x00	0	00000000	'.'
F73	UEP3	0x00	0	00000000	'.'
F74	UEP4	0x00	0	00000000	'.'
F75	UEP5	0x00	0	00000000	'.'
F76	UEP6	0x00	0	00000000	'.'
F77	UEP7	0x00	0	00000000	'.'
F78	UEP8	0x00	0	00000000	'.'
F79	UEP9	0x00	0	00000000	'.'
F7A	UEP10	0x00	0	00000000	'.'
F7B	UEP11	0x00	0	00000000	'.'

SFRs (bottom screenshot):

Address	Name	Hex	Decimal	Binary	Char
F7C	UEP12	0x00	0	00000000	'.'
F7D	UEP13	0x00	0	00000000	'.'
F7E	UEP14	0x00	0	00000000	'.'
F7F	UEP15	0x00	0	00000000	'.'
F80	PORTA	0x00	0	00000000	'.'
F81	PORTB	0x00	0	00000000	'.'
F82	PORTC	0x00	0	00000000	'.'
F83	PORTD	0x00	0	00000000	'.'
F84	PORTE	0x00	0	00000000	'.'
F89	LATA	0x00	0	00000000	'.'
F8A	LATB	0x00	0	00000000	'.'
F8B	LATC	0x00	0	00000000	'.'
F8C	LATD	0x00	0	00000000	'.'
F8D	LATE	0x00	0	00000000	'.'
F92	TRISA	0x5F	95	01011111	'_'
F93	TRISB	0xFF	255	11111111	'ÿ'
F94	TRISC	0xC7	199	11000111	'Ç'
F95	TRISD	0xFF	255	11111111	'ÿ'
F96	TRISE	0x07	7	00000111	'.'
F9B	OSCTUNE	0x00	0	00000000	'.'
F9D	PIE1	0x00	0	00000000	'.'
F9E	PIR1	0x00	0	00000000	'.'
F9F	IPR1	0xFF	255	11111111	'ÿ'
FA0	PIE2	0x00	0	00000000	'.'
FA1	PIR2	0x00	0	00000000	'.'
FA2	IPR2	0xFF	255	11111111	'ÿ'
FA6	EECON1	0x00	0	00000000	'.'
FA7	EECON2	0x00	0	00000000	'.'
FA8	EEDATA	0x00	0	00000000	'.'
FA9	EEADR	0x00	0	00000000	'.'
FAB	RCSTA	0x00	0	00000000	'.'
FAC	TXSTA	0x02	2	00000010	'.'
FAD	TXREG	0x00	0	00000000	'.'
FAE	RCREG	0x00	0	00000000	'.'