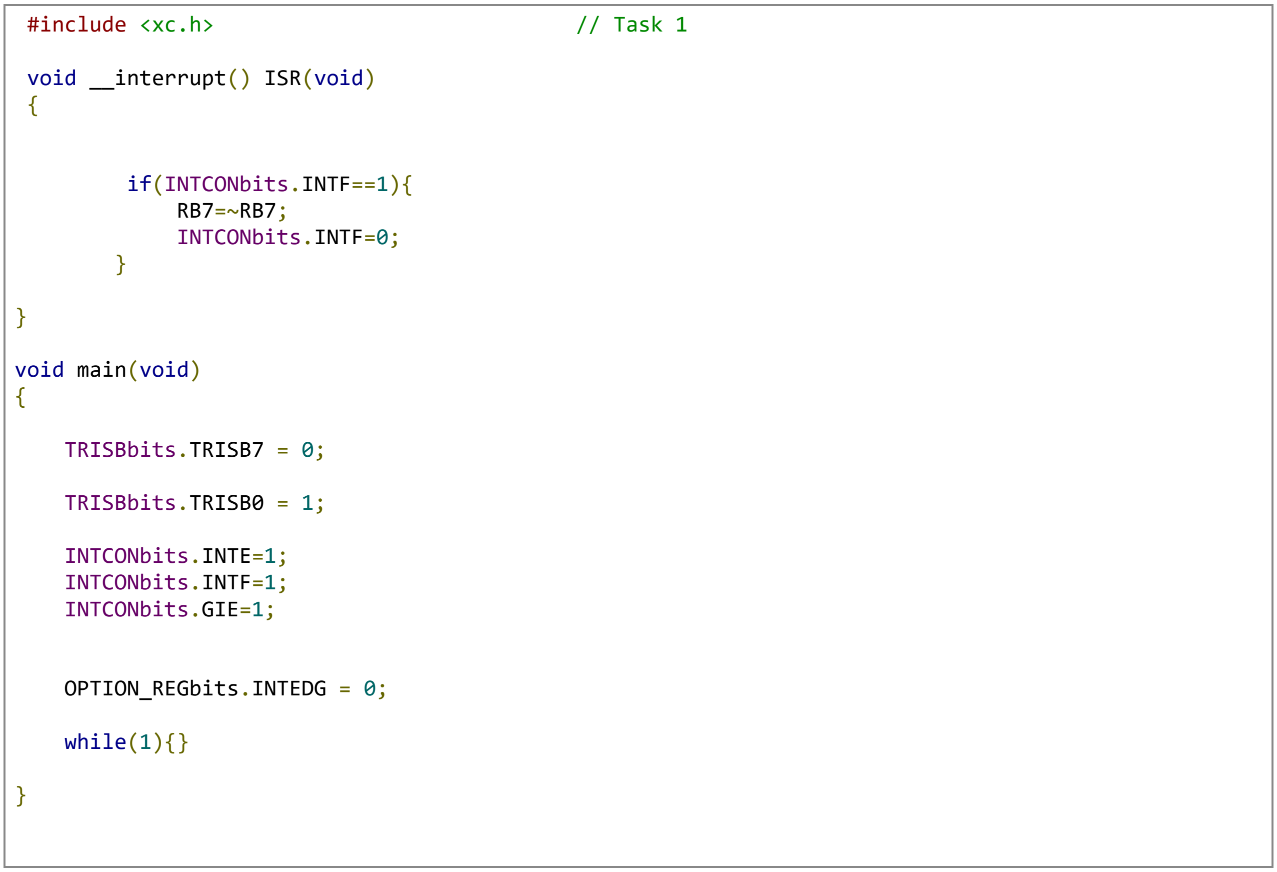
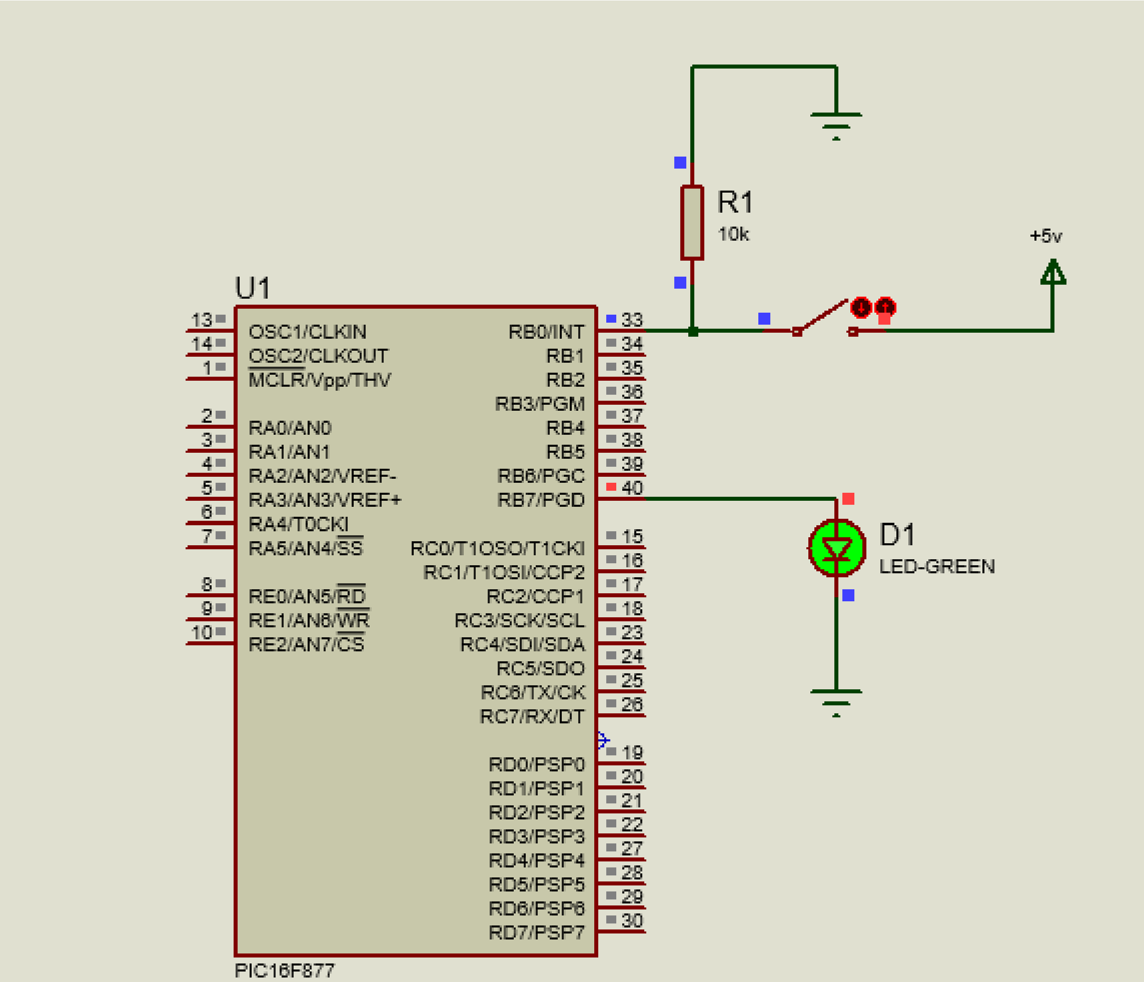


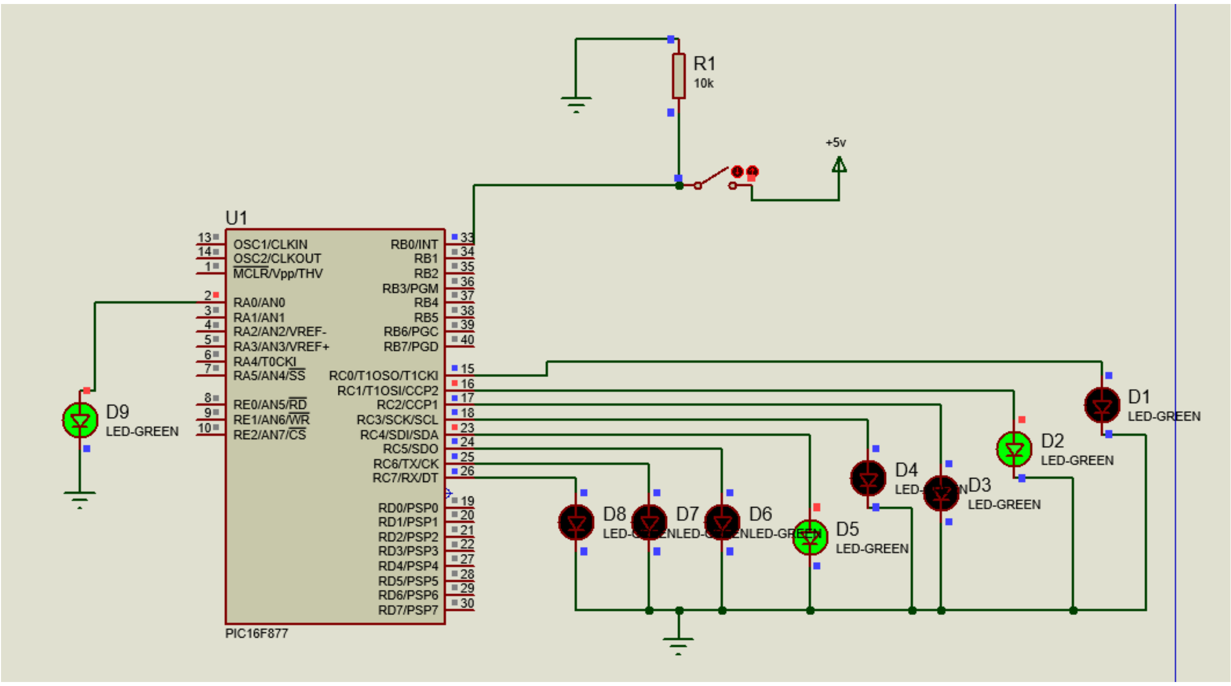
```
 #include <xc.h>                                 // Task 1

 void __interrupt() ISR(void)
 {


         if(INTCONbits.INTF==1){
             RB7=~RB7;
             INTCONbits.INTF=0;
        }

}

void main(void)
{

    TRISBbits.TRISB7 = 0;

    TRISBbits.TRISB0 = 1;

    INTCONbits.INTE=1;
    INTCONbits.INTF=1;
    INTCONbits.GIE=1;


    OPTION_REGbits.INTEDG = 0;

    while(1){}

}
```



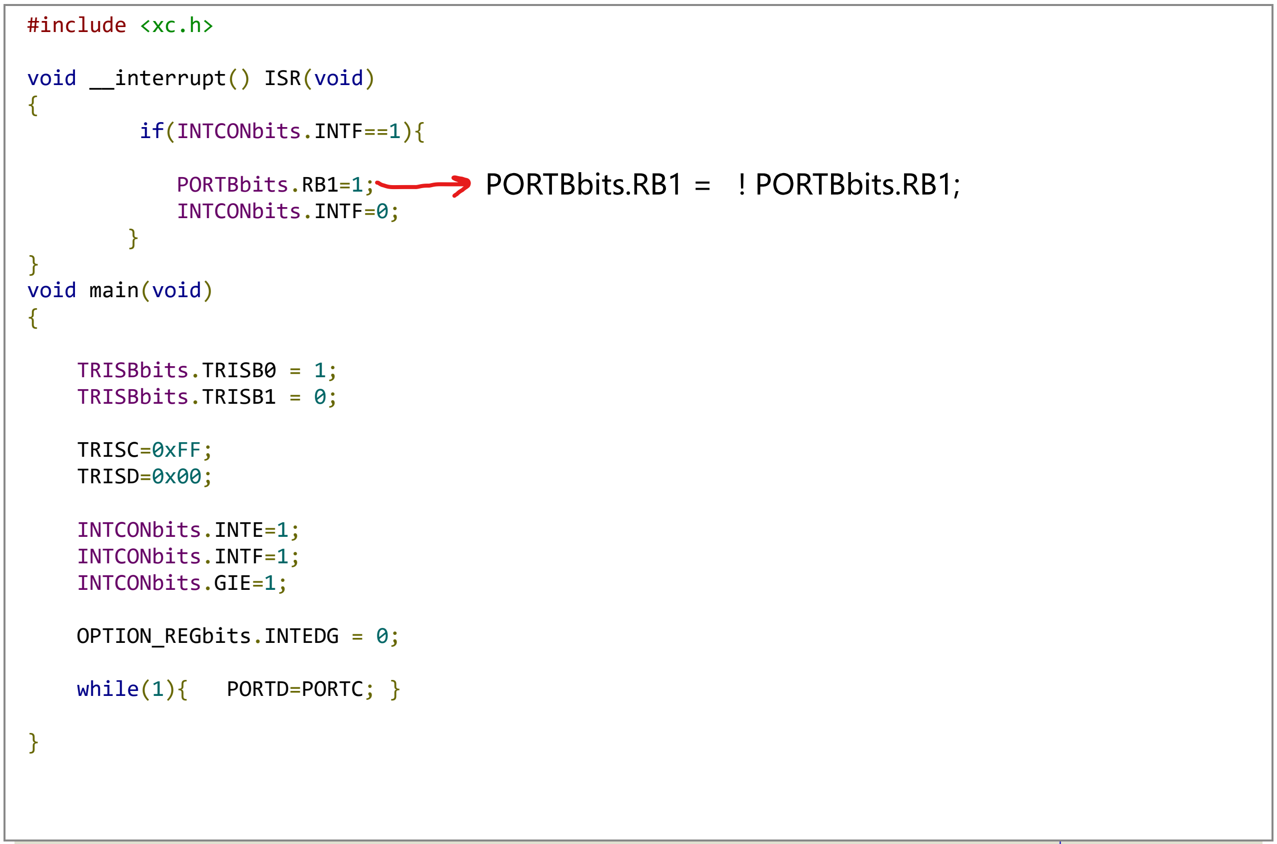
Task 2

```
PORTBbits.RB1 =  ! PORTBbits.RB1;   // Correct toggle using logical NOT

! (logical NOT) inverts the truth value:

If RB1 = 0 → ! RB1 = 1

If RB1 = 1 → ! RB1 = 0
```

```
#include <xc.h>

void __interrupt() ISR(void)
{
     if(INTCONbits.INTF==1){
             RA0=~RA0;
             INTCONbits.INTF=0;
       }
}

void main(void)
{

   TRISAbits.TRISA0 = 0;
   TRISBbits.TRISB0 = 1;

   TRISC=0x00;

   INTCONbits.INTE=1;
   INTCONbits.INTF=1;
   INTCONbits.GIE=1;

   OPTION_REGbits.INTEDG = 0;

   while(1){  PORTC=0x12; }

}
```

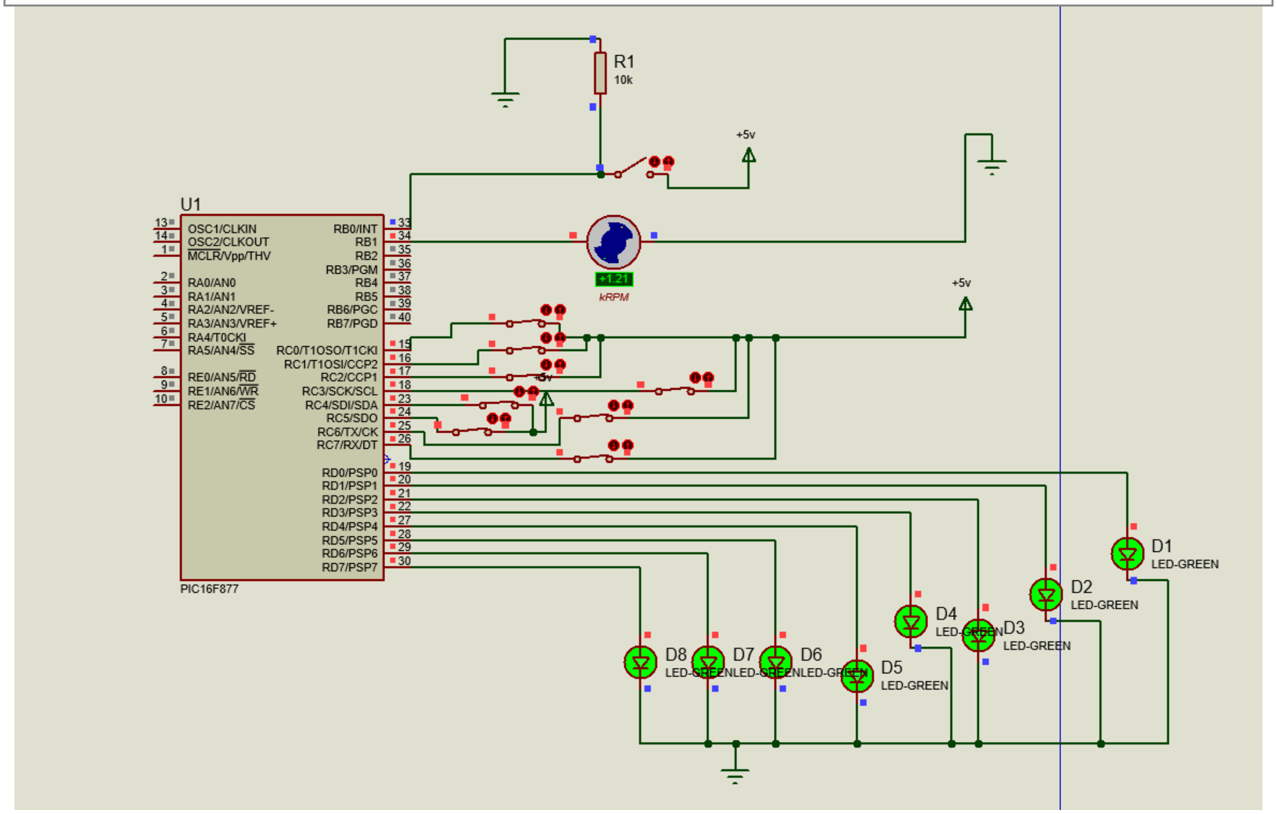


Task 3



```
#include <xc.h>

void __interrupt() ISR(void)
{
         if(INTCONbits.INTF==1){

            PORTBbits.RB1=1;
            INTCONbits.INTF=0;
        }
}
void main(void)
{

    TRISBbits.TRISB0 = 1;
    TRISBbits.TRISB1 = 0;

    TRISC=0xFF;
    TRISD=0x00;

    INTCONbits.INTE=1;
    INTCONbits.INTF=1;
    INTCONbits.GIE=1;

    OPTION_REGbits.INTEDG = 0;

    while(1){    PORTD=PORTC; }

}
```

PORTBbits.RB1 = ! PORTBbits.RB1;


R1
10k
+5v
U1
13 OSC1/CLKIN
14 OSC2/CLKOUT
1 MCLR/Vpp/THV
2 RA0/AN0
3 RA1/AN1
4 RA2/AN2/VREF-
5 RA3/AN3/VREF+
6 RA4/T0CKI
7 RA5/AN4/SS
8 RE0/AN5/RD
9 RE1/AN6/WR
10 RE2/AN7/CS
RB0/INT 33
RB1 34
RB2 35
RB3/PGM 36
RB4 37
RB5 38
RB6/PGC 39
RB7/PGD 40
RC0/T1OSO/T1CKI 15
RC1/T1OSI/CCP2 16
RC2/CCP1 17
RC3/SCK/SCL 18
RC4/SDI/SDA 23
RC5/SDO 24
RC6/TX/CK 25
RC7/RX/DT 26
RD0/PSP0 19
RD1/PSP1 20
RD2/PSP2 21
RD3/PSP3 22
RD4/PSP4 27
RD5/PSP5 28
RD6/PSP6 29
RD7/PSP7 30
PIC16F877
+1.21
kRPM
+5v
+5v
D1
LED-GREEN
D2
LED-GREEN
D3
LED-GREEN
D4
LED-GREEN
D5
LED-GREEN
D6
LED-GREEN
D7
LED-GREEN
D8
LED-GREEN