

LAMPIRAN

```
#include <mega8535.h>

#include <stdlib.h>

unsigned char detak=0,temp[3],detik=0;

bit a,b;

// Declare your global variables here

// Timer1 overflow interrupt service routine
interrupt [TIM1_OVF] void timer1_ovf_isr(void)
{
// Reinitialize Timer1 value
TCNT1H=0xBDC >> 8;
TCNT1L=0xBDC & 0xff;
// Place your code here
detik++;
}

void main(void)
{
```

```

// Input/Output Ports initialization

// Port A initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In
DDRA=(0<<DDA7) | (0<<DDA6) | (0<<DDA5) | (0<<DDA4) | (0<<DDA3) | (0<<DDA2) |
      (0<<DDA1) | (0<<DDA0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=T Bit2=T Bit1=T Bit0=T
PORTA=(0<<PORTA7) | (0<<PORTA6) | (0<<PORTA5) | (0<<PORTA4) | (0<<PORTA3) |
      (0<<PORTA2) | (0<<PORTA1) | (0<<PORTA0);

// Port B initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In
DDRB=(0<<DDB7) | (0<<DDB6) | (0<<DDB5) | (0<<DDB4) | (0<<DDB3) | (0<<DDB2) |
      (0<<DDB1) | (0<<DDB0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=T Bit2=T Bit1=T Bit0=T
PORTB=(1<<PORTB7) | (1<<PORTB6) | (1<<PORTB5) | (1<<PORTB4) | (1<<PORTB3) |
      (1<<PORTB2) | (1<<PORTB1) | (1<<PORTB0);

// Port C initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In
DDRC=(0<<DDC7) | (0<<DDC6) | (0<<DDC5) | (0<<DDC4) | (0<<DDC3) | (0<<DDC2) |
      (0<<DDC1) | (0<<DDC0);

// State: Bit7=T Bit6=T Bit5=T Bit4=T Bit3=T Bit2=T Bit1=T Bit0=T
PORTC=(0<<PORTC7) | (0<<PORTC6) | (0<<PORTC5) | (0<<PORTC4) | (0<<PORTC3) |
      (0<<PORTC2) | (0<<PORTC1) | (0<<PORTC0);

// Port D initialization

// Function: Bit7=In Bit6=In Bit5=In Bit4=In Bit3=In Bit2=In Bit1=In Bit0=In
DDRD=(0<<DDD7) | (0<<DDD6) | (0<<DDD5) | (0<<DDD4) | (0<<DDD3) | (0<<DDD2) |

```

```
TCCR1A=(0<<COM1A1) | (0<<COM1A0) | (0<<COM1B1) | (0<<COM1B0) | (0<<WGM11)
| (0<<WGM10);

TCCR1B=(0<<ICNC1) | (0<<ICES1) | (0<<WGM13) | (0<<WGM12) | (1<<CS12) |
(0<<CS11) | (0<<CS10);

TCNT1H=0x0B;

TCNT1L=0xDC;

ICR1H=0x00;

ICR1L=0x00;

OCR1AH=0x00;

OCR1AL=0x00;

OCR1BH=0x00;

OCR1BL=0x00;

// Timer/Counter 2 initialization
// Clock source: System Clock
// Clock value: Timer2 Stopped
// Mode: Normal top=0xFF
// OC2 output: Disconnected

ASSR=0<<AS2;

TCCR2=(0<<WGM20) | (0<<COM21) | (0<<COM20) | (0<<WGM21) | (0<<CS22) |
(0<<CS21) | (0<<CS20);

TCNT2=0x00;

OCR2=0x00;

// Timer(s)/Counter(s) Interrupt(s) initialization
```

```
lcd_init(16);  
  
// Global enable interrupts  
  
#asm("sei")  
  
a=0;  
  
b=0;  
  
lcd_clear();  
  
while (1)  
{  
    if(b==0)  
    {TIMSK=0x00;a=1;}  
  
    else if(b==1)  
    {TIMSK=0x04;a=0;}  
  
    if(PINB.7==0)  
    {b=1;}  
  
    else if(PINB.6==1&& a==0)  
    {while(PINB.6==1&& a==0)  
    { delay_ms(100);}  
    detak++;}  
  
    else if(detik==15)  
    {b=0;detak=detak*4;  
    if(detak<60)  
    lcd_gotoxy(0,0);  
    lcd_putsf("Timer:");  
    lcd_gotoxy(5,0);
```

```
lcd_putsf("Timer:");  
    lcd_gotoxy(5,0);  
    itoa(detik,temp);  
    lcd_gotoxy(5,0);  
    lcd_puts(temp);  
    lcd_gotoxy(0,1);  
    lcd_putsf("Detak:");  
    lcd_gotoxy(5,1);  
    itoa(detak,temp);  
    lcd_gotoxy(5,1);  
    lcd_puts(temp);  
    }  
} itoa(detik,temp);  
    lcd_gotoxy(5,0);  
    lcd_puts(temp);  
    lcd_gotoxy(0,1);  
    lcd_putsf("Detak:");  
    lcd_gotoxy(5,1);  
    itoa(detak,temp);  
    lcd_gotoxy(5,1);  
    lcd_puts(temp);  
    }  
}
```











