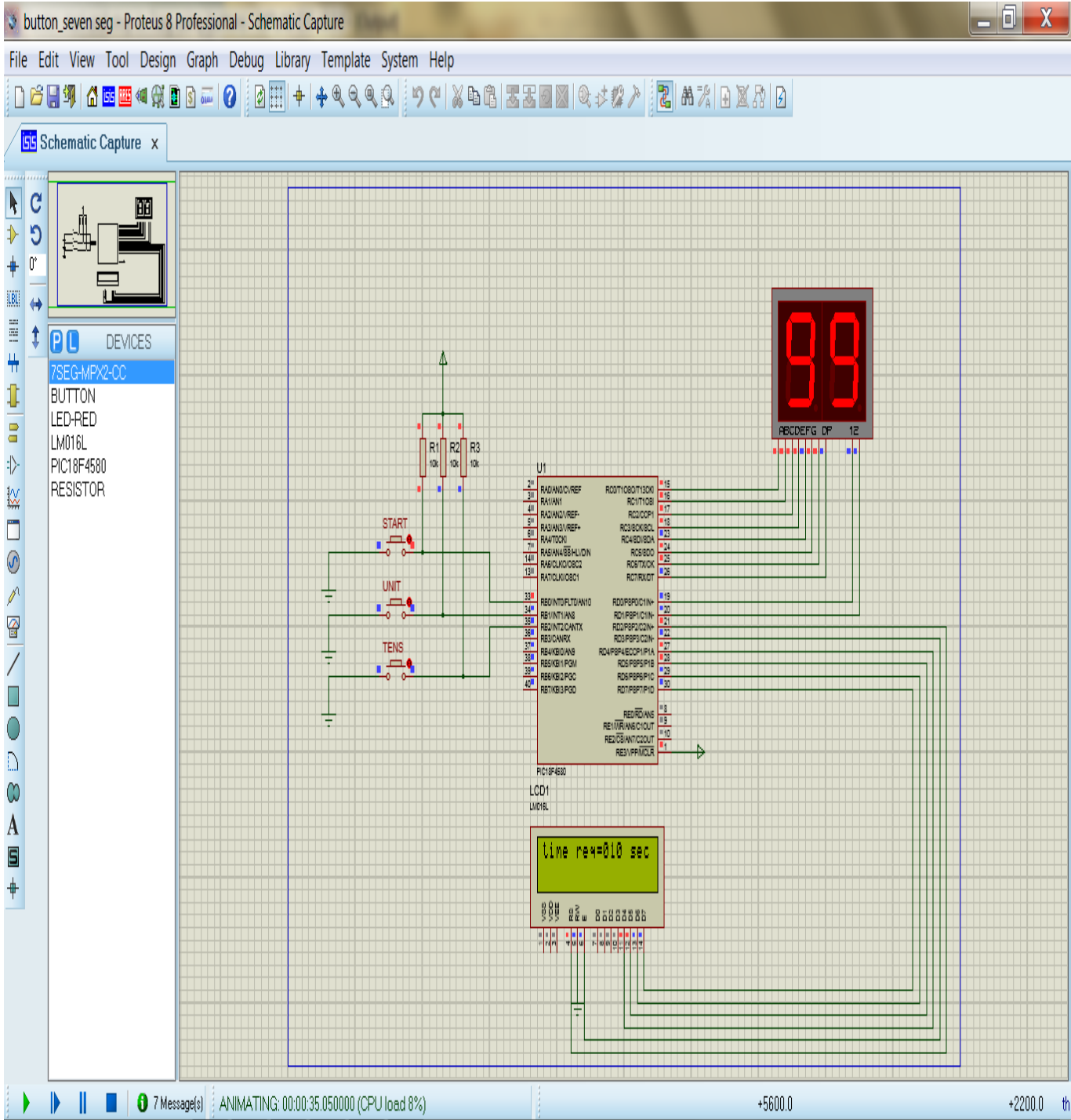


DIGITAL COUNTER USING PIC18F4580



```

#include<p18f4580.h>

#define start PORTBbits.RB0//start button

#define unit PORTBbits.RB1

#define tens PORTBbits.RB2

#define s1 PORTDbits.RD0//select line 1

#define s2 PORTDbits.RD1//select line 2

#define rs PORTDbits.RD2//rs register

#define en PORTDbits.RD3//lcd enable

void result(int);//to show the 3 sep var in order

void seven_seg(int,int);//*func.to display data
on 7seg with

i/p rx'd from user*/

char display(char);//7seg pattern gen.

void delay(void);//timer delay of 90ms using T0

void lcd_init(void);//lcd init in 4 bit

void lcd_cmd(char ch);//cmd register

void lcd_data(char ch);//data register

void msg(const rom char *);//display msgs on
lcd

char msb,lsb;//var for unit and 10's place data
store

int i=0,flag=0,count=0;

int time,p,q,status1,status2;

void result(int time)

{

int arr[3];

```

```

int i=0,a,result=0,c=0,rev=0,j=0,x=0;

a=time;

for(i=0;i<3;i++)

{

rev=a%10;

a/=10;

arr[i]=rev;

}

for(i=2;i>=0;i--)

{

lcd_data(arr[i]+0x30);

}

}

void seven_seg(int a,int b)

{

s1=0;

s2=0;

for(count=a;count<=b;count++)

{

msb=i/10;

PORTC=display(msb);

s2=1;

delay();

s2=0;

```

```

lsb=i%10;

PORTC=display(lsb);

s1=1;

delay();

s1=0;

i++;

flag++;

}

time=flag*0.1;// gives the total time req'd for
total count

lcd_cmd(0x80);

lcd_cmd(0x01);

msg("time req=");

lcd_cmd(0x89);

result(time);

lcd_cmd(0x8c);

msg(" sec");

}

void delay()

{

TMR0H=0xfe;//100 msec

TMR0L=0x76;

TOCONbits.TMR0ON=1;

while(INTCONbits.TMR0IF==0);

TOCONbits.TMR0ON=0;

INTCONbits.TMR0IF=0;

```

```

}

/*void delay()

{

int i,j;

for(i=0;i<50;i++)

for(j=0;j<50;j++);

}*/

char display(char digit)

{

char pattern;

char
segment[10]={0x3f,0x06,0x5b,0x4f,0x66,0x6d,0
x7d,0x07,0x7f,0x6f};

pattern=segment[digit];

return(pattern);

}

void main()

{

TOCON=0x07;

ADCON1=0x0f;

TRISB=1;

TRISC=0x00;

TRISD=0x00;

PORTC=0x00;

lcd_init();

```

```

start=0x00;

unit=0x00;

tens=0x00;


lcd_cmd(0x01);

msg("welcome");

p=0,q=99;/* problem in taking data from user
through buttons,
so taken dummy val*/

while(1)

{

if(start==0)

{

seven_seg(p,q);

}

}

}

//while(1);

void lcd_cmd(char ch)

{

rs=0;

PORTD&=0x0f;

PORTD|=((ch)&(0xf0));

en=1;

delay();

```

```

en=0;

delay();

PORTD&=0x0f;

PORTD|=((ch<<4)&(0xf0));

en=1;

delay();

en=0;

delay();

}

void lcd_data(char ch)

{

rs=1;

PORTD&=0x0f;

PORTD|=((ch)&(0xf0));

en=1;

delay();

en=0;

delay();

PORTD&=0x0f;

PORTD|=((ch<<4)&(0xf0));

en=1;

delay();

en=0;

delay();

}

```

```
void lcd_init()
{
    lcd_cmd(0x02);
    lcd_cmd(0x28);
    lcd_cmd(0x0e);
    lcd_cmd(0x06);
    lcd_cmd(0x80);
}

void msg(const rom char *s)
{
    while(*s)
    {
        lcd_data(*s++);
    }
}
```