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Question 1 : Implement using Proteus and Keil for the following:(15 marks)Connect two switches (SW1 and SW2)and two LED. On press of first switchSW1, the led1should on andoff with a delay of 1sec and other switch SW2, LED2 should be on and off at 500 ms.

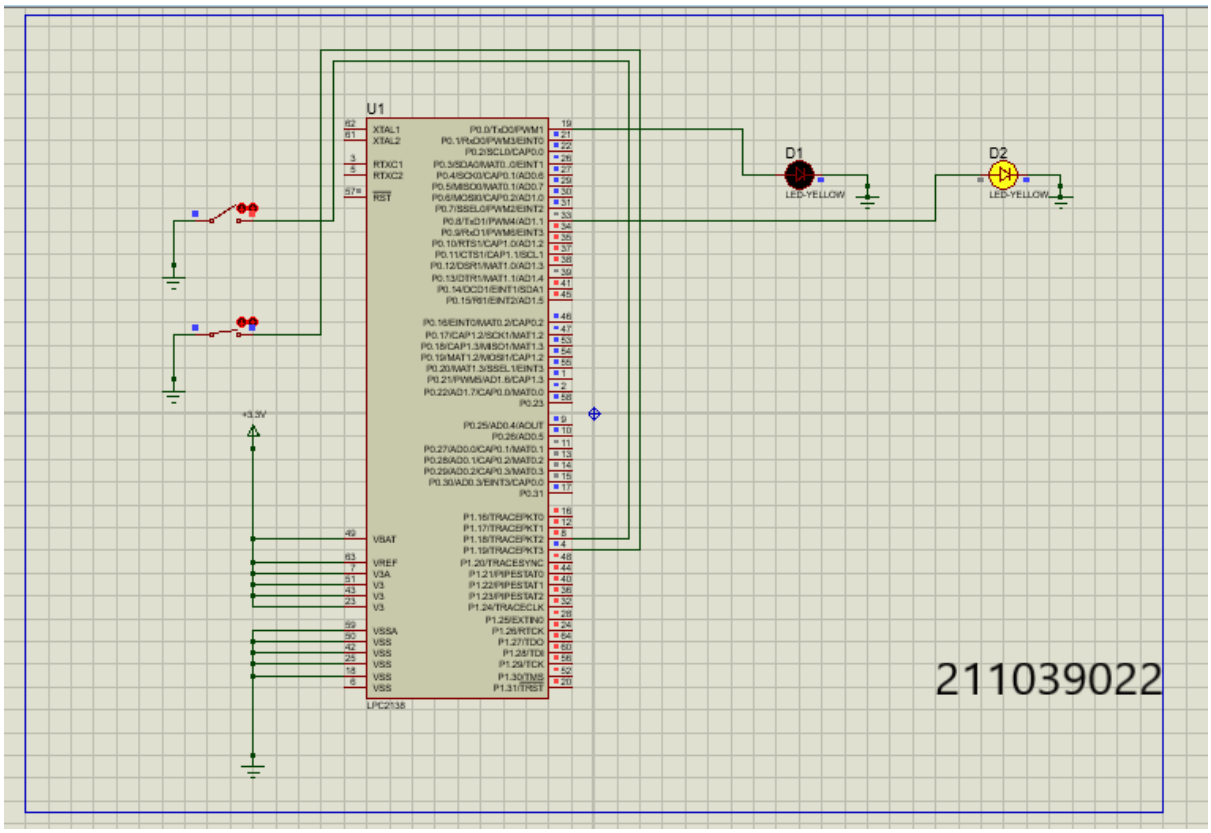
Source Code:

```
/*Question1     - ON LED 1 and OFF with delay of 1 sec
                - ON LED 2 and OFF with delay of 500 m
                P1.18 - Switch1
                P1.19 - Switch
*/

#include<lpc214x.h>

void delay(unsigned int z);
void pll();

int main(void)
{
  IO0DIR=0xFFFFFFFF;
  IO1DIR =0x0;
  pll();                                    //Fosc=12Mhz,CCLK=60Mhz,PCLK=60MHz

  while(1) {
   if((IO1PIN & (1<<18)) ==0) // reading status at P1.18 configured as Switch1 to glow LED1
    {
    IO0SET=0x000000FF;
    delay(1000);          //1sec delay; because 1 sec = 1000ms
    IO0CLR=0x000000FF;
```

```
        delay(1000);
        }
        if((IO1PIN & (1<<19)) ==0)   //reading status at P1.19 configured as Switch2 to glow LED2
        {
        IO0SET=0x0000FF00;
        delay(500); //500ms delay
        IO0CLR=0x0000FF00;
        delay(500);
        }
    }
}

void pll()              //Fosc=12Mhz,CCLK=60Mhz,PCLK=60MHz
{
    PLL0CON=0x01;
    PLL0CFG=0x24;
    PLL0FEED=0xaa;
    PLL0FEED=0x55;
    while(!(PLL0STAT&(1<<10)));
    PLL0CON=0x03;
    PLL0FEED=0xaa;
    PLL0FEED=0x55;
    VPBDIV=0x01;
}

void delay(unsigned int z)
{
    T0CTCR=0x0;             //Select Timer Mode
    T0TCR=0x00;             //Timer off
    T0PR=59999;             //Prescaler value for 1ms calculated
    T0TCR=0x02;             //Timer reset
```

```
    T0TCR=0x01;              //Timer ON
    while(T0TC<z);
    T0TCR=0x00;              //Timer OFF
    T0TC=0;                  //Clear the TC value
}
```

Output :



Question 2 :

Implement using Proteus and Keil, for the following: (15 marks)

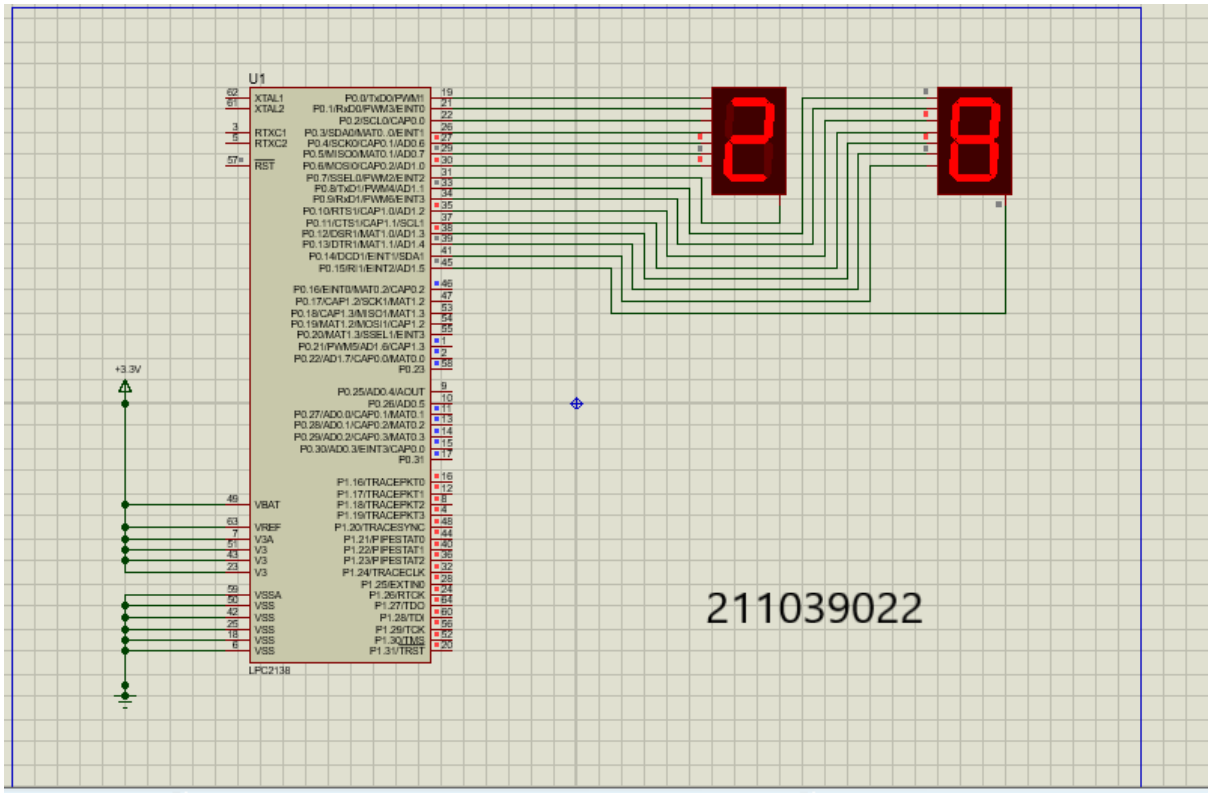
Implement a 00-99 counter(up counter)using two 7 segment display.

Source Code:

```
//Question2 - Implement Upcounter to count 00 - 99

#include<lpc21xx.h>

void delay(unsigned int c)
{
        unsigned int a;
        for(a=1;a<=30000;a++);
}

int main()
{
//Select the Port
PINSEL0=0x00000000;
PINSEL1=0x00000000;

//Set the direction
IO0DIR=0xFFFFFFFF;

while(1)
{
        unsigned long int i,j;

//Send data, we are using Common Cathode - send 1 to glow the bit
  int a[]={0x3f,0x06,0x5B,0x4F,0x66,0x6D,0x7D,0x07,0x7F,0x6F};
```

```
int b[]={0x3f,0x06,0x5B,0x4F,0x66,0x6D,0x7D,0x07,0x7F,0x6F};


        for(i=0;i<10;i++)
                {
                  IO0SET=IO0SET|a[i];    // send data to 1st seven segment display
                for(j=0;j<10;j++)
                 {
                        IO0SET= IO0SET|(b[j]<<8);//send data to 2nd seven segment display
                        delay(10000);
                       IO0CLR= IO0CLR|(b[j]<<8);//Clear the 2nd seven segement display
                }
                 IO0CLR=IO0CLR|a[i]; // clear the 1st seven segment display after sending the data
                 }
        }
}
```

Output :



Github Link:

https://github.com/deepashreep20/MCA