MCA Lab test-1

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Git-Hub link: https://github.com/harshithmurthy18/MCA_LabTest_1

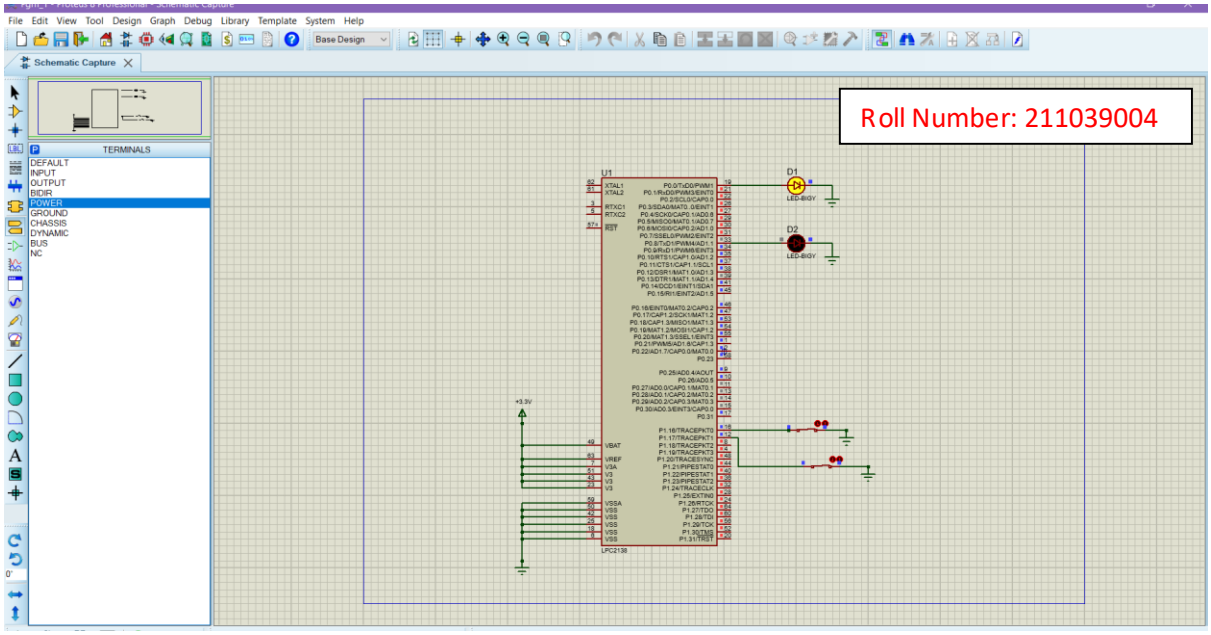
Program 1:

Source code:

```
#include<LPC214x.h>

void delay(unsigned int z);

void pll();

int main(void)
{
   IO0DIR =0xFFFFFFFF;
   IO1DIR = 0x0;
   pll();

   while(1)
                    {
    if((IO1PIN & (1<<16)) ==0)
      {
                                          IO0SET=0x000000ff;
                                          delay(1000);          //1sec delay
                                          IO0CLR =0x000000ff;
                                          delay(1000);
      }

      if((IO1PIN & (1<<17)) ==0)
      {
                                          IO0SET=0x0000ff00;
                                          delay(500);
          //500msec delay
                                          IO0CLR =0x0000ff00;
                                          delay(500);
      }
   }
}

void pll()              //Foscillator=12Mhz,CpuCLK=60Mhz,PeripheralCLK=60MHz
{
   PLL0CON=0x01;        //PLLCON is one of the SFR's here we are Turning on the PLL(0x01)
   PLL0CFG=0x24;        //PLLCFG is used to set Multiplier and divider values (0to4bits for Multiplier)
(5and6 bits for divider)
   PLL0FEED=0xaa;
   PLL0FEED=0x55;
```

```
    while(!(PLL0STAT&(1<<10)));
   PLL0CON=0x03;          //we are enabling and tuerning on the pll here
   PLL0FEED=0xaa;
   PLL0FEED=0x55;
   VPBDIV=0x01; //
}

void delay(unsigned int z)
{
   T0CTCR=0x0;              //Select Timer Mode
   T0TCR=0x00;              //Timer off (TCR-timer control register - enable 1 and disable 0)
   T0PR=59999;              //Prescaler value for 1ms (formula based caluculation)
   T0TCR=0x02;              //Timer reset
   T0TCR=0x01;              //Timer ON
   while(T0TC<z);
   T0TCR=0x00;              //Timer OFF
   T0TC=0;                 //Clear the TC value.
}
```

Proteus Output:



Program 2:
Source code:

```
#include<LPC213x.h>

unsigned int del;

void delay(unsigned int del)
{
	for(del=1; del<=77733; del++); //random delay
}

int main()
{
   PINSEL0=0x00000000; //all port0 pins are made GPIO mode

		IO0DIR |=0xffffffff; //all port 0 pins are made output

	while(1)
	{
			int i, j;
			int
array[]={0x3f,0x06,0x5B,0x4F,0x66,0x6D,0x7D,0x07,0x7F,0x6F};//common cathode type 1- glows the
LED


		for(j=0;j<10;j++)
		{
			IO0SET |= array[j];

			for(i=0;i<10;i++)
			{
				IO0SET |= (array[i]<<8); //prints the units count
				delay(100000);
				IO0CLR |= (array[i]<<8);
			}

			IO0CLR=array[j];
		}
	}
}
```

Proteus output: