Assignment # 01

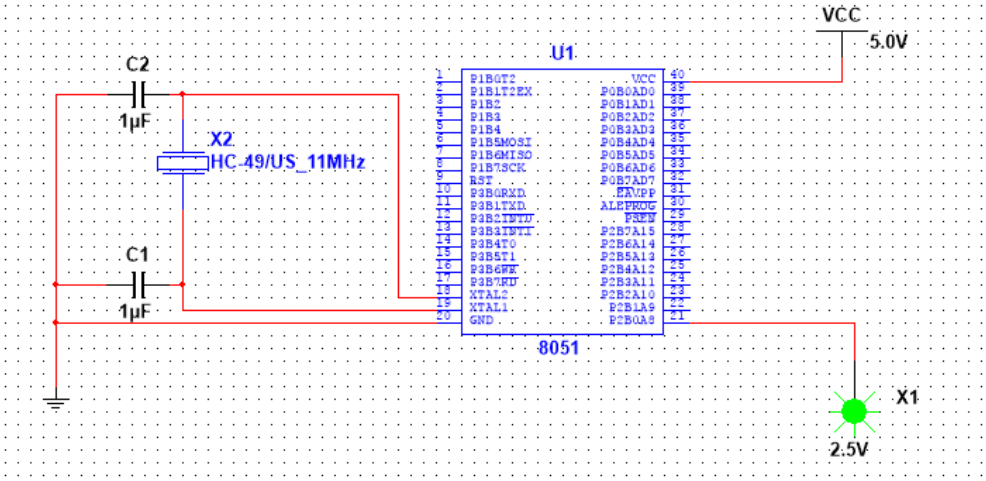
Objective: -

LED interface on multisim of 8051

Equipment: -

I. 8051 microprocessor
II. LED
III. Power supply
IV. Crystal oscillator frequency

Block diagram



Assembly Program

```
$MOD51     ; This includes 8051 definitions for the Metalink assembler
; Please insert your code here.
org 0000h;
mov A,#0F5h
start:
        mov p2,A
        acall delay
        cpl A
        sjmp start
delay:
 mov r0,#010h
 mov r1,#0ffh
back: djnz r1,back
        djnz r0, back
ret
```

END

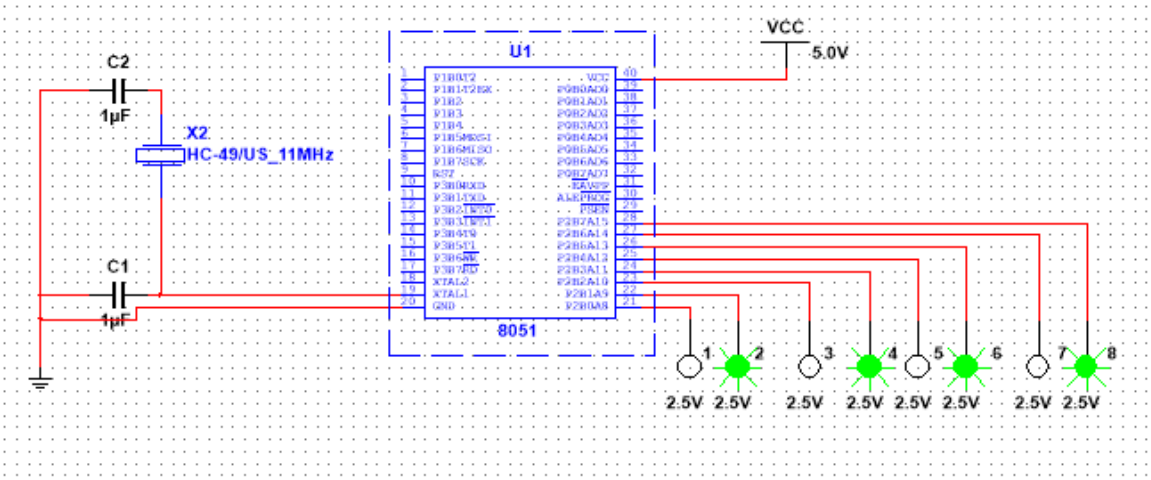
C-Program

```
#include<htc.h>
#define led P20
void delay();          // Function prototype declaration
void main ()
{
   while(1)             // infinite loop
   {
      led = 1;          // LED ON
      delay();
      led = 0;          // LED OFF
      delay();

   }
}
```

Assignment Q1

Write a code of LED interface in Assembly and C through different P1, P2, P3

Block diagram of 8 LEDs



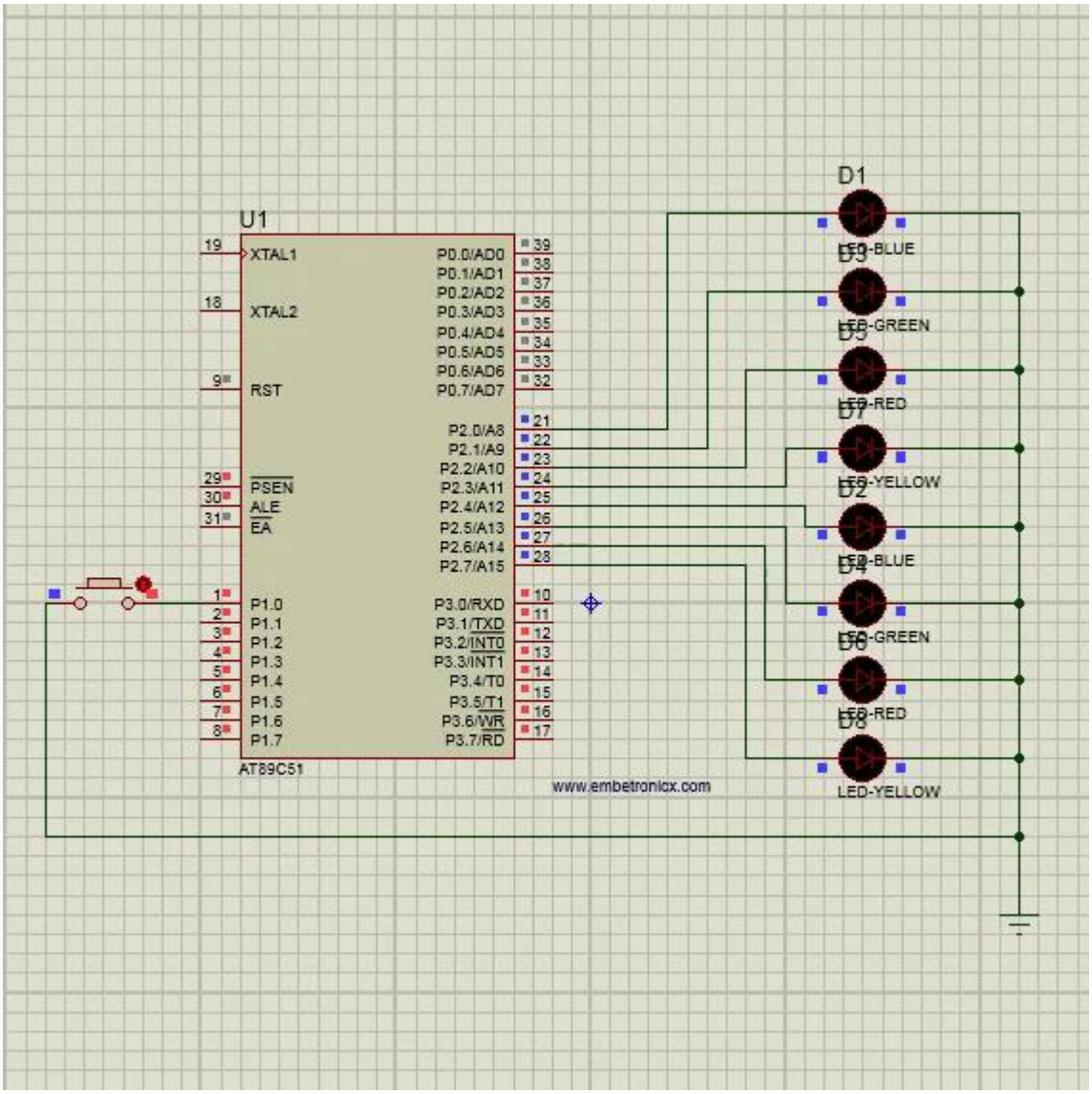
mov A,#055h

1. Perform Rotation operation
2. Perform four on and off
3. Two on and six off
4. Write a c code for above program.

Program of LED through switch

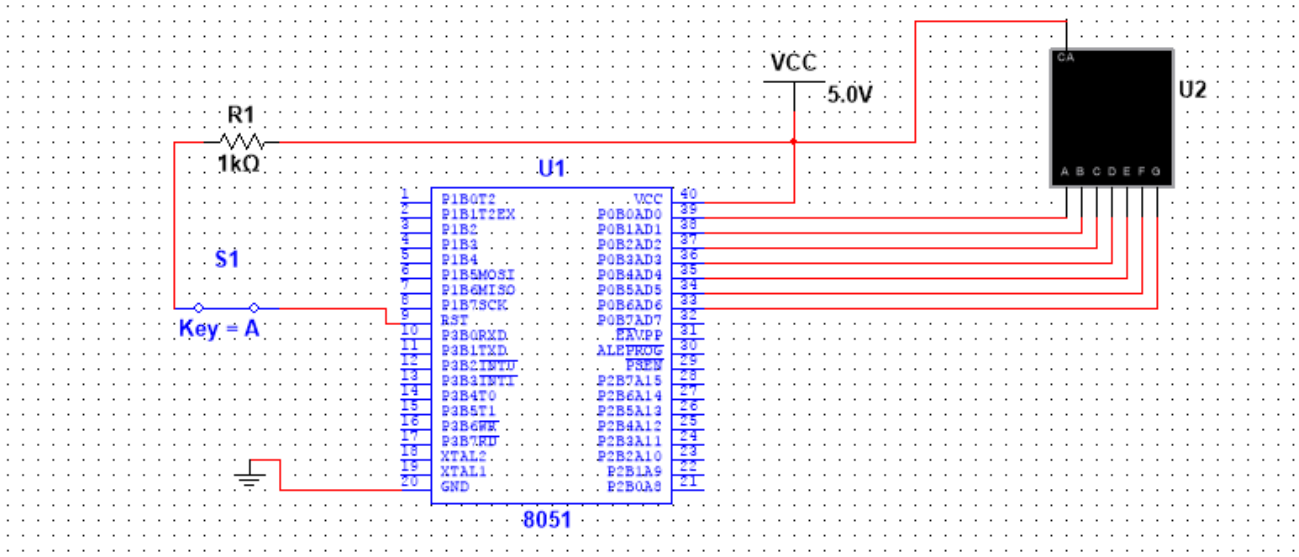
```
#include<reg51.h>

sbit sw=P1^0;

void main()
{     while(1)
   {
      if( sw == 0)
      {
         P2 = 0xFF;
```

```
        }
        else
        {
           P2 = 0x00;
         }
    }
}
```



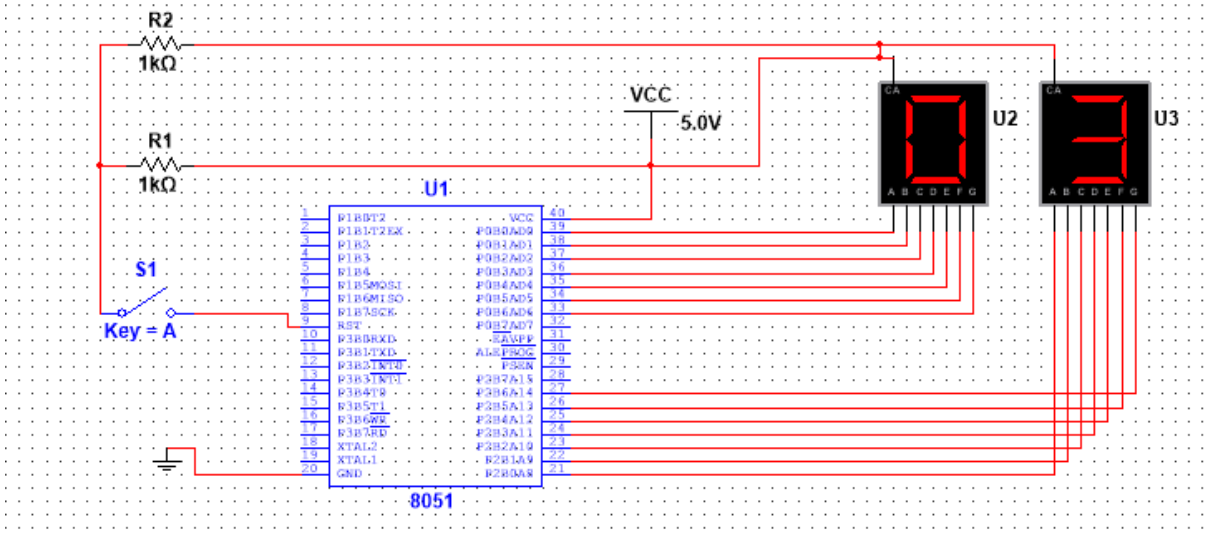
1. Blink alternate LEDs at P3 using software delay
2. Blink P0 LEDs in cyclic fashion using software delay
3. Count the number of times a switch at P1.1 is pressed and display the count in P2If you have any doubt please comment below.

Draw the Block diagram of seven segment display and write its code in C and Assembly



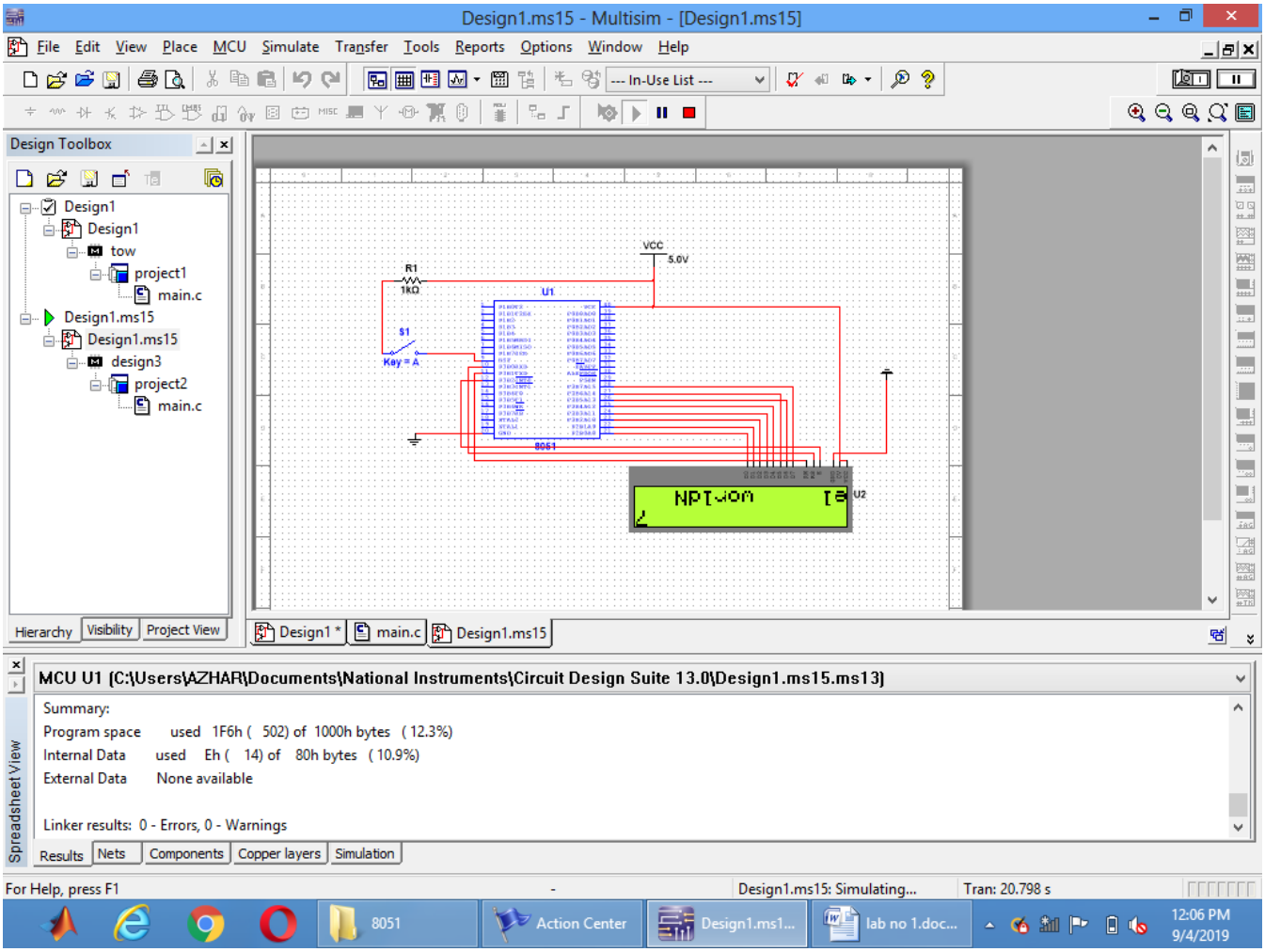
Draw block diagram of two seven segment display

Write a program in Assembly and C to display a digit from 0 to 9 in both seven segment display



Assignment # 02

Write a program to display a well come to bahria in LCD display


Design1.ms15 - Multisim - [Design1.ms15]
File Edit View Place MCU Simulate Transfer Tools Reports Options Window Help
--- In-Use List ---
Design Toolbox
Design1
Design1
tow
project1
main.c
Design1.ms15
Design1.ms15
design3
project2
main.c
Hierarchy
Visibility
Project View
VCC
5.0V
R1
1kΩ
U1
S1
Key = A
8051
U2
Design1 *
main.c
Design1.ms15
MCU U1 (C:\Users\AZHAR\Documents\National Instruments\Circuit Design Suite 13.0\Design1.ms15.ms13)
Summary:
Program space used 1F6h (502) of 1000h bytes (12.3%)
Internal Data used Eh (14) of 80h bytes (10.9%)
External Data None available
Linker results: 0 - Errors, 0 - Warnings
Spreadsheet View
Results
Nets
Components
Copper layers
Simulation
For Help, press F1
Design1.ms15: Simulating...
Tran: 20.798 s
8051
Action Center
Design1.ms1...
lab no 1.doc...
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