LED Interfacing Using 8051

Aim:

To interface an LED with the 8051 microcontroller and control its operation.

Apparatus Required:

1.Laptop with Keil uVision software
2.Proteus Design Suite

Circuit Diagram Setup in Proteus:

1. Open Proteus and create a new project.
2. Add the following components from the library:
   8051 Microcontroller (AT89C51)
   LED
   Resistor (330Ω)
   Ground (GND) connection
3. Connect the LED's anode to P1.0 of the microcontroller through a 330Ω resistor.
4. Connect the cathode of the LED to GND.
5. Save the design and proceed to programming in Keil.

Algorithm:

1. Configure P1.0 as an output port.
2. Set P1.0 HIGH to turn ON the LED.
3. Introduce a delay.
4. Set P1.0 LOW to turn OFF the LED.
5. Introduce a delay.
6. Repeat the process continuously.

Program:

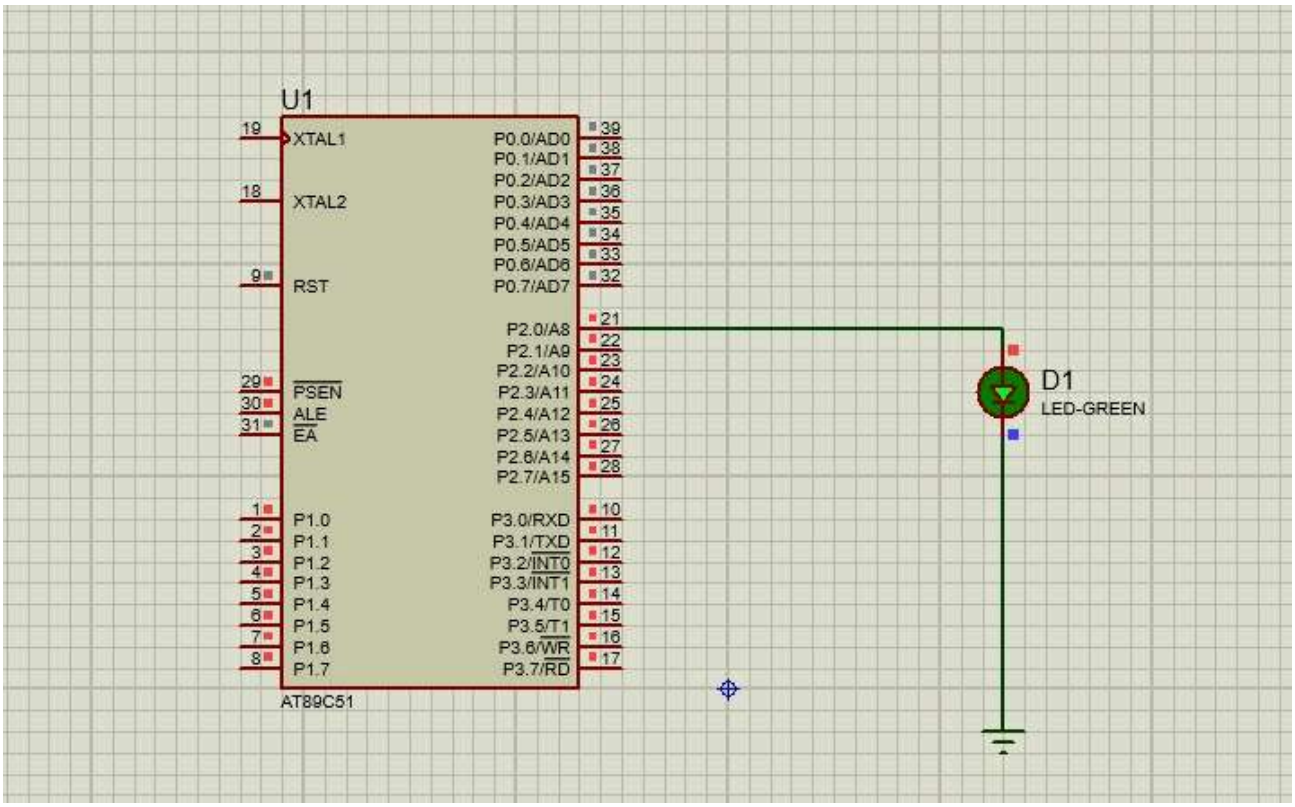
```
#include<reg52.h>


sbit LED = P2^0;

void Delay(void);

void main(void)
{
    while(1)
      {
          LED = 0;
            Delay();
            LED = 1;
            Delay();
      }
}
void Delay(void)
{
    int j;
      int i;
      for(i=0;i<10;i++)
      {
          for(j=0;j<10000;j++)
        {
        }
    }
}
```

Output:



Result:

The LED interfacing with the 8051 microcontroller has been successfully implemented and simulated using Keil and Proteus.