INDEX

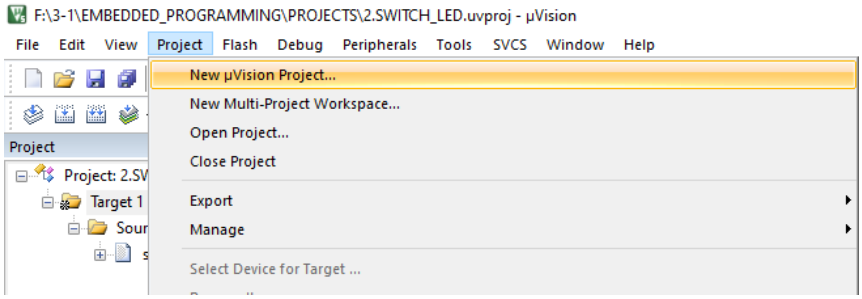
LED blink for 10 times using KEIL and PROTEUS softwares

AIM: To blink LED for 10 times

PROCEDURE:

Step 1: Open Keil

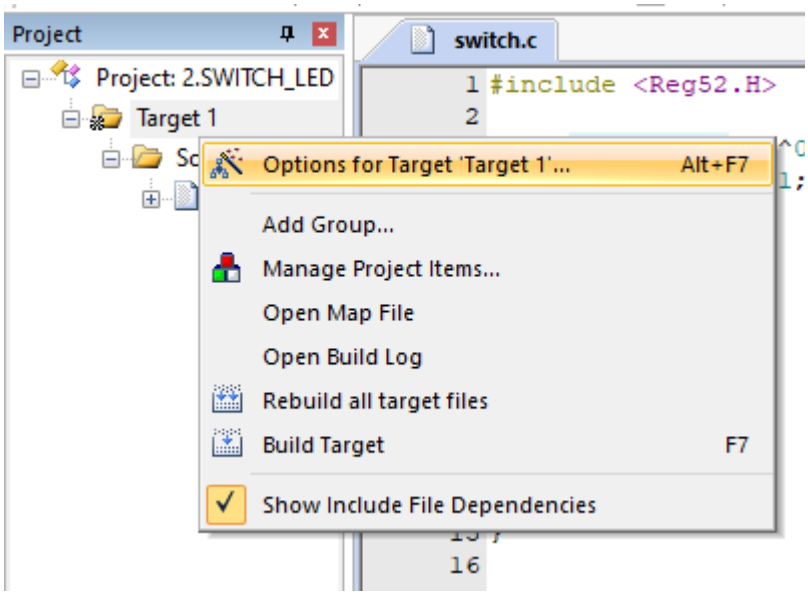
Step 2: Create a new project and save it



Step 3: Create a new file and write the code as in below-mentioned picture

```
1 #include <reg52.h>
2 void delay(void);
3 sbit led = P1^0;
4 void main(void)
5 {
6   int i=0;
7   while(1)
8   {
9
10  if(i<10)
11  {
12
13    led=0;
14    delay();
15    led=1;
16    delay();
17    i++;
18  }
19  else
20  led=0;
21 }
22  }
23 void delay()
24 {
25  int i,j;
26  for(i=0;i<90;i++)
27  for(j=0;j<1000;j++)
28  {}
29 }
```

Step 4: Go to the below-shown directory and check the “Create hex file” box and change the frequency to “12MHz” and save it



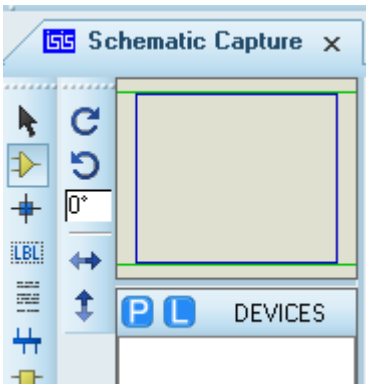
Step 5: Build target and you will find the file in object folder in “C source file” type

Step 6: Open Proteus Professional software

Step 7:

- Click on “Create a new Project”
- Click on “Create a schematic from a selected format”
- Click on “Do not create a PCB layout”
- Click on “No firmware Project”
- Click “Finish”

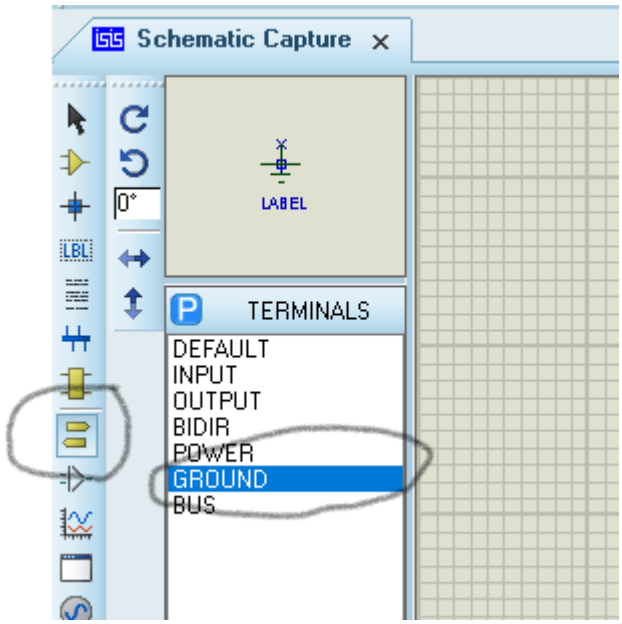
Step 8: Click on P by selecting the diode type symbol



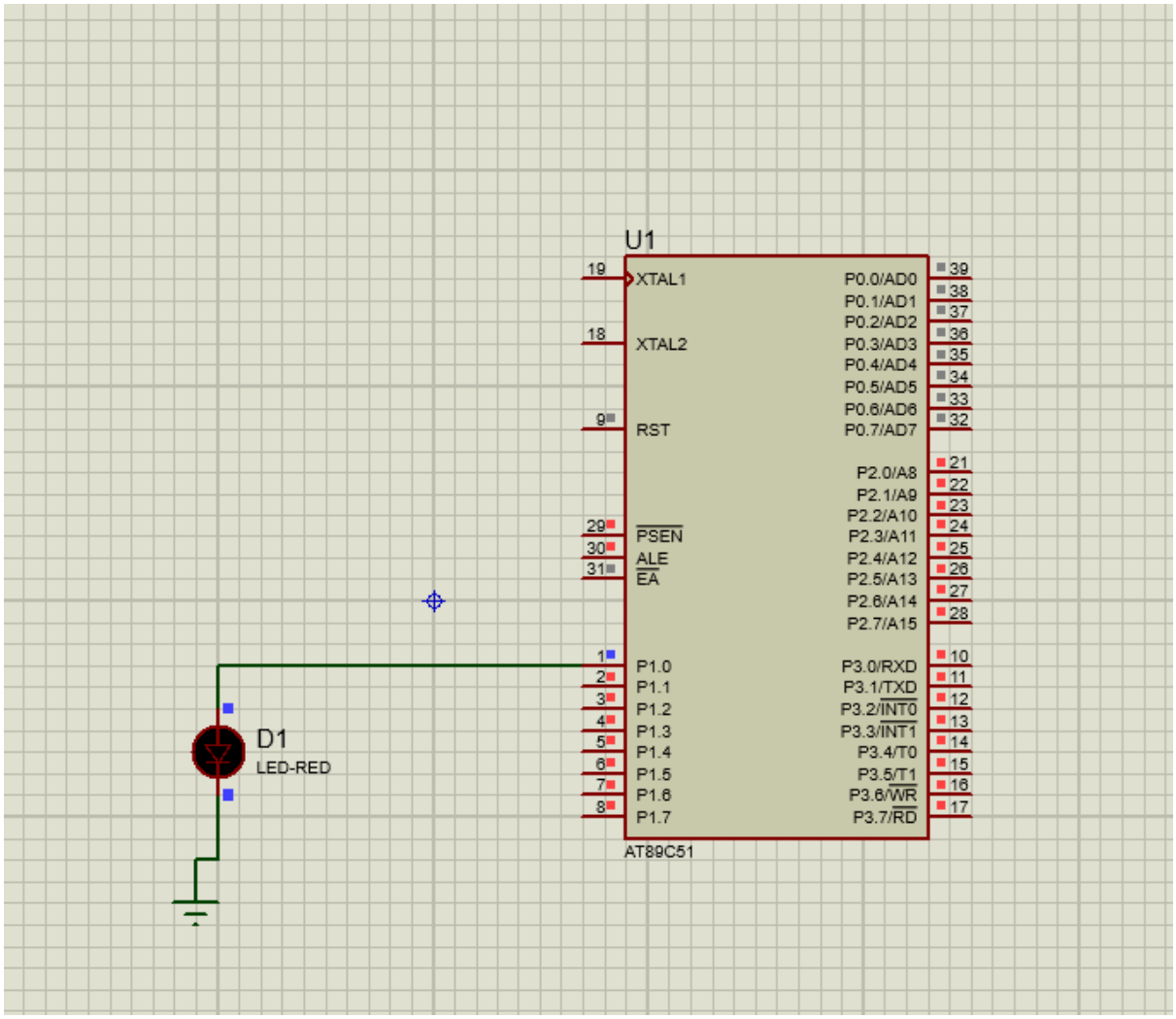
Step 9: Select the following “AT89C51” microcontroller and place it on the schematic

Step 10: Select the “LED_RED” component by following the same procedure in Step 8.

Step 11: Select and drag the “GROUND” into the Schematic as shown below



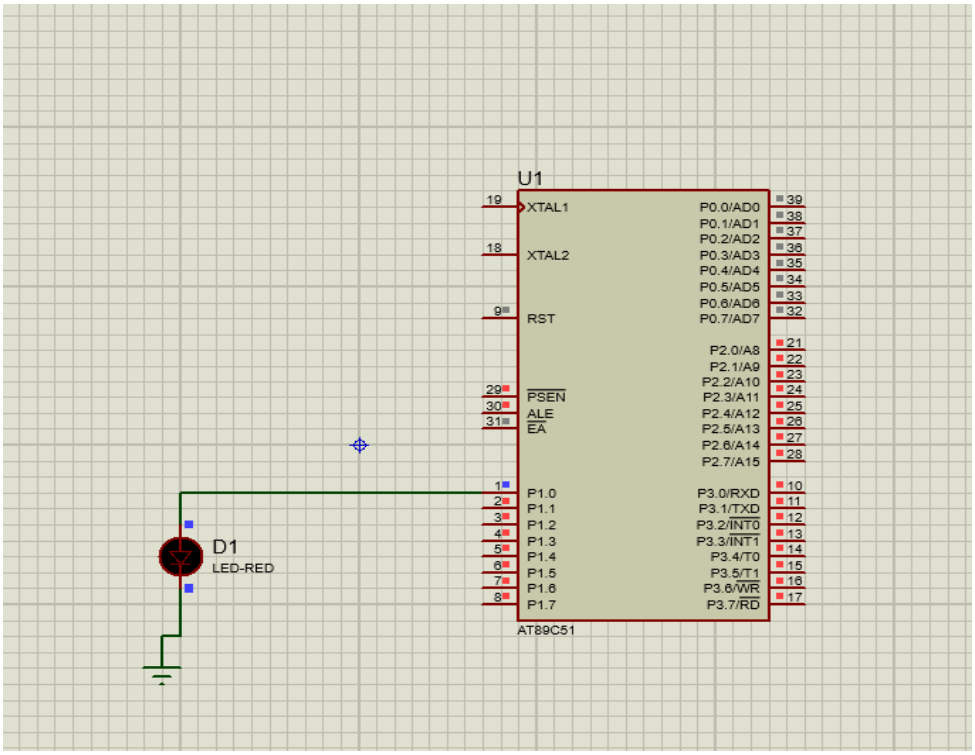
Step 11: Connect all the components as shown below



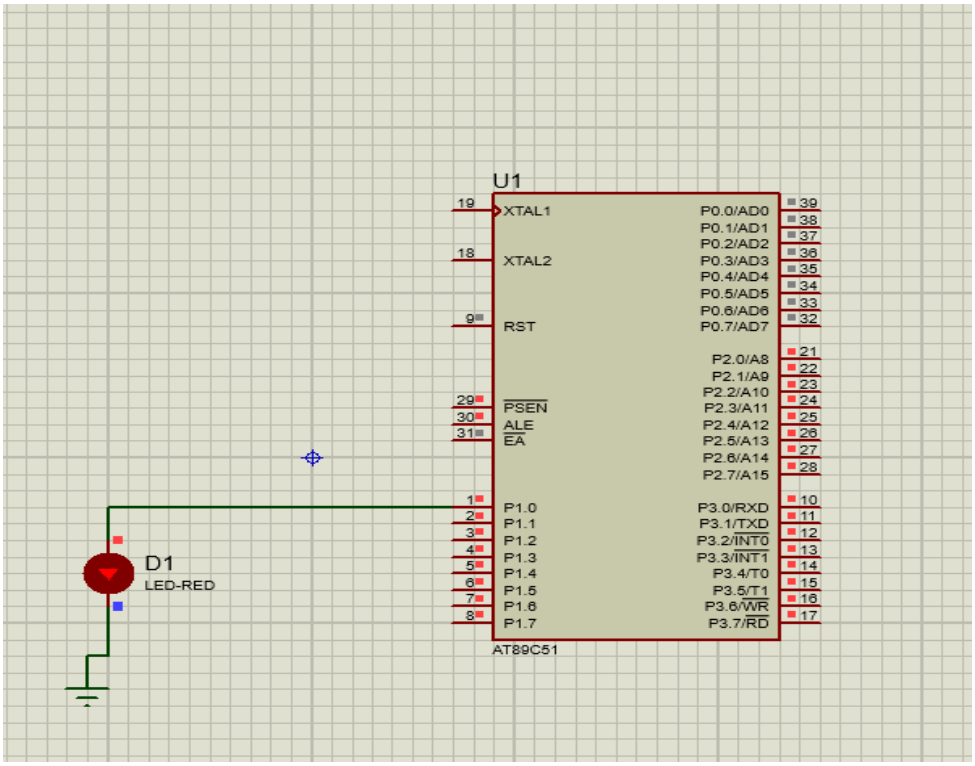
RESULT:

LED will blink for 10 times will 1second delay

- When Switch is in OFF State



- When Switch is in ON state



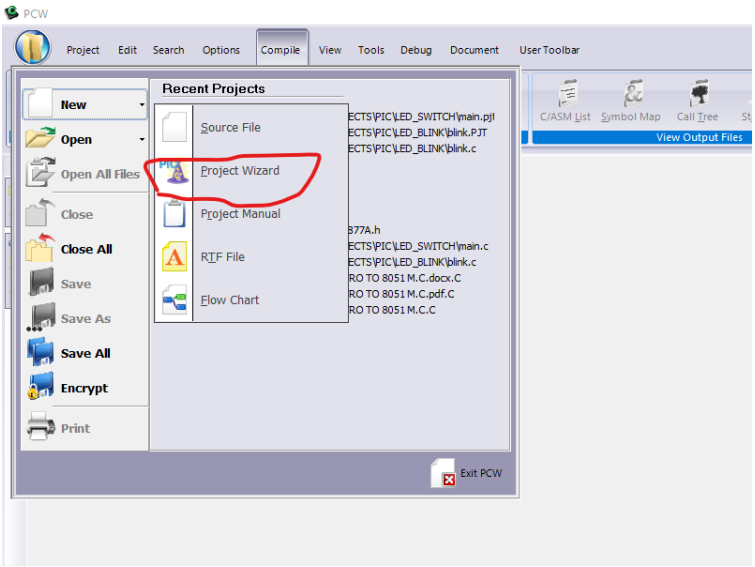
LED blink for 10 times using PIC and PROTEUS softwares

AIM: To blink LED for 10 times

PROCEDURE:

Step 1: Open PIC C Complier

Step 2: Create a new project and save it



Step 3: write the code as in below-mentioned picture

main.c *

```
#include <main.h>

#use delay (clock=8000000)

void main()
{
int i=0;
  while(TRUE)
  {
  if(i<10)
  {
    output_high(PIN_B0);
    delay_ms(100);
    output_low(PIN_B0);
    delay_ms(100);
    i++;
  }
  else
  output_low(PIN_B0);
  }
}
```

Step 4: Go to compile option and click “COMPILE” and “BUILD ALL” options

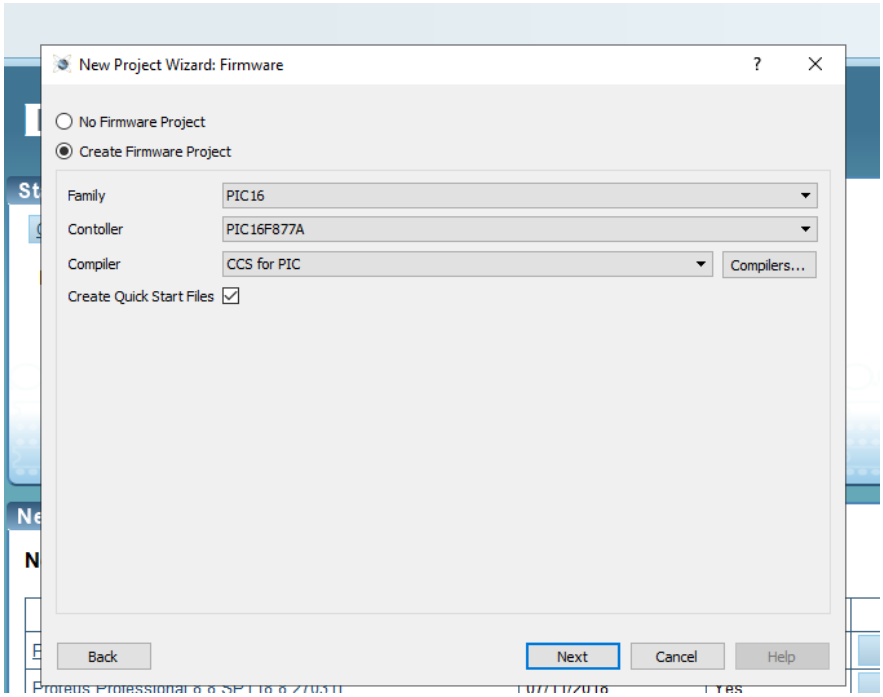
Step 5: It will create a hex file and you will find that in project folder path

Step 6: Open Proteus Professional software

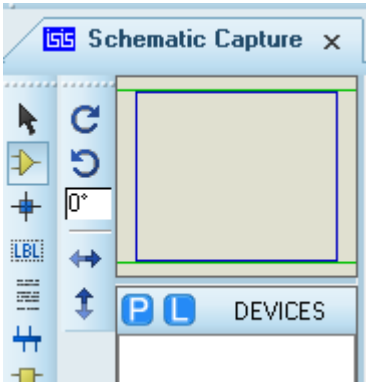
Step 7:

- Click on “Create a new Project”
- Click on “Create a schematic from a selected format”
- Click on “Do not create a PCB layout”

Step 8: Click on “CREATE FIRMWARE” and select the below options and click next.

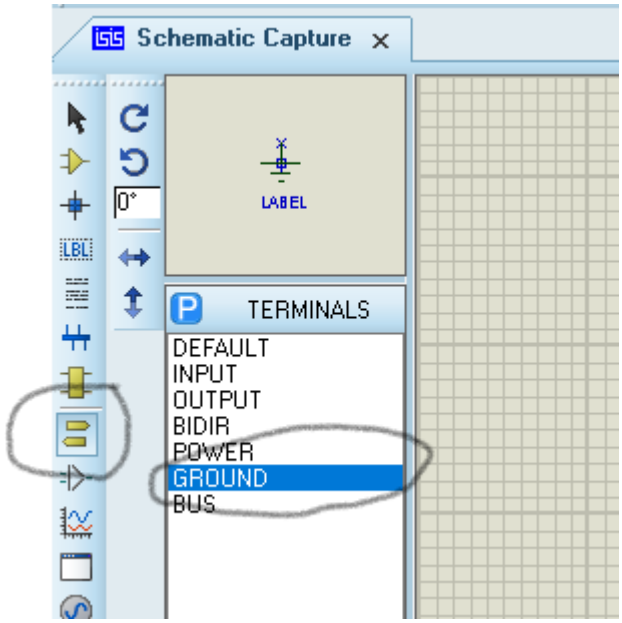


Step 9: Click on P by selecting the diode type symbol

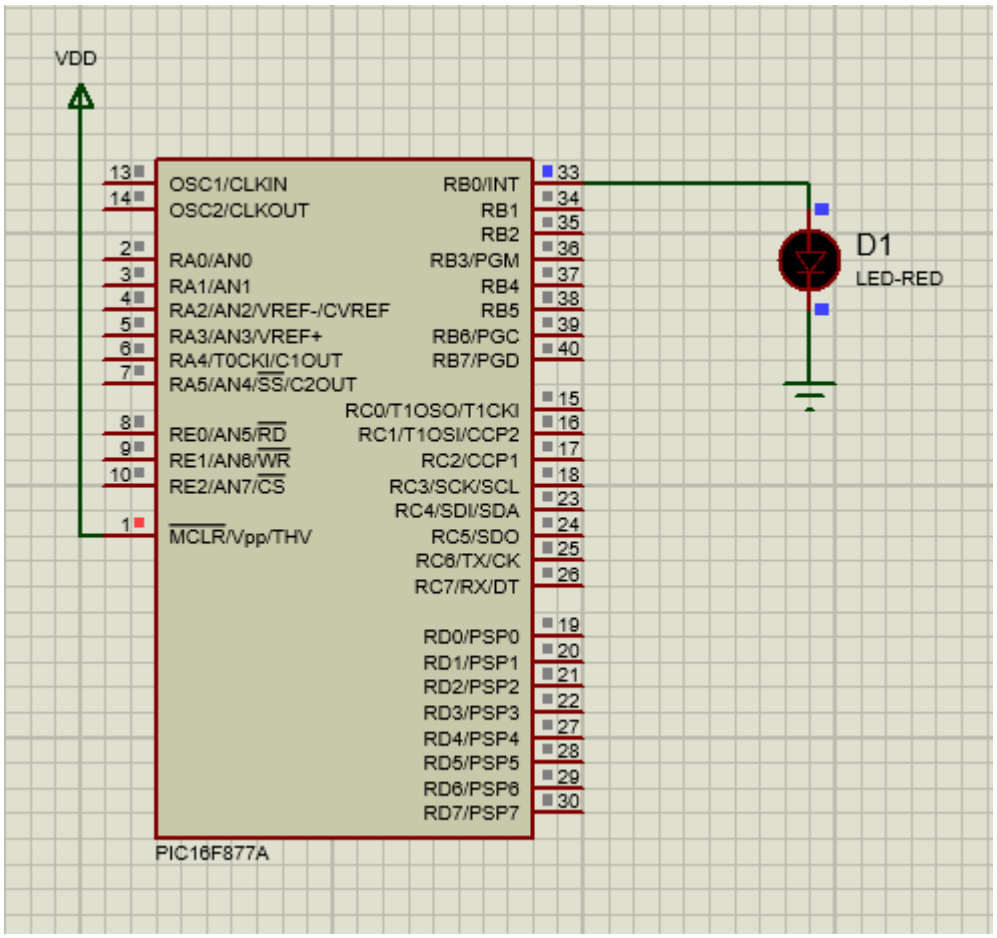


Step 10: Select the “LED_RED” component by following the same procedure in Step 8.

Step 11: Select and drag the “GROUND” and “POWER” into the Schematic as shown below



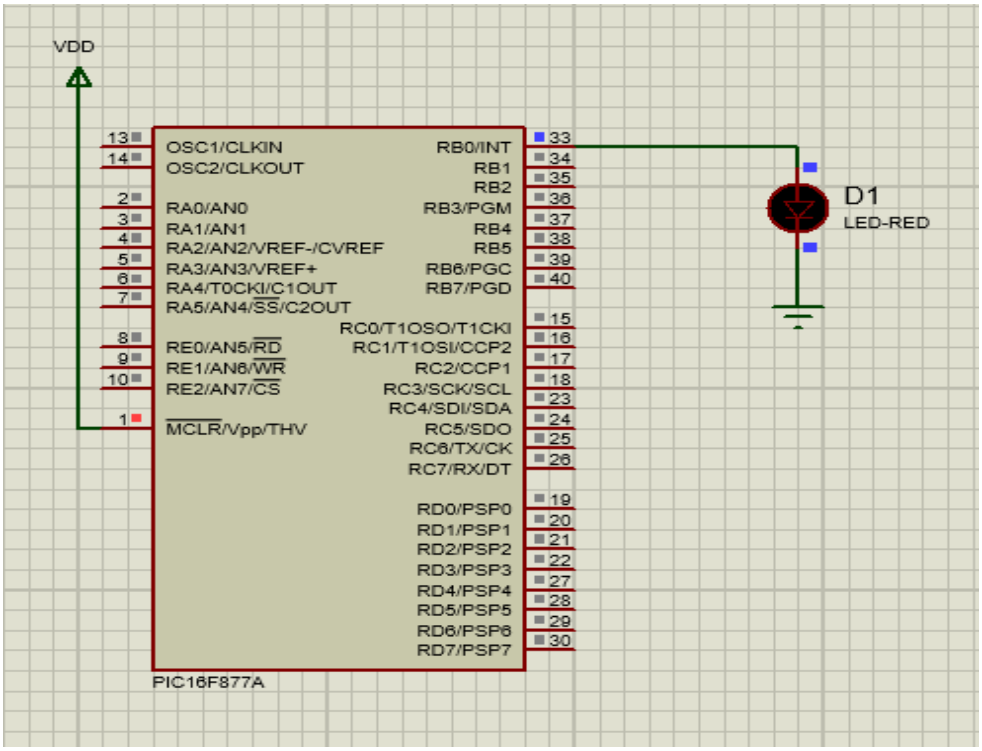
Step 12: Connect all the components as shown below



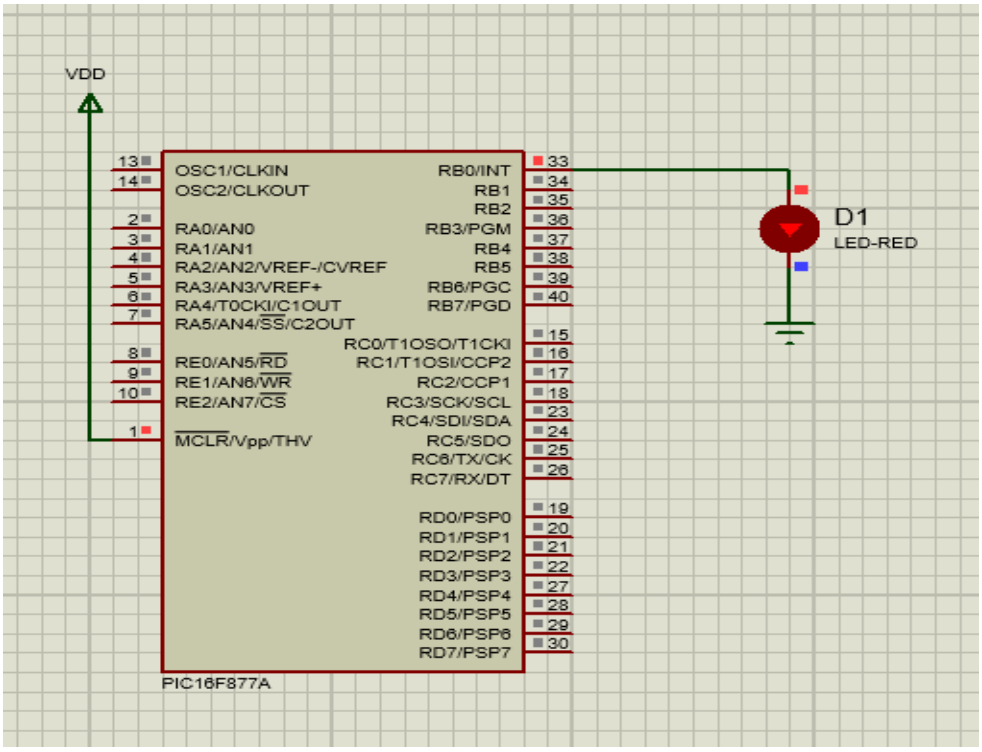
RESULT:

LED will blink for 10 times

- When Switch is in OFF State



- When Switch is in ON state



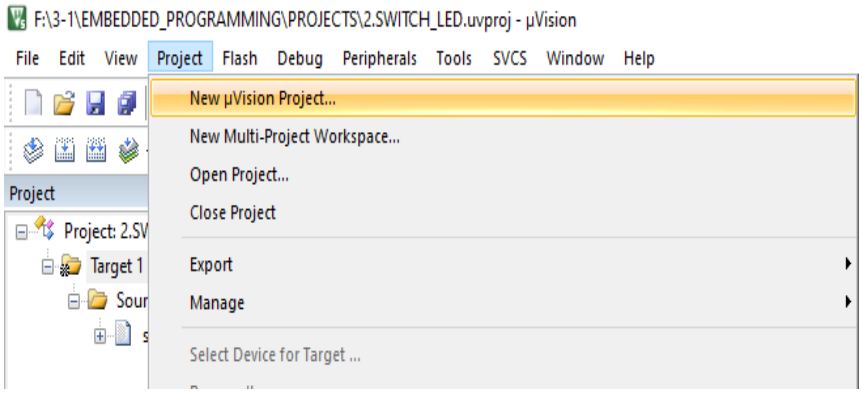
Displaying 00 to FF using KEIL and PROTEUS softwares in seven segment displays

AIM: To display 00 to FF with 2 seven segment displays

PROCEDURE:

Step 1: Open Keil

Step 2: Create a new project and save it

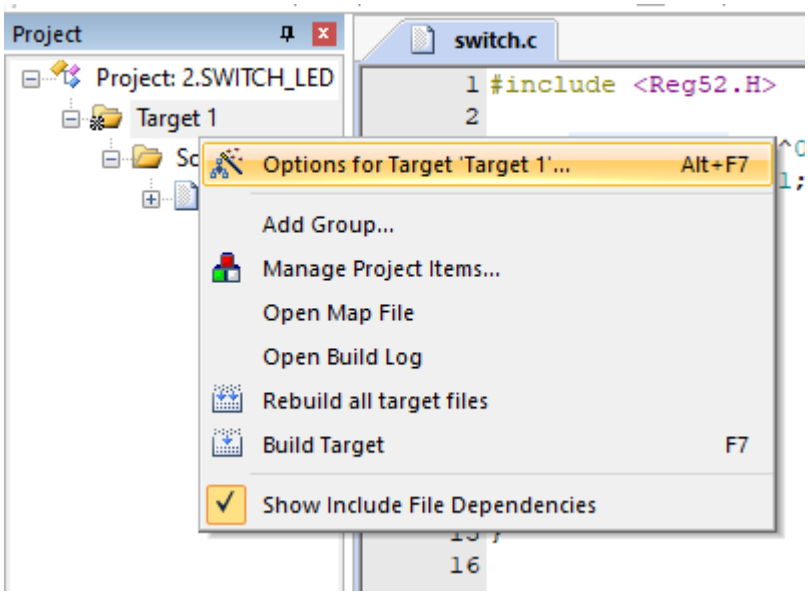


Step 3: Create a new file and write the code as in below-mentioned picture

```
#include <reg52.h>


void delay(void);
void main(void)
{
  unsigned char seg_code[]={0x3F,0x06,0x5B,0x4F,0x66,0x6D,0x7D,0x07,0x7F,0x67,0x77,0x7C,0x39,0x5E,0x79,0x71};
  int i,j;
  while(1)
  {
  for(i=0;i<=15;i++)
  {
    P2=seg_code[i];
    for(j=0;j<=15;j++)
      {
          P3=seg_code[j];
          delay();
      }
    }
  }
}
void delay(void)
{
int j; int i;
for(i =0;i<1000;i++)
for(j=0;j<90;j++){
}
}
```

Step 4: Go to the below-shown directory and check the “Create hex file” box and change the frequency to “12MHz” and save it



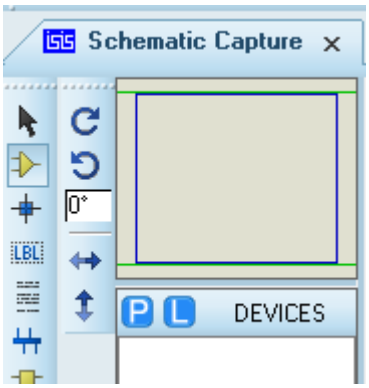
Step 5: Build target and you will find the file in object folder in “C source file” type

Step 6: Open Proteus Professional software

Step 7:

- Click on “Create a new Project”
- Click on “Create a schematic from a selected format”
- Click on “Do not create a PCB layout”
- Click on “No firmware Project”
- Click “Finish”

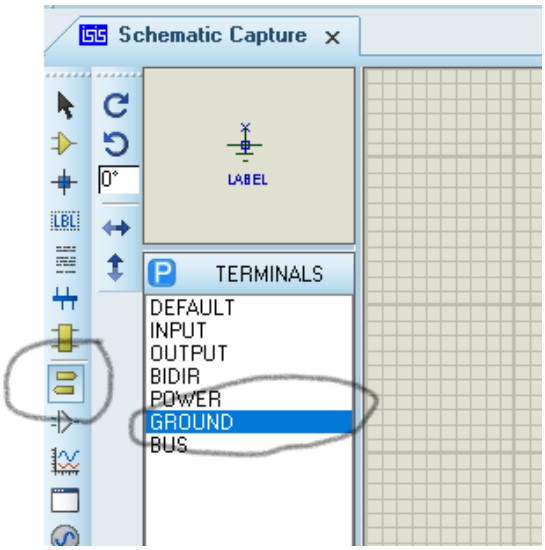
Step 8: Click on P by selecting the diode type symbol



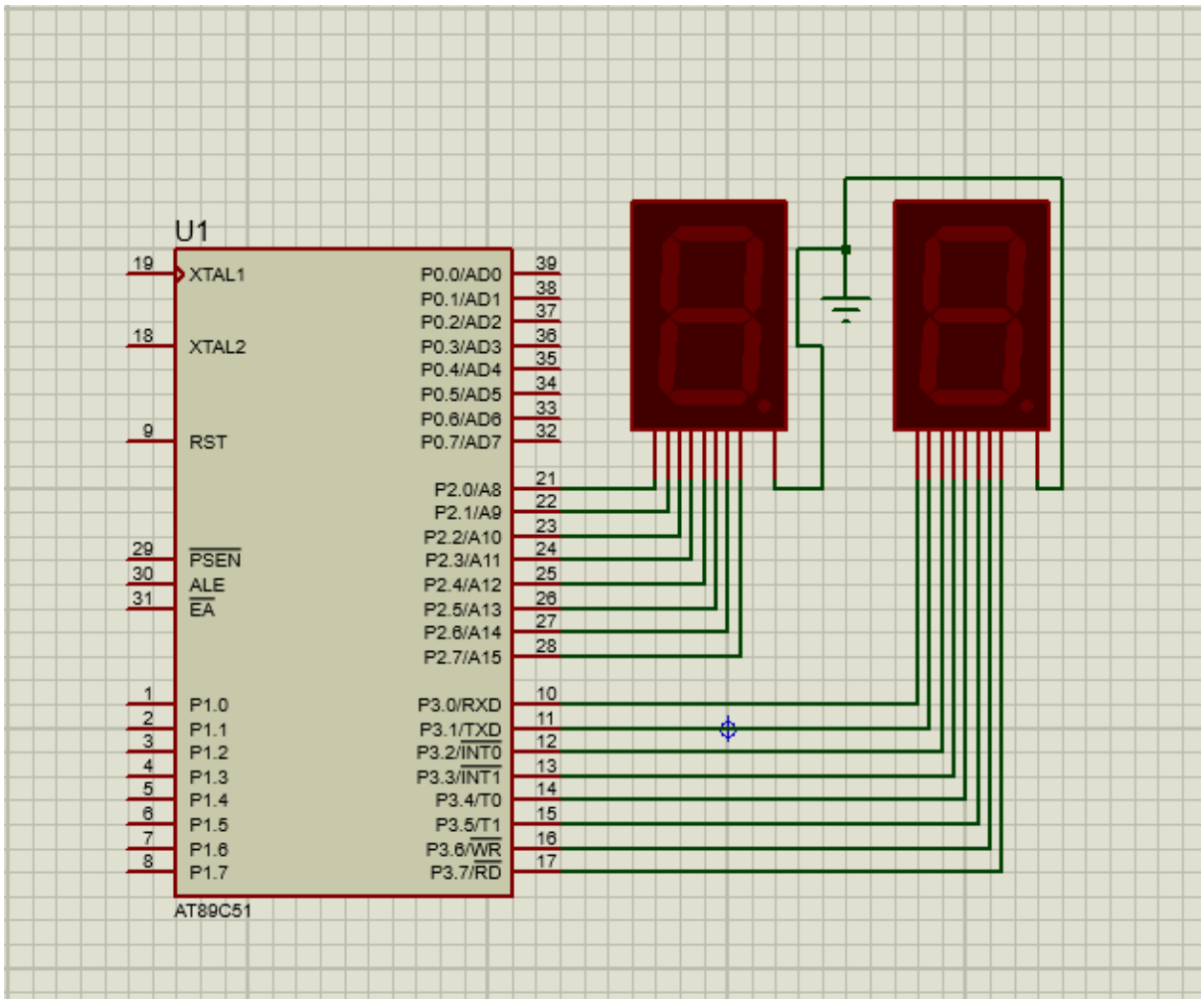
Step 9: Select the following “AT89C51” microcontroller and place it on the schematic

Step 10: Select the “LED_RED” component and seven segment display(7SEG-MPX1-CC) by following the same procedure in Step 8.

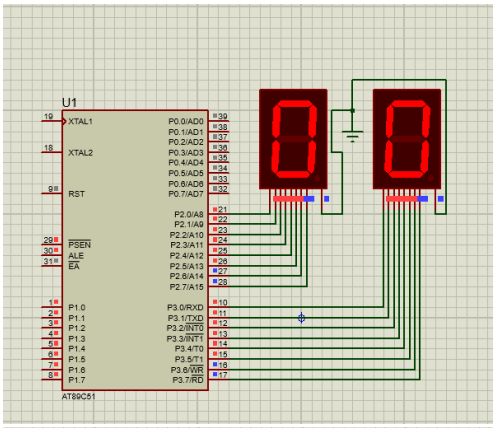
Step 11: Select and drag the “GROUND” into the Schematic as shown below

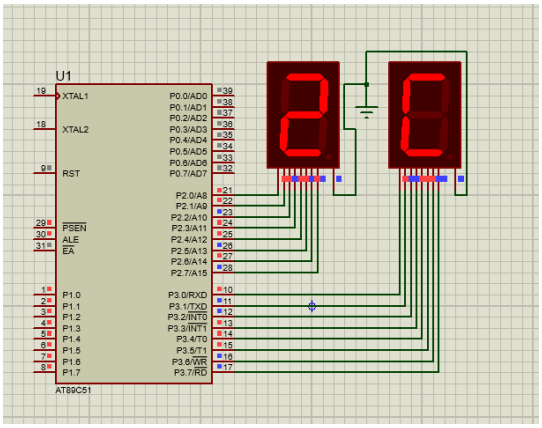


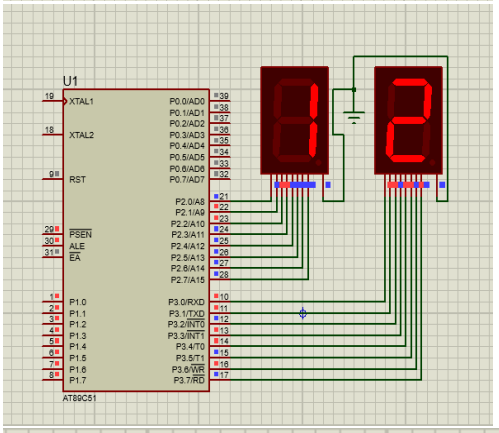
Step 12: Connect all the components as shown below

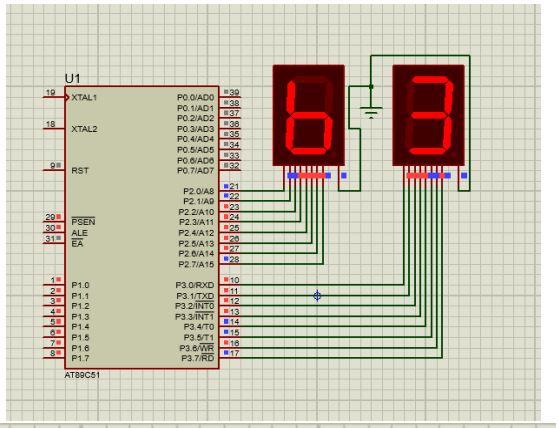


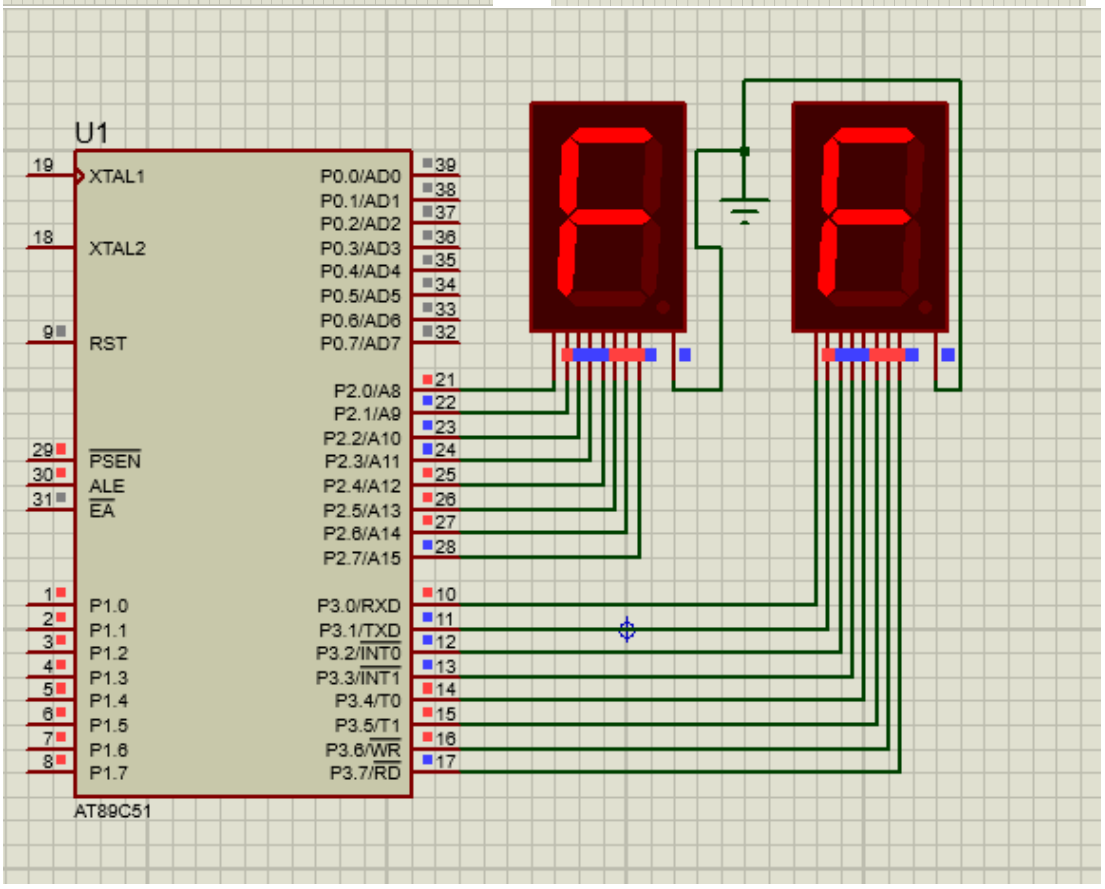
RESULT:


U1
AT89C51


U1
AT89C51


U1
AT89C51


U1
AT89C51


U1
XTAL1
XTAL2
RST
PSEN
ALE
EA
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
P1.6
P1.7
P0.0/AD0
P0.1/AD1
P0.2/AD2
P0.3/AD3
P0.4/AD4
P0.5/AD5
P0.6/AD6
P0.7/AD7
P2.0/A8
P2.1/A9
P2.2/A10
P2.3/A11
P2.4/A12
P2.5/A13
P2.6/A14
P2.7/A15
P3.0/RXD
P3.1/TXD
P3.2/INT0
P3.3/INT1
P3.4/T0
P3.5/T1
P3.6/WR
P3.7/RD
AT89C51

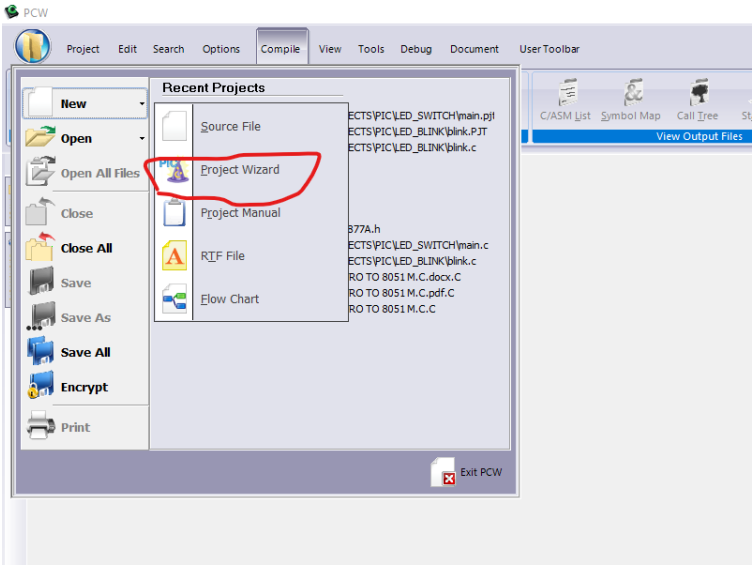
Displaying 00 to FF using PIC and PROTEUS softwares in seven segment displays

AIM: To display 00 to FF with 2 seven segment displays

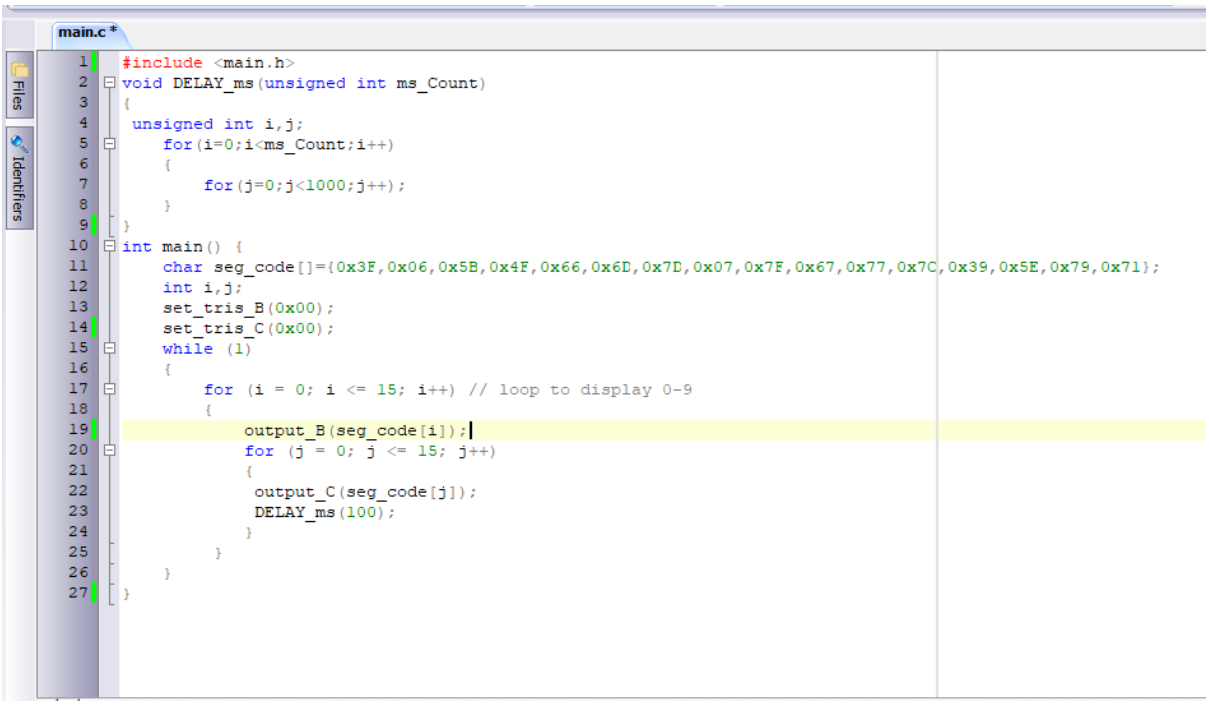
PROCEDURE:

Step 1: Open PIC C Complier

Step 2: Create a new project and save it



Step 3: write the code as in below-mentioned picture



```
#include <main.h>
void DELAY_ms(unsigned int ms_Count)
{
 unsigned int i,j;
    for(i=0;i<ms_Count;i++)
    {
        for(j=0;j<1000;j++);
    }
}
int main() {
    char seg_code[]={0x3F,0x06,0x5B,0x4F,0x66,0x6D,0x7D,0x07,0x7F,0x67,0x77,0x7C,0x39,0x5E,0x79,0x71};
    int i,j;
    set_tris_B(0x00);
    set_tris_C(0x00);
    while (1)
    {
        for (i = 0; i <= 15; i++) // loop to display 0-9
        {
            output_B(seg_code[i]);
            for (j = 0; j <= 15; j++)
            {
             output_C(seg_code[j]);
             DELAY_ms(100);
            }
        }
    }
}
```

Step 4: Go to compile option and click “COMPILE” and “BUILD ALL” options

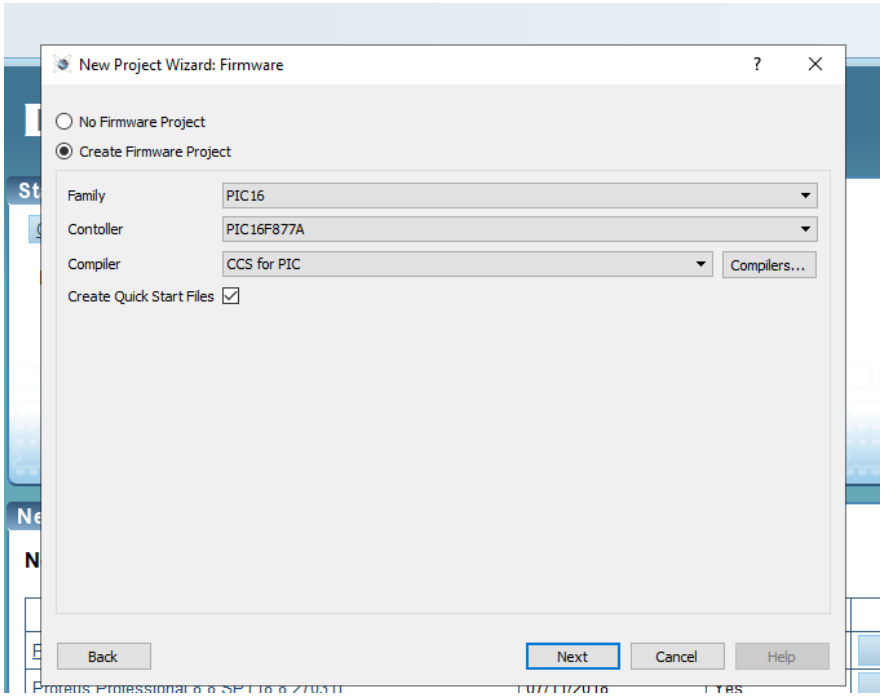
Step 5: It will create a hex file and you will find that in project folder path

Step 6: Open Proteus Professional software

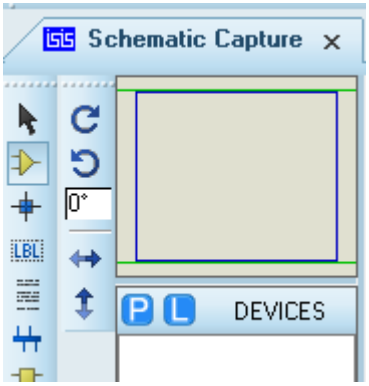
Step 7:

- Click on “Create a new Project”
- Click on “Create a schematic from a selected format”
- Click on “Do not create a PCB layout”

Step 8: Click on “CREATE FIRMWARE” and select the below options and click next.

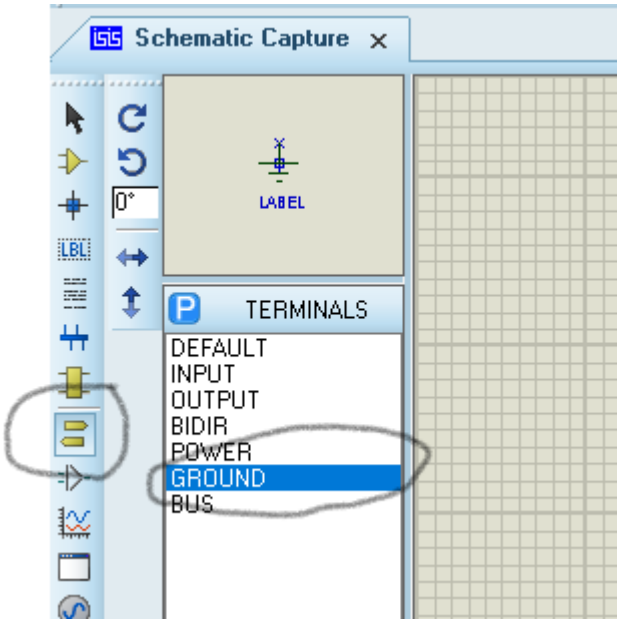


Step 9: Click on P by selecting the diode type symbol

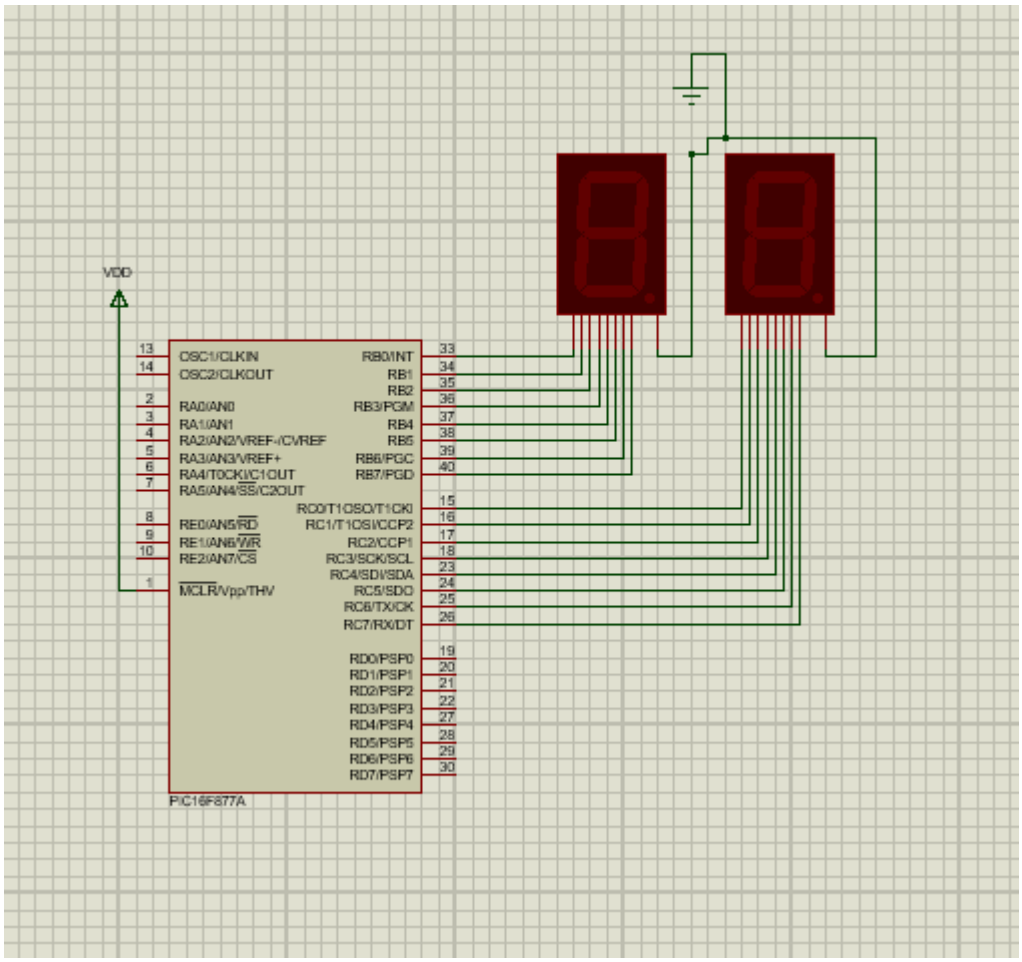


Step 10: Select the “LED_RED” and seven segment display(7SEG-MPX1-CC) components by following the same procedure in Step 8.

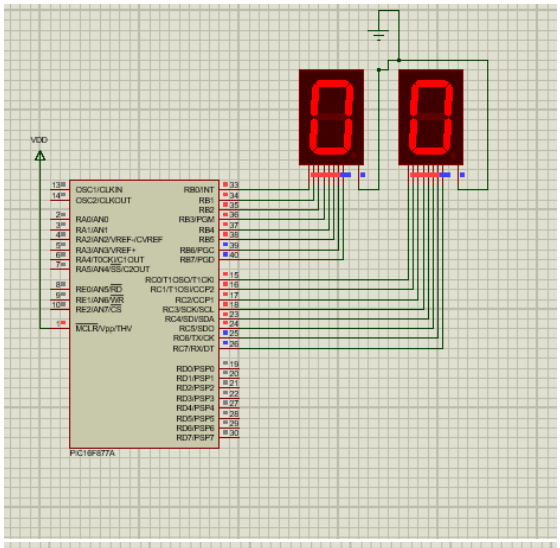
Step 11: Select and drag the “GROUND” and “POWER” into the Schematic as shown below

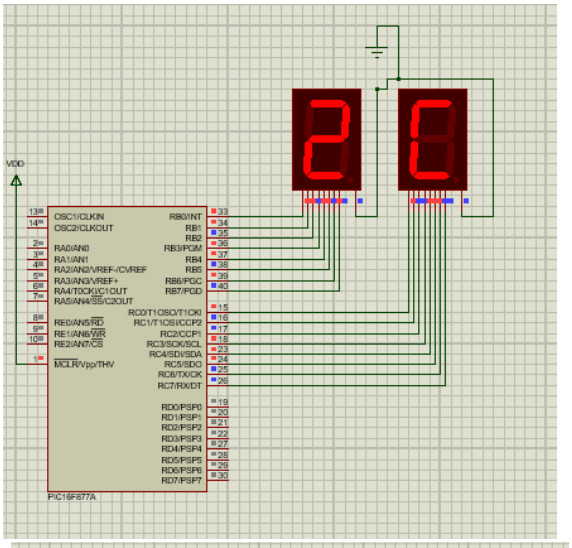


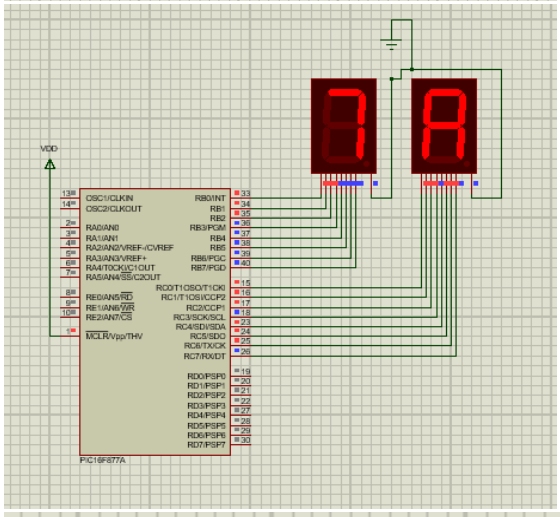
Step 12: Connect all the components as shown below

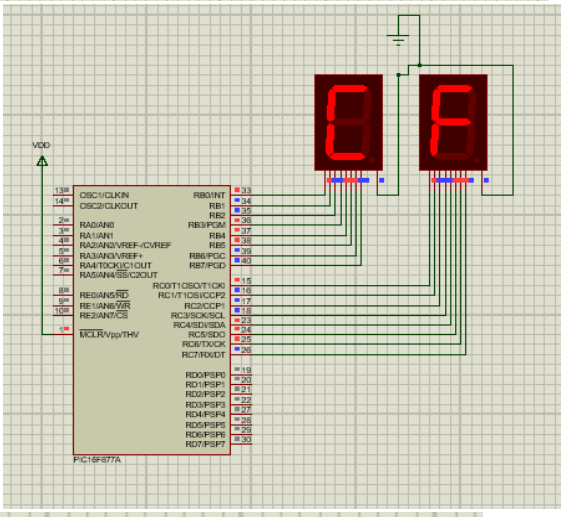


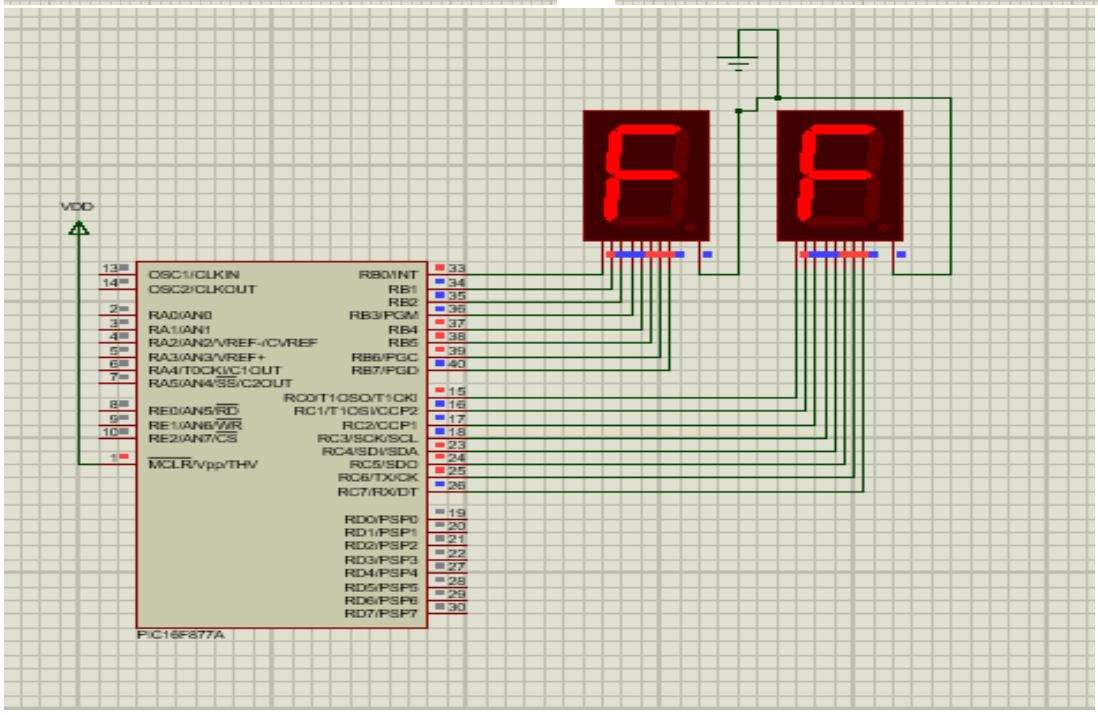
RESULT:


0 0
VDD
PIC16F877A


2 C
VDD
PIC16F877A


7 A
VDD
PIC16F877A


C F
VDD
PIC16F877A


F F
VDD
OSC1/CLKIN
OSC2/CLKOUT
RA0/AN0
RA1/AN1
RA2/AN2/VREF-/CVREF
RA3/AN3/VREF+
RA4/T0CKI/C1OUT
RA5/AN4/SS/C2OUT
RE0/AN5/RD
RE1/AN6/WR
RE2/AN7/CS
MCLR/Vpp/THV
RB0/INT
RB1
RB2
RB3/PGM
RB4
RB5
RB6/PGC
RB7/PGD
RC0/T1OSO/T1CKI
RC1/T1OSI/CCP2
RC2/CCP1
RC3/SCK/SCL
RC4/SDI/SDA
RC5/SDO
RC6/TX/CK
RC7/RX/DT
RD0/PSP0
RD1/PSP1
RD2/PSP2
RD3/PSP3
RD4/PSP4
RD5/PSP5
RD6/PSP6
RD7/PSP7
PIC16F877A