ECA14 – Embedded System

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Experiment no -01

Study of Proteus and Keil Micro Vision

Aim: To study the working procedures of Proteus and Keil Micro vision softwares.

Keil Micro Vision is a free software which solves many of the main points for an embedded program developer. This software is an integrated development environment (IDE), which integrated a text editor to write programs, a compiler and it will convert your source code to hex files too. µVision4 introduces a flexible window management system, enabling us to drag and drop individual windows anywhere on the visual surface including support for Multiple Monitors.

KEIL PROCEDURE:

1. Open the software, Click on project and open new version project.
2. Create a new project file
3. Enter AT89C51
4. Click NO
5. Click [Ctrl +N] and Type the code
6. Open project and click Build target
7. Open Build target and open source file and ADD, CLOSE
8. Click build target
9. Next debug start and stop
10. Open peripherals and select port 2
11. Now run the program in Debug
12. Open project and click optional properties and in that give output as hex file.
13. Create hex file.

PROTEUS PROCEDURE:

- Open proteus by clicking run as administrator.
- Open new project and enter the file name.
- Click next, next, next and finish.
- Click P symbol and search keyword and place the required components
- Now connect the components as required
- Give input to AT89C51 as HEX file.
- Start the simulation process

Result: Thus the Proteus and Keil Micro vision softwares were studied.

Experiment 02

BLINKING OF LED USING 8051 MICROCONTROLLER USING PROTEUS

AIM:
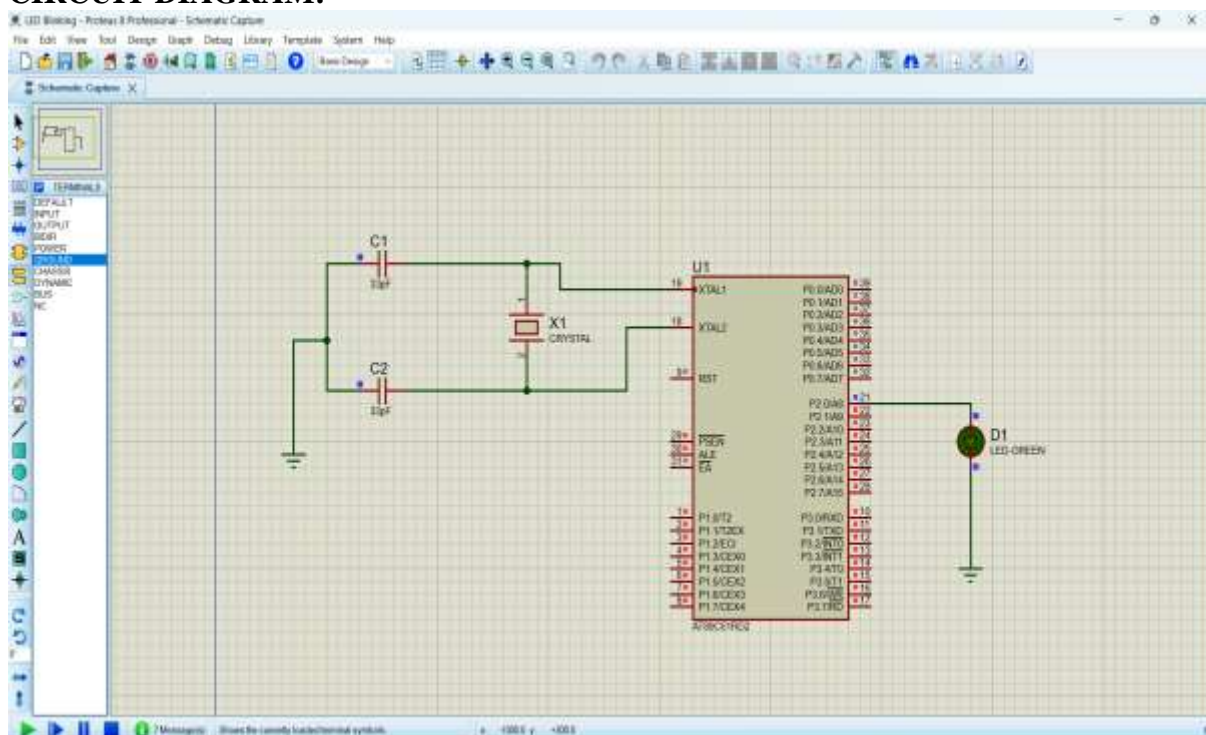   To Write an assembly language program to LED blink using 8051

SOFTWARES REQUIRED:
   - Proteus software

PROGRAM
```
        ORG 0000H
    UP: SETB P2.0
        ACALL DELAY
        CLR P2.0
        ACALL DELAY
        SJMP UP
DELAY: MOV R4,#35
    H1:MOV R3,#255
    H2:DJNZ R3,H2
        DJNZ R4,H1
        RET
        END
```

CIRCUIT DIAGRAM:

RESULT

 Thus the program has been successfully verified and executed.

Experiment 3

GENERATION OF SQUARE WAVE USING PROTEUS

AIM:

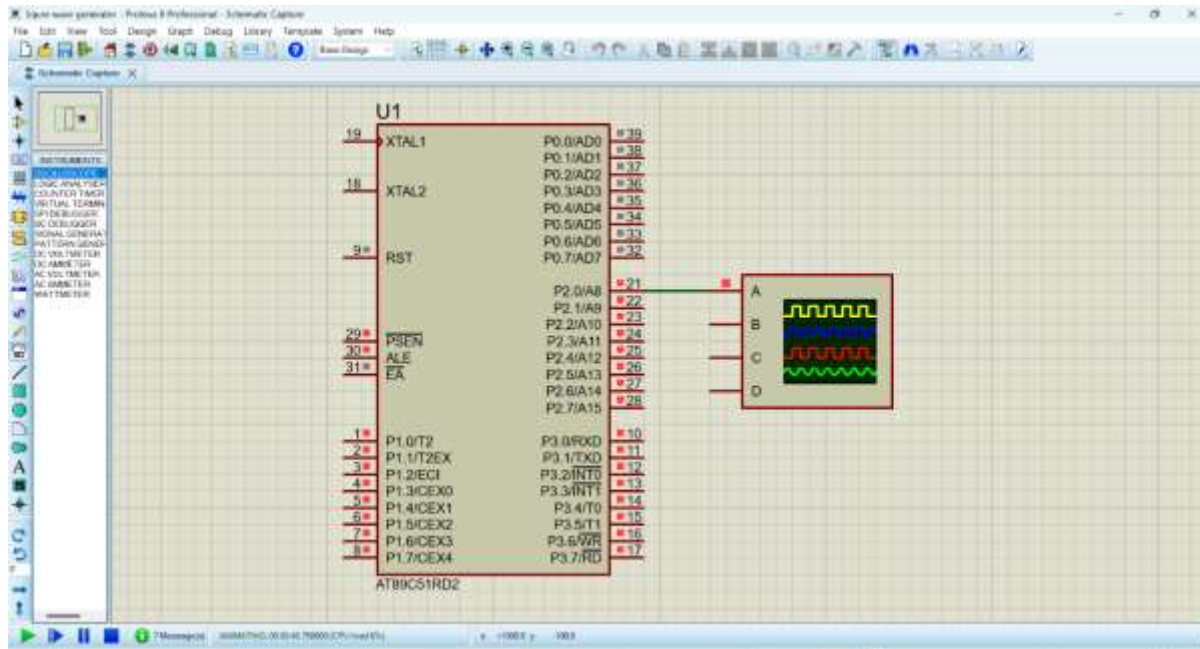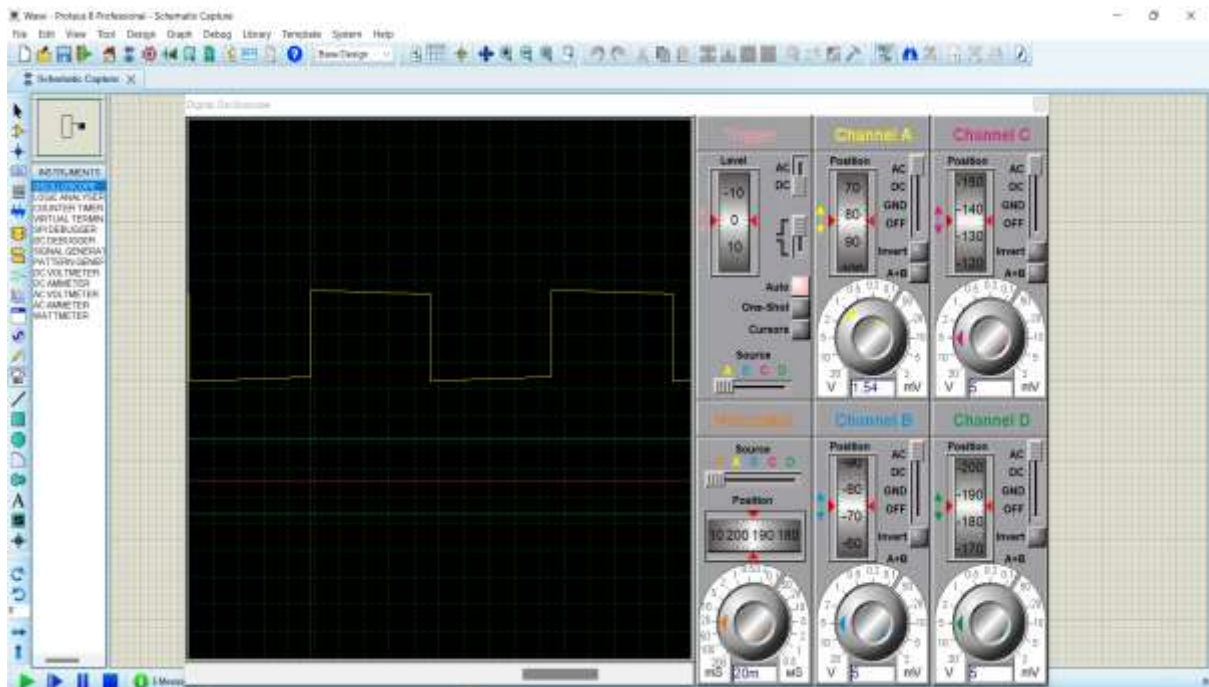Write an assembly language program to Generate square wave using 8051.

SOFTWARE REQUIRED:

- Proteus 8 software.

PROGRAM

```
        ORG 0000H
    UP: SETB P2.0
        ACALL DELAY
        CLR P2.0
        ACALL DELAY
        SJMP UP
DELAY: MOV R4,#35
    H1:MOV R3,#255
    H2:DJNZ R3,H2
        DJNZ R4,H1
        RET
        END
```

CIRCUIT DIAGRAM:

OUTPUT:

RESULT:

Thus the program has been successfully verified and executed.

Experiment 4

FADE IN FADE OUT OF LED USING 8051 USING PROTEUS

AIM:

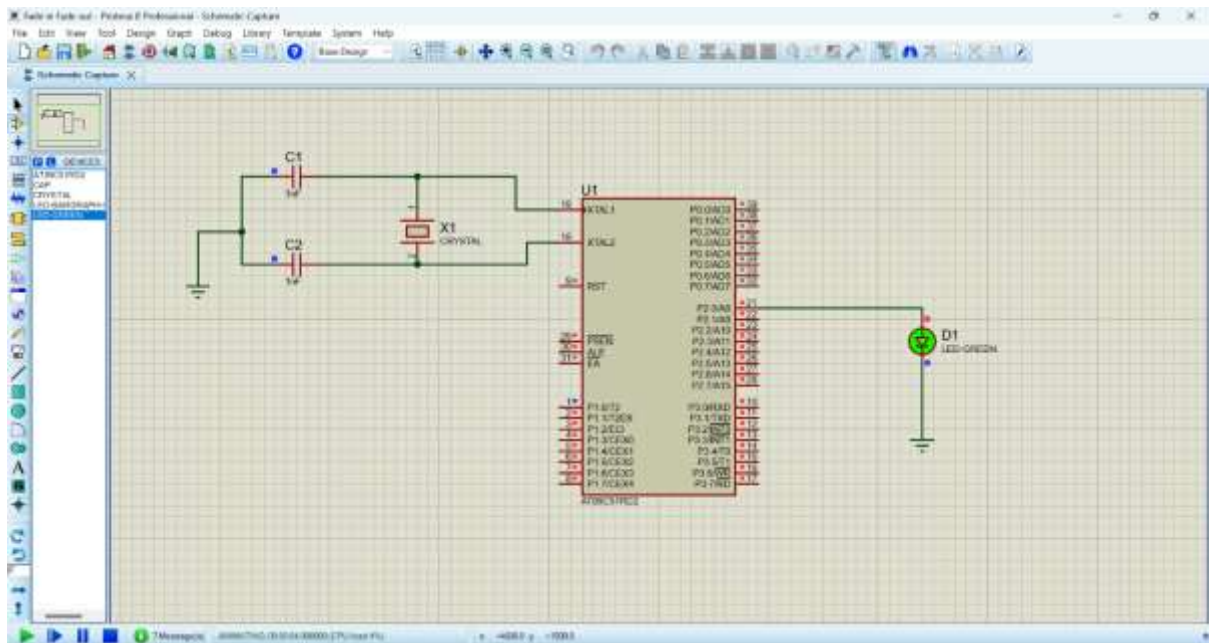Write an assembly language program for Fade in Fade out of LED Using 8051 using Keil and Proteus

SOFTWARE REQUIRED:

- Proteus 8 software.

PROGRAM:

```
#include <REGX52.h>
delay(unsigned int y)
{
   unsigned int i,j;
for(i=0;i<y;i++)
{
   for(j=0;j<1275;j++){}
}
}
main()
{
   while(1)
{
     delay(100);
     P1_0 = 0;
     delay(100);
     P1_0 = 1;
   }
}
```

CIRCUIT DIAGRAM:

RESULT:

Thus the program has been successfully verified and executed.

Experiment 5

STEPPER MOTOR USING 8051 USING PROTEUS

AIM:

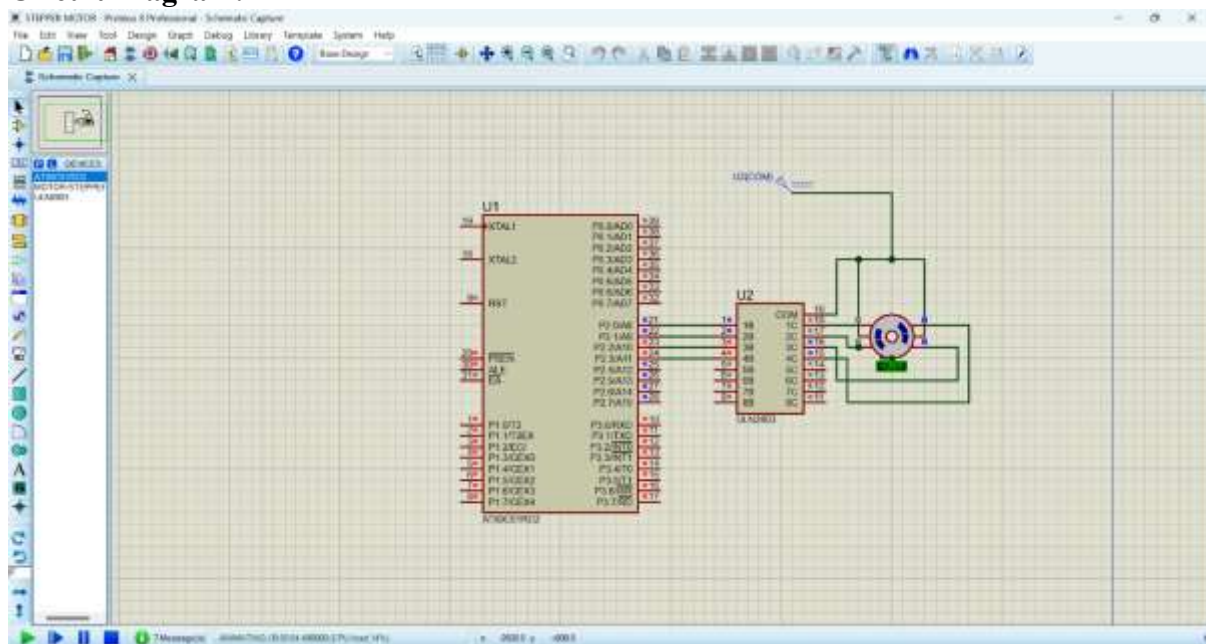Write an assembly language program for Stepper Motor Using 8051 using Keil and Proteus

SOFTWARE REQUIRED:

- Proteus 8 software.

PROGRAM:

```
ORG 0000H
UP: MOV P2,#09H
ACALL DELAY
MOV P2,#0CH
ACALL DELAY
MOV P2,#06H
ACALL DELAY
MOV P2,#03H
ACALL DELAY
SJMP UP
DELAY:MOV R4,#18
H1:MOV R3,#255
H2:DJNZ R3,H2
DJNZ R4,H1
RET
END
```

Circuit Diagram:

RESULT:

Thus the program has been successfully verified and executed.

Experiment 6

INTERFACING OF RELAY USING 8051 USING PROTEUS

AIM:

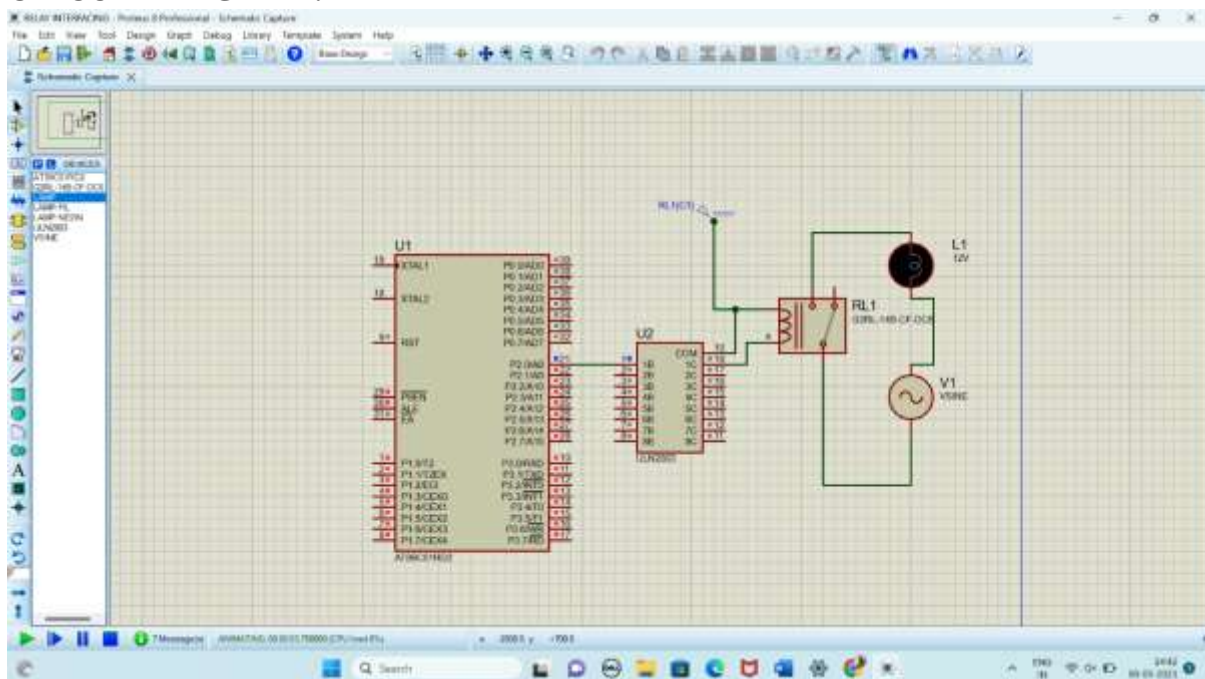Write an assembly language program for Interfacing of Relay Using 8051 using Keil and

Proteus

SOFTWARE REQUIRED:

- Proteus 8 software.

PROGRAM:

```
ORG 0000H
UP:SETB P2.0
ACALL DELAY
CLR P2.0
ACALL DELAY
SJMP UP
DELAY:MOV R4,#18
H1:MOV R3,#255
H2:DJNZ R3,H2
DJNZ R4,H1
RET
END
```

CIRCUIT DIAGRAM:

RESULT:

Thus the program has been successfully verified and executed.

Experiment 7

LED TOGGLE USING 8051 USING PROTEUS

AIM:

Write an assembly language program for LED Toggle Using 8051 using Keil and Proteus

SOFTWARE REQUIRED:
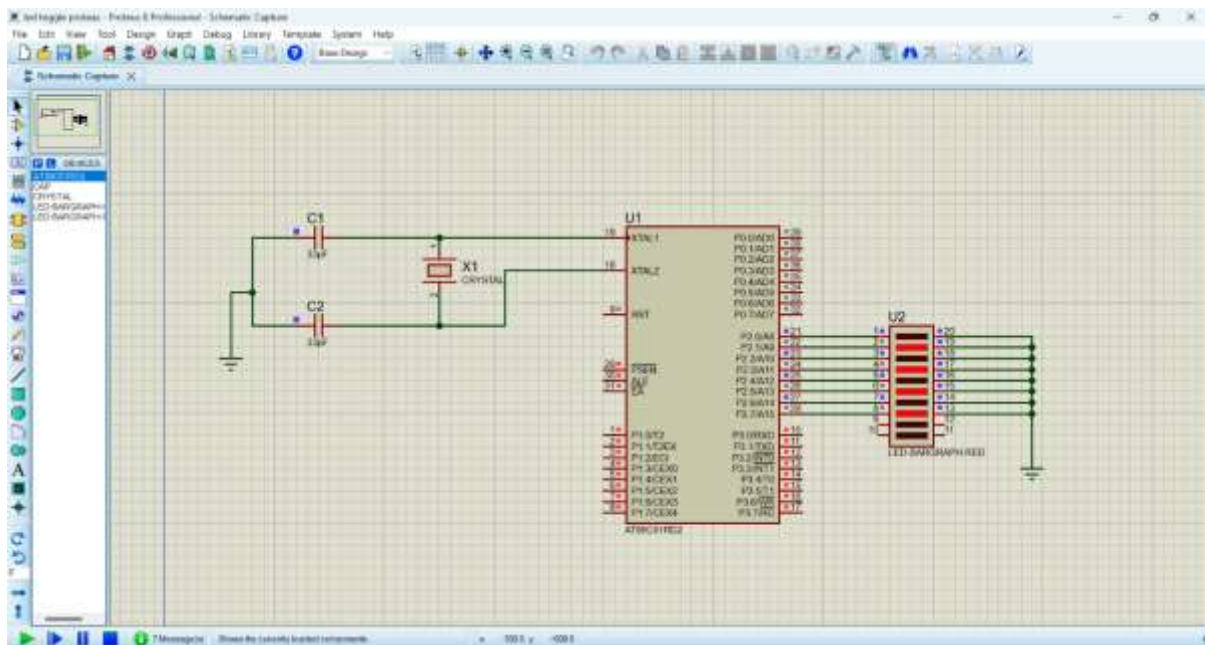
- Proteus 8 software.

PROGRAM:

```
ORG 0000H
UP: MOV P2,#55H
ACALL DELAY
MOV P2,#0AAH
ACALL DELAY
SJMP UP

DELAY:MOV R4,#10
H1:MOV R3,#255
H2:DJNZ R3,H2
DJNZ R4,H1
RET
END
```

CIRCUIT DIAGRAM:

RESULT:

Thus the program has been successfully verified and executed.

Experiment 8

7 SEGMENT DISPLAY USING 8051 USING PROTEUS

AIM:

Write an assembly language program for 7 Segment Display Using 8051 using Keil and
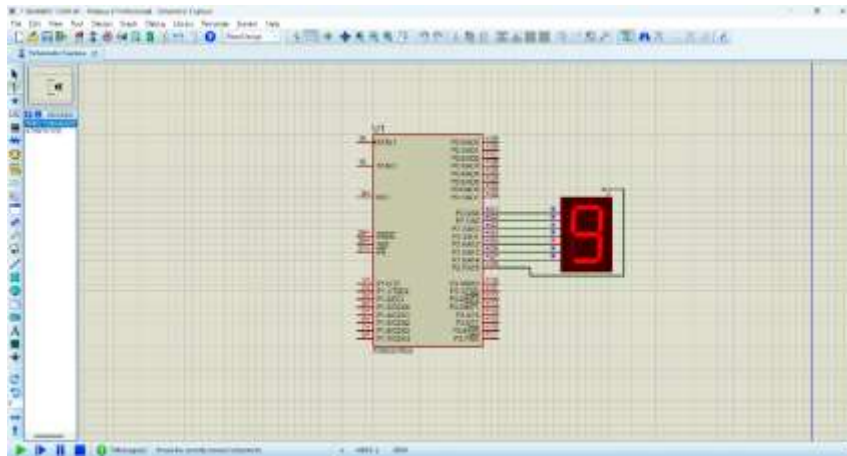
Proteus

SOFTWARE REQUIRED:

- Proteus 8 software.

PROGRAM:

```
ORG 000H
UP:MOV P2,#0C0H
ACALL DELAY
MOV P2,#0F9H
ACALL DELAY
MOV P2,#0A4H
ACALL DELAY
MOV P2,#0B0H
ACALL DELAY
MOV P2,#99H
ACALL DELAY
MOV P2,#92H
ACALL DELAY
MOV P2,#82H
ACALL DELAY
MOV P2,#0F8H
ACALL DELAY
MOV P2, #80H
ACALL DELAY
MOV P2,#90H
ACALL DELAY

DELAY: MOV R5,#10
H1:MOV R4,#180
H2:MOV R3,#255
H3:DJNZ R3,H3
DJNZ R4,H2
DJNZ R5,H1
RET
END
```

CIRCUIT DIAGRAM:

RESULT:

   Thus the program has been successfully verified and executed.

Experiment 9

LED CHASER USING 8051 USING PROTEUS

AIM:

Write an assembly language program for LED Chaser Using 8051 using Keil and Proteus
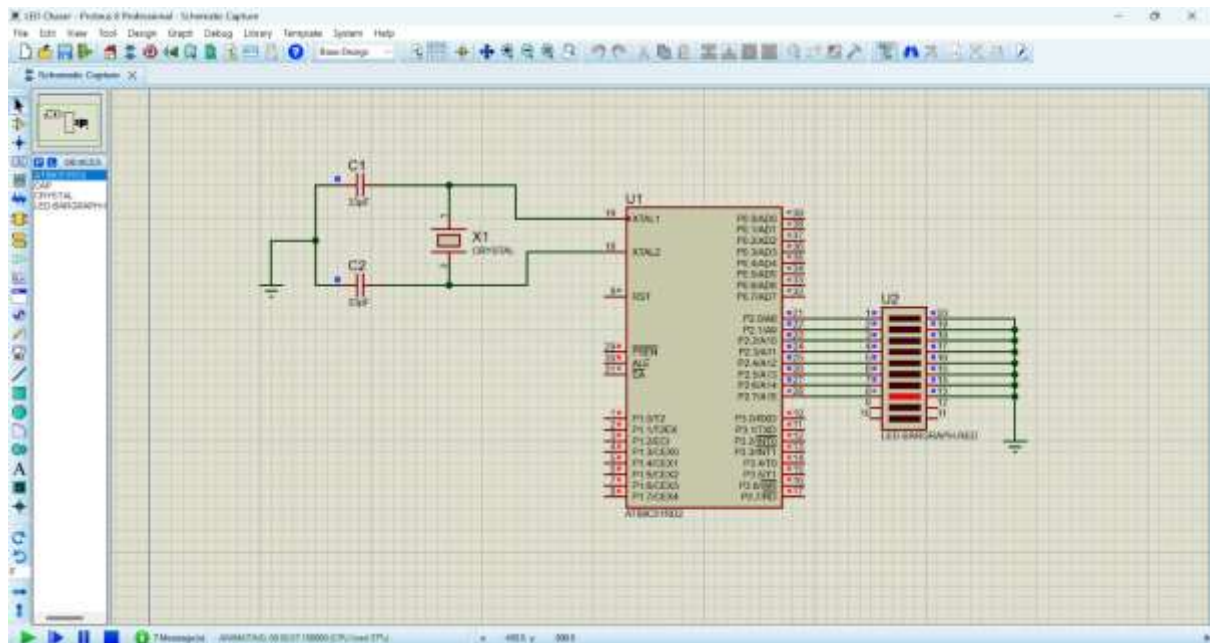
SOFTWARE REQUIRED:

- Proteus 8 software.

PROGRAM:

```
ORG 0000H
UP: MOV P2,#01H
ACALL DELAY
MOV P2,#02H
ACALL DELAY
MOV P2,#04H
ACALL DELAY
MOV P2,#08H
ACALL DELAY
MOV P2,#10H
ACALL DELAY
MOV P2,#20H
ACALL DELAY
MOV P2,#40H
ACALL DELAY
MOV P2,#80H
ACALL DELAY
SJMP UP

DELAY: MOV R4,#255
H1: DJNZ R4,H1
RET
END
```

CIRCUIT DIAGRAM:

RESULT:

Thus the program has been successfully verified and executed.