

Expt2:

2a. Configure timer control registers of 8051 and develop a program to generate given time delay.

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Hardware Circuit:-

★ Delay calculations:-

Crystal Frequency: 11.0592 MHz
 \therefore Clock frequency $f = \frac{11.0592}{12} = 0.9216 \text{ MHz}$
 \therefore Time period of clock (T) = $1/f = 1/0.9216 \text{ MHz}$
 $\therefore T = 1.085 \text{ Msec}$
 To get delay of specific time (say 1 sec):
 The loop should be executed n times

$$n = \frac{\text{delay time in msec}}{\text{clock time in Msec}}$$

$$\therefore n = \frac{1000 \text{ msec}}{1.085 \text{ Msec}} = 921.658$$
 Data to be loaded in timer:

$$\text{Data} = \text{FFFF} - 921.653$$

$$= 65536 - 921.653 = 64614.34$$

$$= \text{FC5H}$$
 Set TL = 65H and TH = FCH

ASSIGNMENT :Show the calculations of delay using Timer for 3 secs

CODE:

```
#include<reg51.h>

void delay(void);

void main(void)
{
    while(1)
    {
        P0=0xff;

        delay();

        P0=0x00;

        delay();
    }
}

void delay()
{
    TMOD=0x00;

    TL0=0x65;

    TH0=0xfc;

    TR0=1;

    while(TF0==1);

    TR0=0;

    TF0=0;
}
```

Screen shot:

1)

Screen shot:

2)

Conclusion: