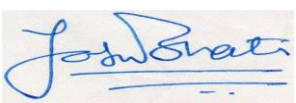
Q1)

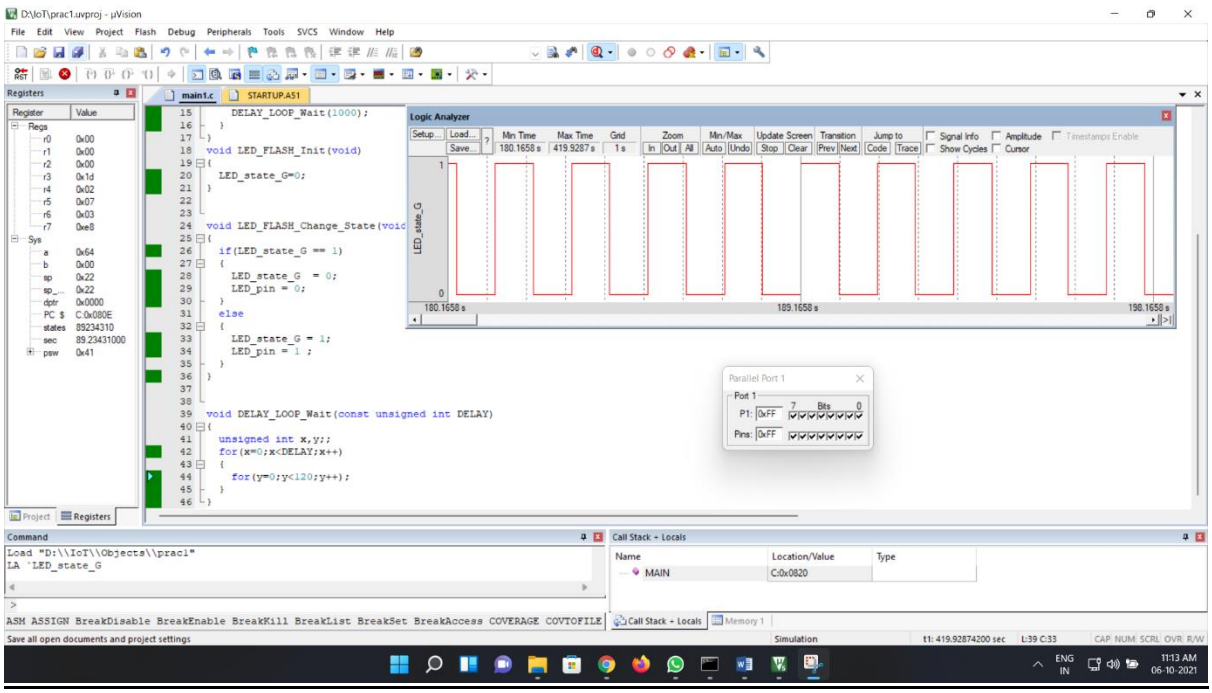
Code:

```
#include <reg52.h>
sbit LED_pin = P1^2;

bit LED_state_G;
void LED_FLASH_Init(void);
void LED_FLASH_Change_State(void);
void DELAY_LOOP_Wait(const unsigned int);

void main(void)
{
	LED_FLASH_Init();
	while(1)
	{
		LED_FLASH_Change_State();
		DELAY_LOOP_Wait(1000);
	}
}
void LED_FLASH_Init(void)
{
	LED_state_G=0;
}


void LED_FLASH_Change_State(void)
{
	if(LED_state_G == 1)
	{
		LED_state_G  = 0;
		LED_pin = 0;
```



```
        }
        else
        {
                LED_state_G = 1;
                LED_pin = 1 ;
        }
}


void DELAY_LOOP_Wait(const unsigned int DELAY)
{
        unsigned int x,y;;
        for(x=0;x<DELAY;x++)
        {
                for(y=0;y<120;y++);
        }
}
```

Output:



All the functions used in the program are explained:

LED FLASH Change State()

Change the state of an LED (or pluses a buzzer , etc) on a specified port pin

must call at twice the required flash rateL thus, for 1 Hz

flash (on for 1 seconds, off for 1 seconds),

LED_FLASH_Init()

Prepare for LED_change_state

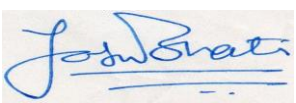
Delay_loop_wait()

Delay duration varies with parameter.

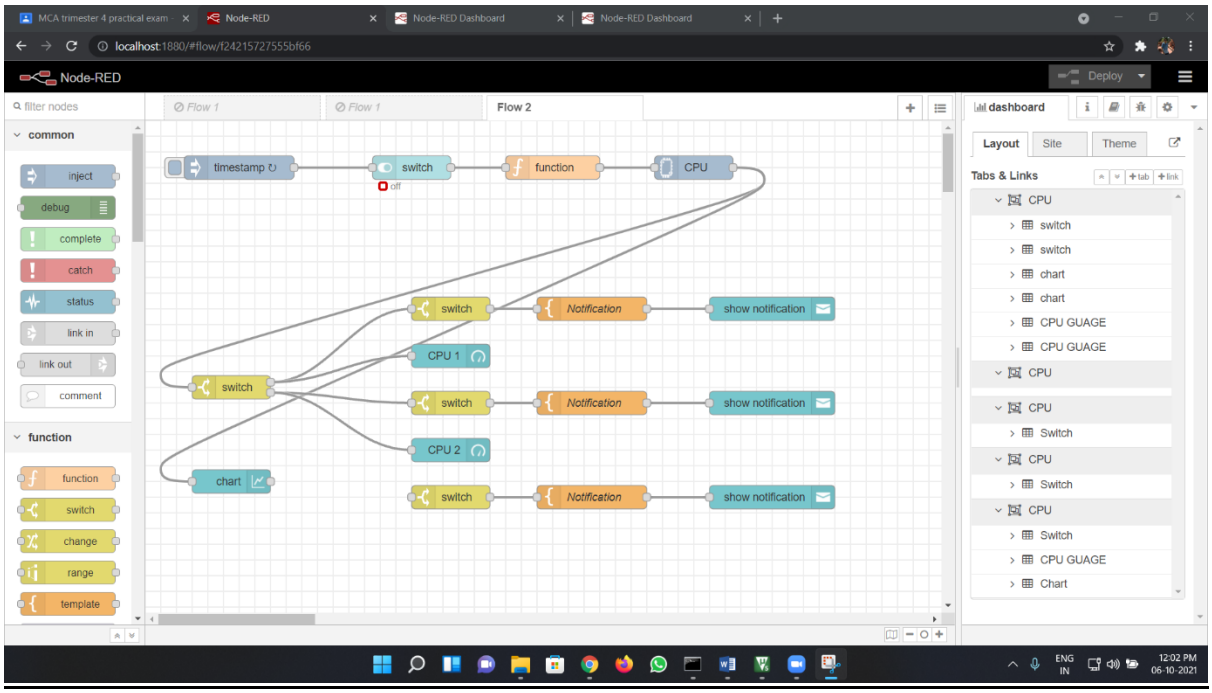
Parameter is, 'roughly',the delay, in milliseconds,

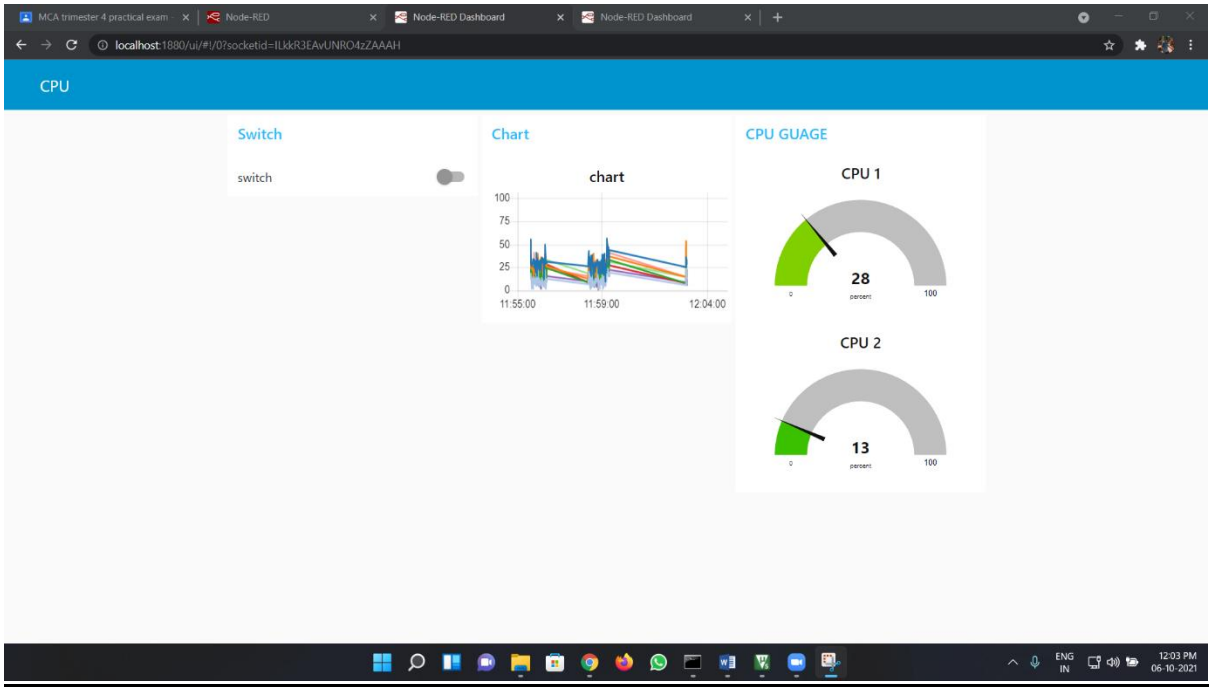
on 12MHz 8051(12 osc cycles)

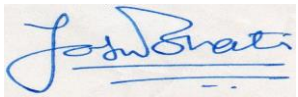
you need to adjust the timing for your application

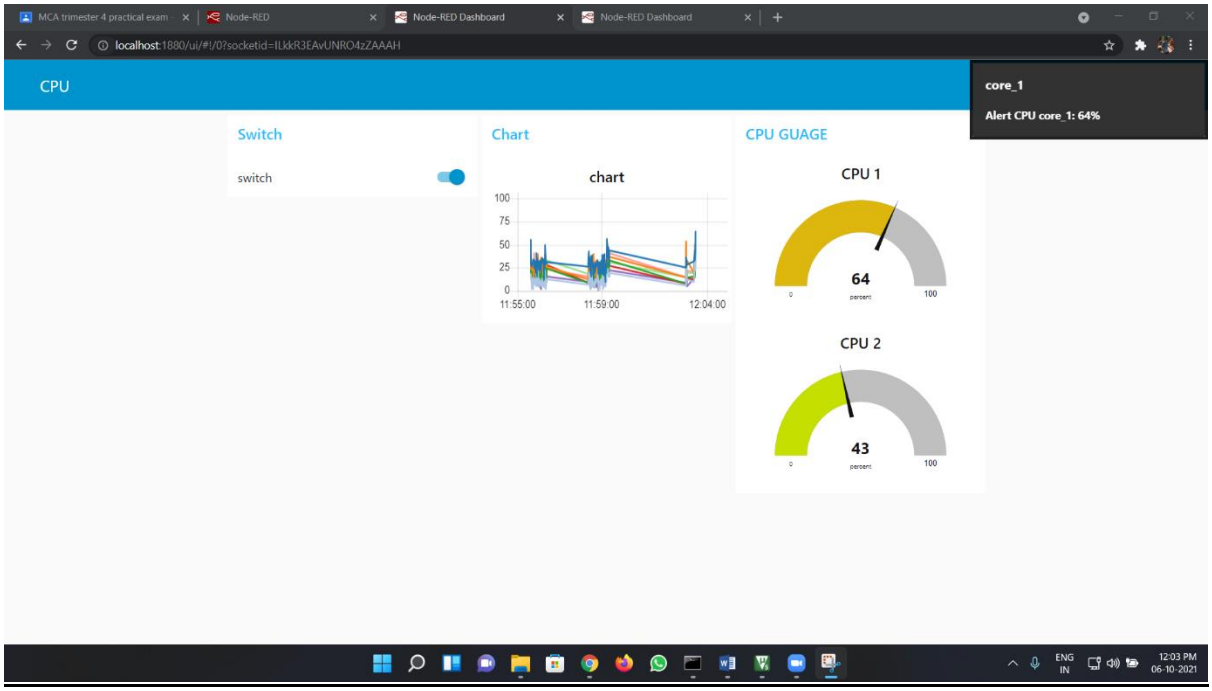


Q2)


Node-RED
Deploy
Flow 2
timestamp
switch
function
CPU
Notification
show notification
CPU 1
CPU 2
chart
dashboard
Layout
Site
Theme
Tabs & Links


CPU
Switch
switch
Chart
chart
CPU GUAGE
CPU 1
28
CPU 2
13




MCA trimester 4 practical exam
Node-RED
Node-RED Dashboard
Node-RED Dashboard
localhost:1880/ui/#!/0?socketid=ILkkR3EAvUNRO4zZAAAH
CPU
core_1
Alert CPU core_1: 64%
Switch
switch
Chart
chart
100
75
50
25
0
11:55:00
11:59:00
12:04:00
CPU GUAGE
CPU 1
64
percent
0
100
CPU 2
43
percent
0
100
ENG
IN
12:03 PM
06-10-2021