KLE TECH.

KLE Technological University

Creating Value
Leveraging Knowledge

REAL TIME OPERATING SYSTEM- (22EECP302)

YEAR 2023-2024

REVIEW - I

Team members

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Problem Statement:- Write a C code to demonstrate the concept of task switching

1st Task – Toggle LEDs.

2nd Task- Display counter values on seven segment display.

Under Guidance of

Prof. S.M.Hunagund

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Staff Signature

CODE:-

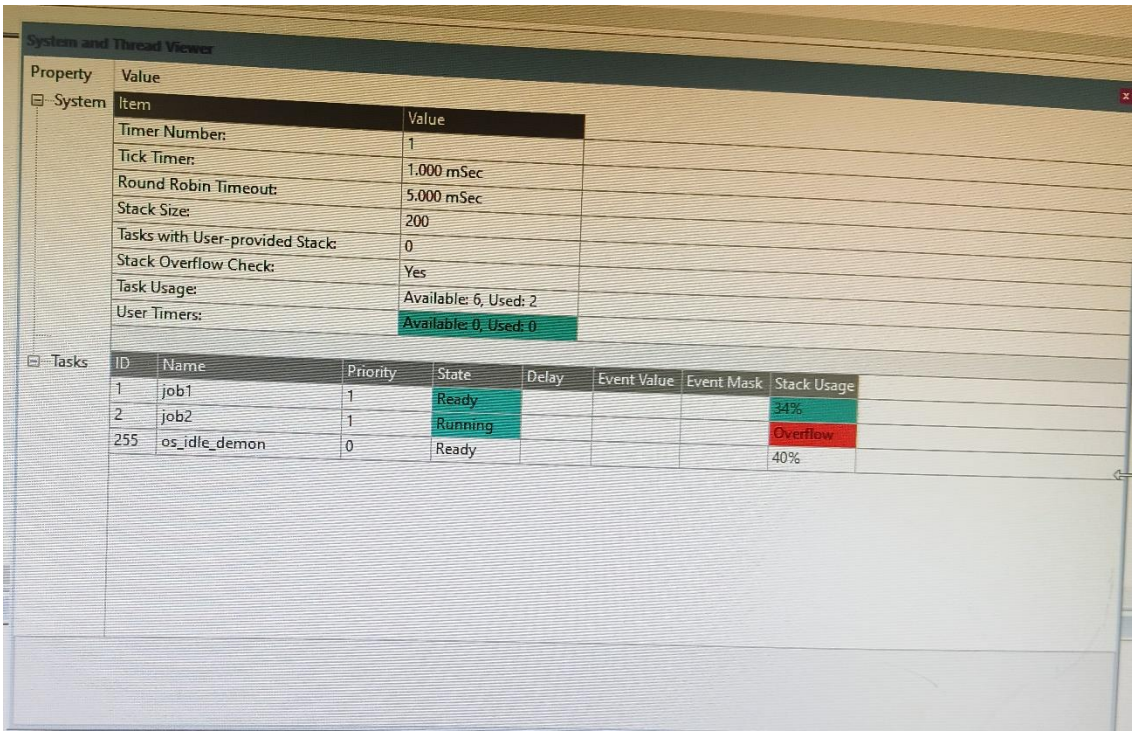
```
#include <lpc21xx.h>

#include <rtl.h>

#include<stdio.h>

void sev(void);

void delay(unsigned int);

unsigned int i;

unsigned int Disp[10] = {0x003F0000, 0x00060000, 0x005B0000,
0x004F0000, 0x00660000,

                0x006D0000, 0x007D0000, 0x00070000, 0x007F0000,
0x006F0000};


__task void job1(void);

__task void job2(void);


void delay(unsigned int j) {
```

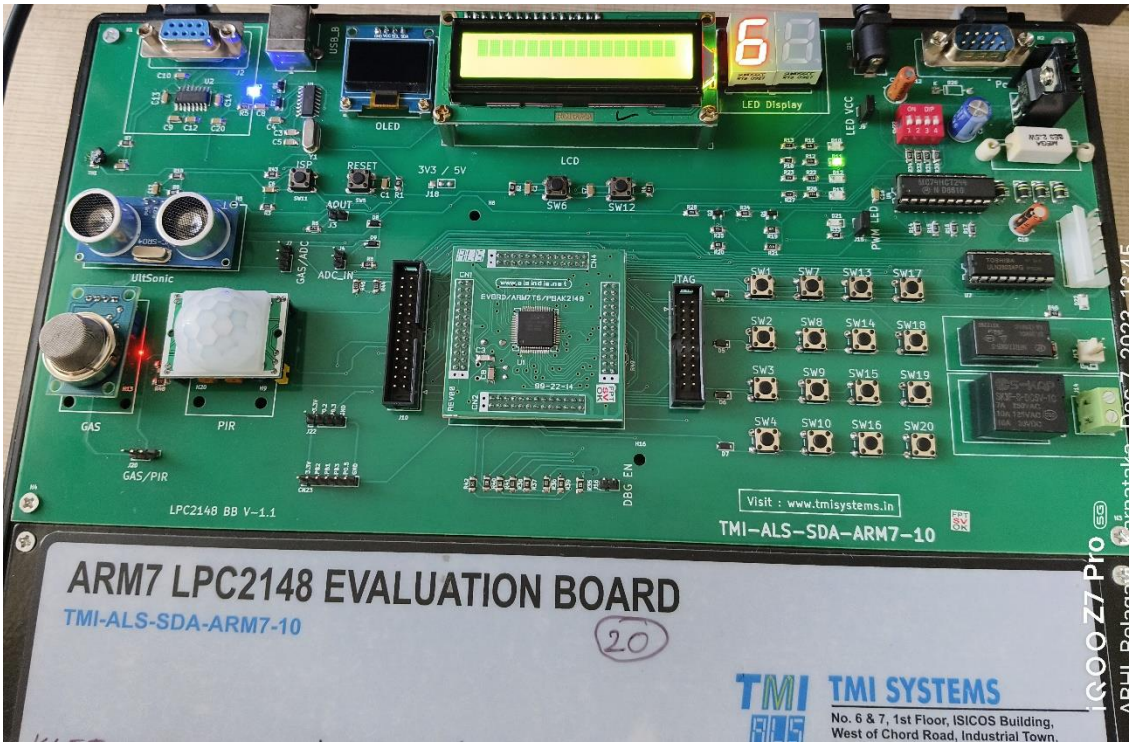
```
    unsigned int i;
    for (i = 0; i < j; i++);
}

__task void job1(void) {
    os_tsk_create(job2, 0);
    while (1) {
        sev();
    }
}

__task void job2(void) {
    PINSEL0 = 0x00000000;
    IODIR0 |= 0x0000F000;

    while (1) {
        IOSET0 = 0x00008000;
        delay(650000);
        IOCLR0 = 0x0000F000;
```

```
        sev();


        IOSET0 = 0x00004000;
        delay(650000);
        IOCLR0 = 0x0000F000;
        sev();


        IOSET0 = 0x00002000;
        delay(650000);
        IOCLR0 = 0x0000F000;
        sev();


        IOSET0 = 0x00001000;
        delay(650000);
        IOCLR0 = 0x0000F000;
        sev();
    }
}
```

```
void sev(void) {
    IODIR0 |= 0x0FF0000;
    IOSET0 |= 0xF0000000;

    for (i = 0; i < 10; i++)
        {
        IOSET0 |= Disp[i];
        delay(1000000);
        IOCLR0 |= 0x00FF0000;
    }
}

int main(void) {
    os_sys_init(job1);
    while (1);
}
```

OUTPUT :-


System and Thread Viewer
Property
Value
System
Item
Value
Timer Number:
1
Tick Timer:
1.000 mSec
Round Robin Timeout:
5.000 mSec
Stack Size:
200
Tasks with User-provided Stack:
0
Stack Overflow Check:
Yes
Task Usage:
Available: 6, Used: 2
User Timers:
Available: 0, Used: 0
Tasks
ID
Name
Priority
State
Delay
Event Value
Event Mask
Stack Usage
1
job1
1
Ready
34%
2
job2
1
Running
Overflow
255
os_idle_demon
0
Ready
40%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