



## RTOS Review 1

### Team Number:- 12

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**Statement:** Roundrobin--- write a C program to demonstrate the concept of ROUND ROBIN task switching mechanisms for 3 tasks.

1st Task- seven segment-- 0 to 9

2nd Task- blink LED

3rd Task- UART 11 to 20 respectively.

### Code:

```
#include <lpc21xx.h>
#include <rtl.h>
#include <stdio.h>

void sev(void);
void delay(unsigned int);
void delay1(void);
void UART(void);
void serial(void);
unsigned int counter1, i;
unsigned char *ptr;
char arri[20];
unsigned char arr[]="11 12 13 14 15 16 17 18 19 20\n";
unsigned int Disp[10] = {0X003F0000, 0X00060000, 0X005B0000, 0X004F0000, 0X00660000,
                        0X006D0000, 0X007D0000, 0X00070000, 0X007F0000, 0X006F0000};

__task void job1(void);
__task void job2(void);
__task void job3(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) {
    os_tsk_create(job3, 2);
    PINSEL0 = 0x00000000; //keep or replace
    IODIR0 = 0x000F0000; // Configure P0.16 to P0.19 as output
// all LED's turned OFF.
    while(1)
    {
        IOCLR0=0x000F0000;
        delay1();
        IOSET0=0x000F0000;
        delay1();
        job3();
    }
}

__task void job3(void) {
while(1)
{
    UART();
//sev();
//job1();
}
}
void delay1(void) {
    unsigned long int j;
    for (j = 0; j < 650000; j++);
}

void sev(void) {
/*****delay try*/
    IODIR0 = 0xf0ff0000;
    IOSET0 = 0xf0000000;
    for (i = 0; i < 10; i++) {
        IOSET0 = Disp[i]; //|
        delay1();
    }
    delay1();
    IOCLR0 = 0x00ff0000;
}
job2();
```



```
for(i=0;i<65000;i++);
}

void UART(void)
{
    while(1)
    {
        serial();
        ptr=arr;
        while(*ptr!='\0')
        {
            U0THR=*ptr++;
            while(!(U0LSR&0X20)==0X20);
            for(i=0;i<=600;i++);
            delay1();
        }
        for(i=0;i<=60000;i++);
        sev();
    }
}

void serial()
{
    PINSEL0 = 0x00000005;
    U0LCR = 0x83;
    U0DLL = 0x61;
    U0LCR = 0x03;
    U0IER = 0x01;
}

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

The image shows a green printed circuit board (PCB) for an ARM7 LPC2148 evaluation. Key components include a central microcontroller chip, a yellow LED display showing '99', a blue LCD screen, and various peripheral chips like the IPC2148 BB V-1.1. The board is populated with numerous surface-mount components, including resistors, capacitors, and integrated circuits. A USB cable is connected to the board. The board is labeled with 'ARM7 LPC2148 EVALUATION BOARD' and 'TMI-ALS-SDA-ARM7-10'. A handwritten note at the bottom left reads 'KLE TECH DTM656GT/EC/223/01/06/19/10(25)'. The TMI Systems logo and contact information are visible at the bottom right.



