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DR. M. S. SHESHGIRI COLLEGE OF ENGINEERING AND TECHNOLOGY

**Belagavi  
Campus**

Department of Electronics and Communication  
Engineering

# RTOS Lab Review Report

## Group-14

Name: Basagouda Patil 02FE21BEC016

Ekata Honnegundi 02FE21BEC033

Neela Saloni 02FE21BEC051

Rakshita Kusanale 02FE21BEC069

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## Problem Statement:

Round robin--write a C program to demonstrate the concept of ROUND ROBIN task switching mechanisms for 3 tasks.

1<sup>st</sup> Task:- Seven segment-- 0 to 9

2<sup>nd</sup> Task:- DC motor clockwise

3<sup>rd</sup> Task:- UART 11 to 20 respectively.

## Code:

```
#include <lpc21xx.h>
#include <rtl.h>
#include <stdio.h>
void sev(void);
void lcd(void);
void cmd(unsigned int);
void data(unsigned int);
void delay(unsigned int);
void delay1(void);
void uart_init(void);
void init_serial(void);
unsigned int counter1, i,k;
char arr1[20];
unsigned char *ptr;
unsigned char arr[] = "11 12 13 14 15 16 17 18 19 20";
unsigned int b;
unsigned int Disp[16]={0x003F0000, 0x00060000, 0x005B0000,
```

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0x004F0000, 0x00660000, 0x006D0000, 0x007D0000, 0x00070000, 0x007F0000,  
0x006F0000};

//unsigned char i

\_\_task void job1 (void)

\_\_task void job2 (void);

\_\_task void job3 (void);

\_\_task void job1 (void)

{

os\_tsk\_create (job2, 0); /\* Create task 2 and mark it as ready \*/

/\* loop forever \*/

while(1)

{

sev()

}

\_\_task void job2 (void)

{

os\_tsk\_create (job3, 0);

IODIR0=0xf0ff0000; // making po.16 to p0.23 and p0.28 to p0.31 output lines

IOSET0=0xf0000000;

for(i=0;i<10;i++)

{

IOSET0 |=Disp[i]

delay1();

delay1();

delay1();

delay1();

//;delay1();//delay1();delay1();delay1();

IOCLR0=0x00ff0000;

sev();

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```
}  
  
}  
  
__task void job3 (void)  
{  
  
    os_tsk_create (job3, 0);  
  
    IOODIR= 0X00000900;  
  
    IOOSET= 0X00000100;  
  
    while(1)  
    {  
  
        IOOCLR = 0x00000100;  
  
        for(k=0;k<1000000;k++);  
  
        IOOSET = 0X00000900;  
  
        for(k=0;k<1000000;k++);  
  
        IOOCLR = 0X00000100;  
  
        for(k=0;k<1000000;k++);  
  
        IOOSET = 0X00000900;  
  
    }  
  
}  
  
void sev(void)  
{  
  
    while (1)  
  
    {  
  
        uart_init();  
  
        ptr = arr;  
  
        while(*ptr != '\0' )  
  
        {  
  
            U0THR = *ptr++;  
  
            while(!(U0LSR & 0x20)==0x20);  
  
            for (b=0; b<=600; b++);  
  
        }  
  
    }  
  
}
```

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```
}  
  
for (b=0; b<=60000; b++);  
  
job3();  
  
}  
  
}  
  
void uart_init(void)  
{  
  
PINSEL0 = 0x00000005;  
  
UOLCR = 0x83;  
  
UODLL = 0x61;  
  
UOLCR = 0x03;  
  
UOIER = 0x01;  
  
}  
  
void delay1(void)  
{  
  
unsigned long int j;  
for(j=0;j<6500000;j++)  
  
}  
  
int main (void)  
{  
  
os_sys_init (job1);  
  
while(1);  
  
}
```

## Implementation and Output:

Property

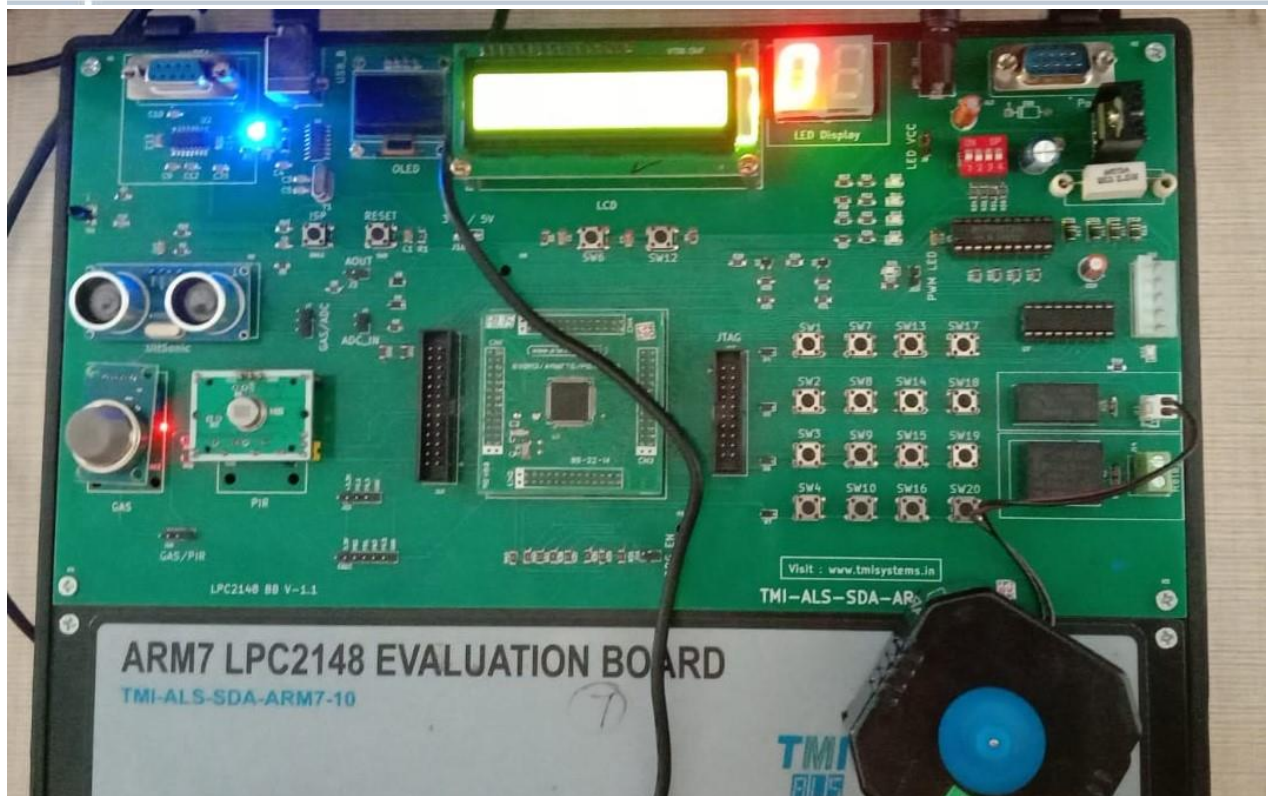
Value

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: 6
User Timers:	Available: 0, Used: 0

Tasks

ID	Name	Priority	State	Delay	Event Value	Event Mask	Stack Usage
1	job1	1	Ready				32%
2	job2	1	Ready				36%
3	job3	1	Ready				32%
4	job3	1	Ready				32%
5	job3	1	Running				Overflow
6	job3	1	Ready				32%
255	os_idle_demon	0	Ready				40%





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