KLE TECHNOLOGICAL UNIVERSITY
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Belagavi Campus
DR. M. S. SHESHGIRI COLLEGE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

RTOS Lab Review Report

Group-14

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Problem Statement:

Write a C program with three tasks, having task 3 waiting for an even from task 2 for a duration and flag bits of 0x000f and 0x0003

Code:

```
#include<rtl.h>

#include<lpc21xx.h>

#include<stdio.h>


OS_TID tsk1, tsk2, tsk3; OS_RESULT

RE1, RE2, RE3;

int cnt1, cnt2, cnt3, i;


__task void job1(void);

__task void job2(void);

__task void job3(void);


__task void job1(void)

{
```

```
os_tsk_prio_self(2); // assign priority to job1 as 2 tsk1 =
os_tsk_self(); // task id os_tsk_create(job2, 1); // create job2
and keep in ready state os_tsk_create(job3, 1); // create job3
and keep in ready state while (1)
{
RE1 = os_evt_wait_and(0x0001, 0x0001); if
(RE1 == OS_R_EVT)
{
for (i = 0; i < 15; i++)
{
cnt1++; for (i = 0; i <
65000; i++); for (i = 0; i <
65000; i++); for (i = 0; i <
65000; i++); for (i = 0; i <
65000; i++);
}
```

```
os_dly_wait(0x03e8);
}
else if (RE1 == OS_R_TMO)
{
for (i = 0; i < 15; i++)
{
cnt3++; for (i = 0; i <
65000; i++); for (i = 0; i <
65000; i++); for (i = 0; i <
65000; i++); for (i = 0; i <
65000; i++);
}
os_dly_wait(0x03e8);
}
}
}

__task void job2(void)
{
```

```
while (1)
{ for (i = 0; i < 15;
i++)
{
cnt2++;
for (i = 0; i < 65000; i++); for
(i = 0; i < 65000; i++); for (i
= 0; i < 65000; i++); for (i =
0; i < 65000; i++);
}
os_dly_wait(0x03e8);



}
}

__task void job3(void)
```

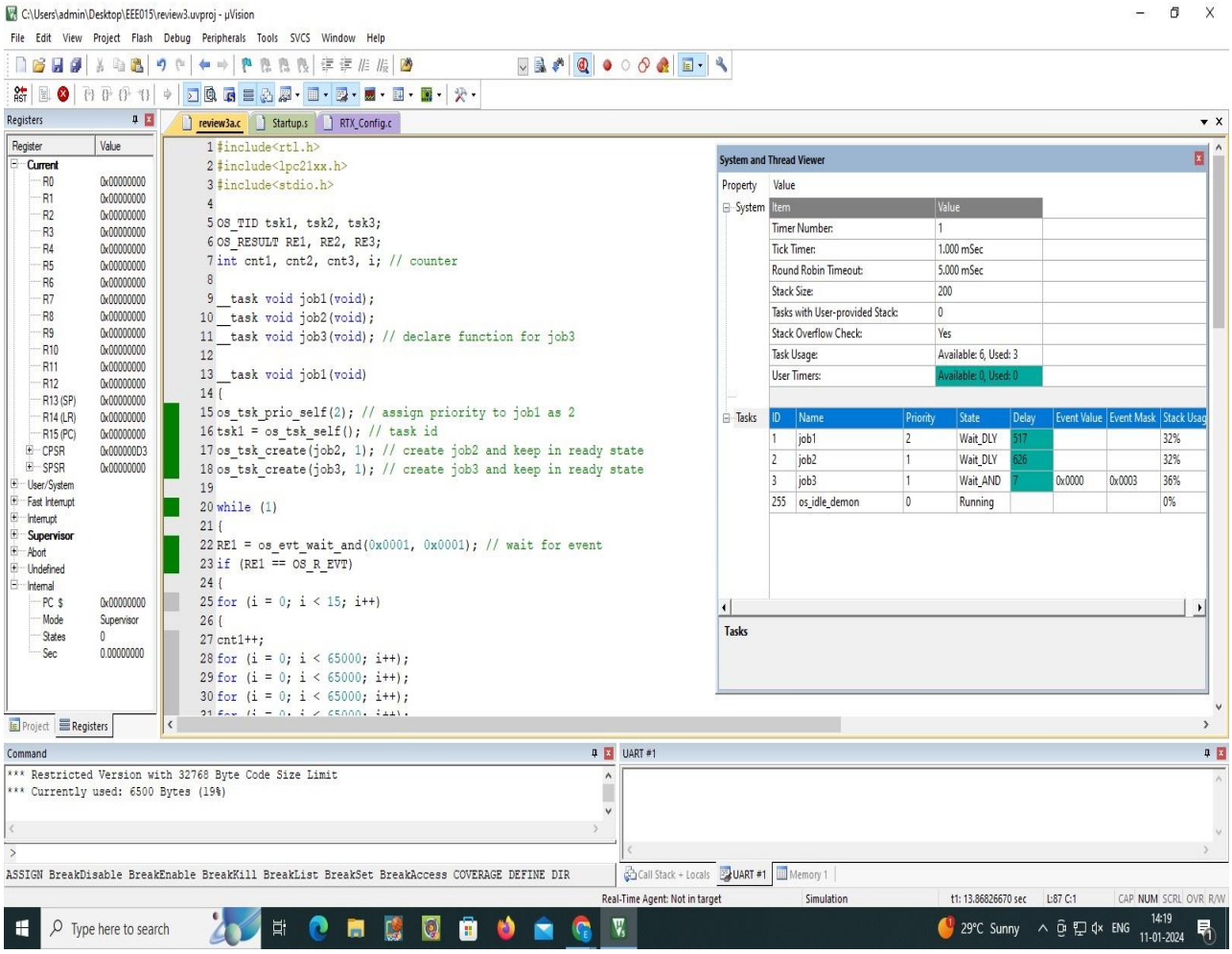
```
{
while (1)
{
RE3 = os_evt_wait_and(0x0003, 0x000f); // Wait for event with flag bits 0x0003
and 0x000f if (RE3 == OS_R_EVT)
{
for (i = 0; i < 65000; i++);
for (i = 0; i < 65000; i++);

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

int main()
{
cnt1 = 0; cnt2 =
0; cnt3 = 0;
```

```
os_sys_init(job1);
while (1)
; }
```

Implementation and Output:


C:\Users\admin\Desktop\EEE015\review3.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
review3a.c
Startup.s
RTX_Config.c
#include<rtl.h>
#include<lpc21xx.h>
#include<stdio.h>
OS_TID tsk1, tsk2, tsk3;
OS_RESULT RE1, RE2, RE3;
int cnt1, cnt2, cnt3, i; // counter
__task void job1(void);
__task void job2(void);
__task void job3(void); // declare function for job3
__task void job1(void)
{
os_tsk_prio_self(2); // assign priority to job1 as 2
tsk1 = os_tsk_self(); // task id
os_tsk_create(job2, 1); // create job2 and keep in ready state
os_tsk_create(job3, 1); // create job3 and keep in ready state
while (1)
{
RE1 = os_evt_wait_and(0x0001, 0x0001); // wait for event
if (RE1 == OS_R_EVT)
{
for (i = 0; i < 15; i++)
{
cnt1++;
for (i = 0; i < 65000; i++);
for (i = 0; i < 65000; i++);
for (i = 0; i < 65000; i++);
System and Thread Viewer
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: 3
User Timers: Available: 0, Used: 0
ID Name Priority State Delay Event Value Event Mask Stack Usag
1 job1 2 Wait_DLY 517 32%
2 job2 1 Wait_DLY 626 32%
3 job3 1 Wait_AND 7 0x0000 0x0003 36%
255 os_idle_demon 0 Running 0%
Tasks
Command
*** Restricted Version with 32768 Byte Code Size Limit
*** Currently used: 6500 Bytes (19%)
UART #1
ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess COVERAGE DEFINE DIR
Call Stack + Locals
UART #1
Memory 1
Real-Time Agent: Not in target
Simulation
t1: 13.86826670 sec
L:87 C:1
Type here to search
29°C Sunny
ENG
14:19
11-01-2024