

**GROUP-13**

**Real Time Operating Systems**

**Review – 03**

| NAME | USN |
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**Problem statement:**

Write a C program with three tasks, having task 3 waiting for an even from task 1 for a duration and flag bits of 0xffff and 0x0002.

**Under the Guidance of**

**Prof. Swati Mavinkattimath Guide Signature** :

**Code:**

#include <rtl.h>

#include <lpc21xx.h>

#include <stdio.h>

OS\_TID tsk1, tsk2, tsk3;

OS\_RESULT RE1, RE2;

int cnt1, cnt2, cnt3, i, j; // counter

\_\_task void job1(void);

\_\_task void job2(void);

\_\_task void job3(void);

\_\_task void job1(void)

{

os\_tsk\_prio\_self(3); // assign priority to job1 as 3

tsk1 = os\_tsk\_self(); // task id

os\_tsk\_create(job2, 2); // create job2 and keep in ready state

while (1)

{

RE1 = os\_evt\_wait\_and(0xffff, 0x0002); // wait for event

if (RE1 == OS\_R\_EVT)

{

for (i = 0; i < 15; i++)

{

cnt1++;

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

}

os\_dly\_wait(1000);

os\_evt\_set(0xffff, tsk2); // set event for task2

}

else if (RE1 == OS\_R\_TMO)

{

for (i = 0; i < 15; i++)

{

cnt3++;

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

}

os\_dly\_wait(1000);

os\_evt\_set(0x0002, tsk2); // set event for task2

}

}

}

\_\_task void job2(void)

{

os\_tsk\_create(job3, 1);

while (1)

{

RE2 = os\_evt\_wait\_and(0xffff, 0x0002); // wait for event

for (i = 0; i < 15; i++)

{

cnt2++;

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

}

os\_dly\_wait(1000);

}

}

\_\_task void job3(void)

{

while (1)

{

RE2 = os\_evt\_wait\_and(0xffff, 0x0002); // wait for event

for (i = 0; i < 15; i++)

{

cnt3++;

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

for (j = 0; j < 65000; j++);

}

os\_dly\_wait(1000);

os\_evt\_set(0x0002, tsk1);

}

}

int main()

{

cnt1 = 0;

cnt2 = 0;

os\_sys\_init(job1);

while (1);

}

**Output:**

