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

GROUP-15

NAME	USN
Aditya Mulimani	02FE21BEC004
Hrishikesh Kamat	02FE21BEC039
Prajwal Hosakoti	02FE21BEC060
Prashant Patil	02FE21BEC062

Problem statement:

Write a C program to demonstrate the concept of ROUND ROBIN task switching mechanisms for 2 tasks.

1st Task- Stepper motor anti- clockwise.

2nd Task- Blink LED with delay of 2secs.

Under the Guidance of

Dr.Swati M

Guide Signature

Department of Electronics and Communication Engineering,
KLE Technological University's Dr. M. S. Sheshgiri College of Engineering and Technology, Belagavi

Code: #include<lpc21xx.h>

#include<rtl.h>

#include<stdio.h>

__task void taskLed(void);

__task void anticlock(void);

void delay(void);

int main(void) {

os_sys_init (taskLed);

while(1)

// Initialize your hardware and RTX here

os_sys_init(taskLed); // Start the RTX kernel with the LED task

}

__task void taskLed(void)

{

os_tsk_create (anticlock, 0);

IODIR0 = 0x000f0000;

IOSET0 = 0x000f0000;

while(1)

{

IOCLR0 = 0x000f0000;

delay();

IOSET0 = 0x000f0000;

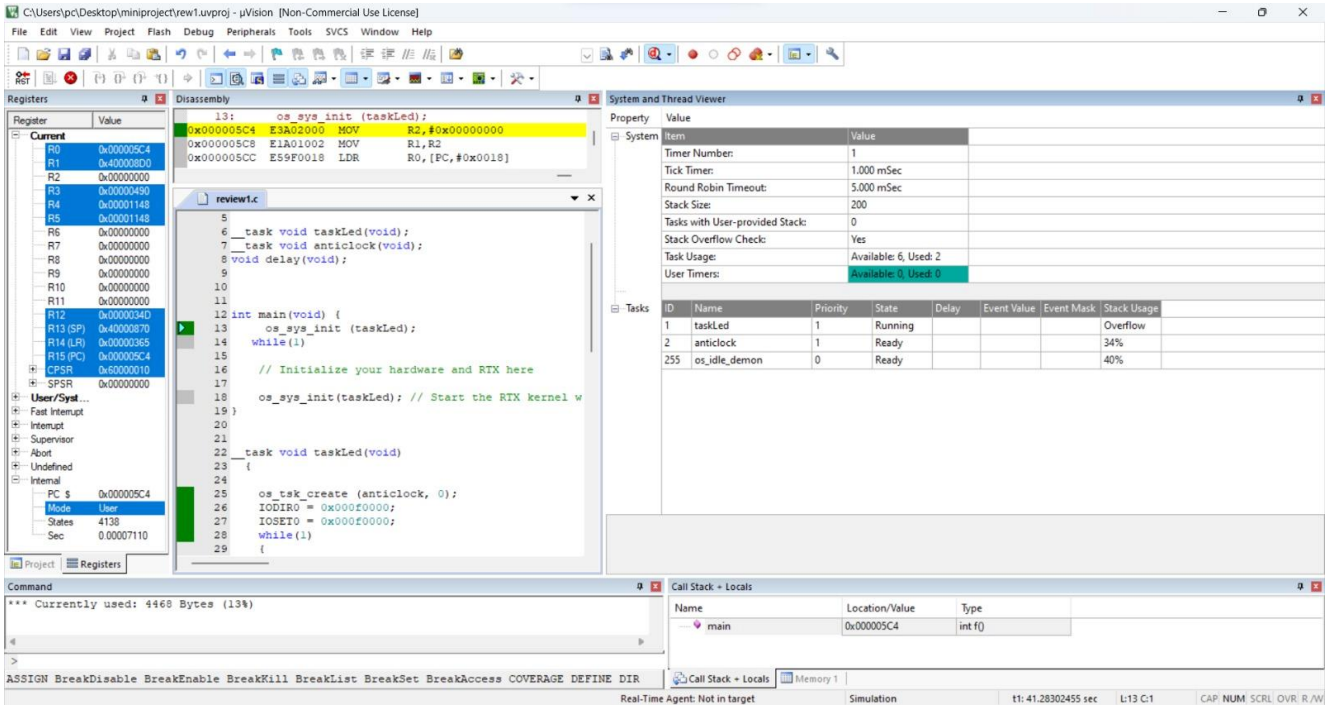
delay();

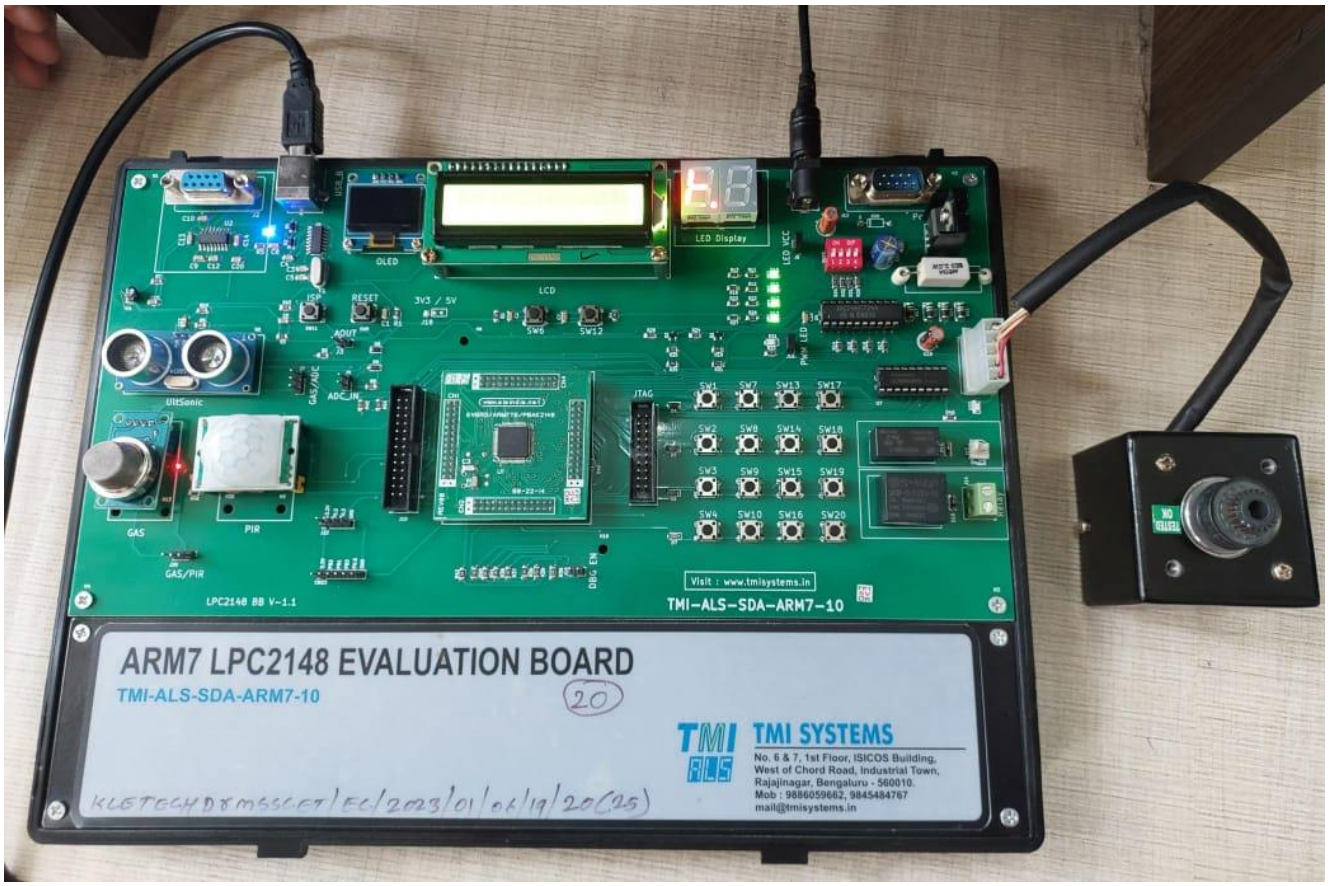
}

}

```
__task void anticlock(void)
        {
    IODIR0 = 0X0000F000;
    PINSEL0 = 0X00000000;
    {
        IOSET0 = 0X00008000;
        delay();
        IOCLR0 = 0X00008000;
        IOSET0 = 0X00004000;
        delay();
        IOCLR0 = 0X00004000;
        IOSET0 = 0X00002000;
        delay();
        IOCLR0 = 0X00002000;
        IOSET0 = 0X00001000;
        delay();
        IOCLR0 = 0X00001000;
    }
}
void delay()
{
  unsigned int i;
        for(i=0;i<250000;i++);
}
```

Output:


C:\Users\pc\Desktop\miniproject\rew1.uvproj - µVision [Non-Commercial Use License]
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Register Value
Current
R0 0x000005C4
R1 0x400008D0
R2 0x00000000
R3 0x00000490
R4 0x00001148
R5 0x00001148
R6 0x00000000
R7 0x00000000
R8 0x00000000
R9 0x00000000
R10 0x00000000
R11 0x00000000
R12 0x0000034D
R13 (SP) 0x40000870
R14 (LR) 0x00000365
R15 (PC) 0x000005C4
CPSR 0x60000010
SPSR 0x00000000
User/Syst...
Fast Interrupt
Interrupt
Supervisor
Abort
Undefined
Internal
PC $ 0x000005C4
Mode User
States 4138
Sec 0.00007110
Project Registers
Disassembly
13: os_sys_init (taskLed);
0x000005C4 E3A02000 MOV R2,#0x00000000
0x000005C8 E1A01002 MOV R1,R2
0x000005CC E59F0018 LDR R0,[PC,#0x0018]
review1.c
__task void taskLed(void);
__task void anticlock(void);
void delay(void);
int main(void) {
os_sys_init (taskLed);
while(1)
// Initialize your hardware and RTX here
os_sys_init(taskLed); // Start the RTX kernel w
}
__task void taskLed(void)
{
os_tsk_create (anticlock, 0);
IODIR0 = 0x000f0000;
IOSET0 = 0x000f0000;
while(1)
{
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 taskLed 1 Running Overflow
2 anticlock 1 Ready 34%
255 os_idle_demon 0 Ready 40%
Command
*** Currently used: 4468 Bytes (13%)
ASSIGN BreakDisable BreakEnable BreakKill BreakList BreakSet BreakAccess COVERAGE DEFINE DIR
Call Stack + Locals
Name Location/Value Type
main 0x000005C4 int f()
Call Stack + Locals Memory 1
Real-Time Agent: Not in target
Simulation
t1: 41.28302455 sec
L:13 C:1
CAP NUM SCRL OVR R/W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TMI SYSTEMS
No. 6 & 7, 1st Floor, ISICOS Building,
West of Chord Road, Industrial Town,
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Mob : 9886059662, 9845484767
mail@tmisystems.in