KLE Technological University

Creating Value
Leveraging Knowledge

Review - 1

Team – A5

USN: 02FE21BEC064 – PRAVEEN MAGADUM

USN: 02FE21BEC042 – KOMAL MELAVANKI

USN: 02FE22BEC021 – BHUVAN BUDAVI

USN: 02FE22BEC019 – BHAKTI BETAGERI

Topic:

Write a C code to demonstrate the concept of Task Switching

a. 1st Task - Toggle led.
b. 2nd Task - Rotate stepper motor anti-clockwise.

Under The Guidance Of:
Prof. S. M. Hunagund

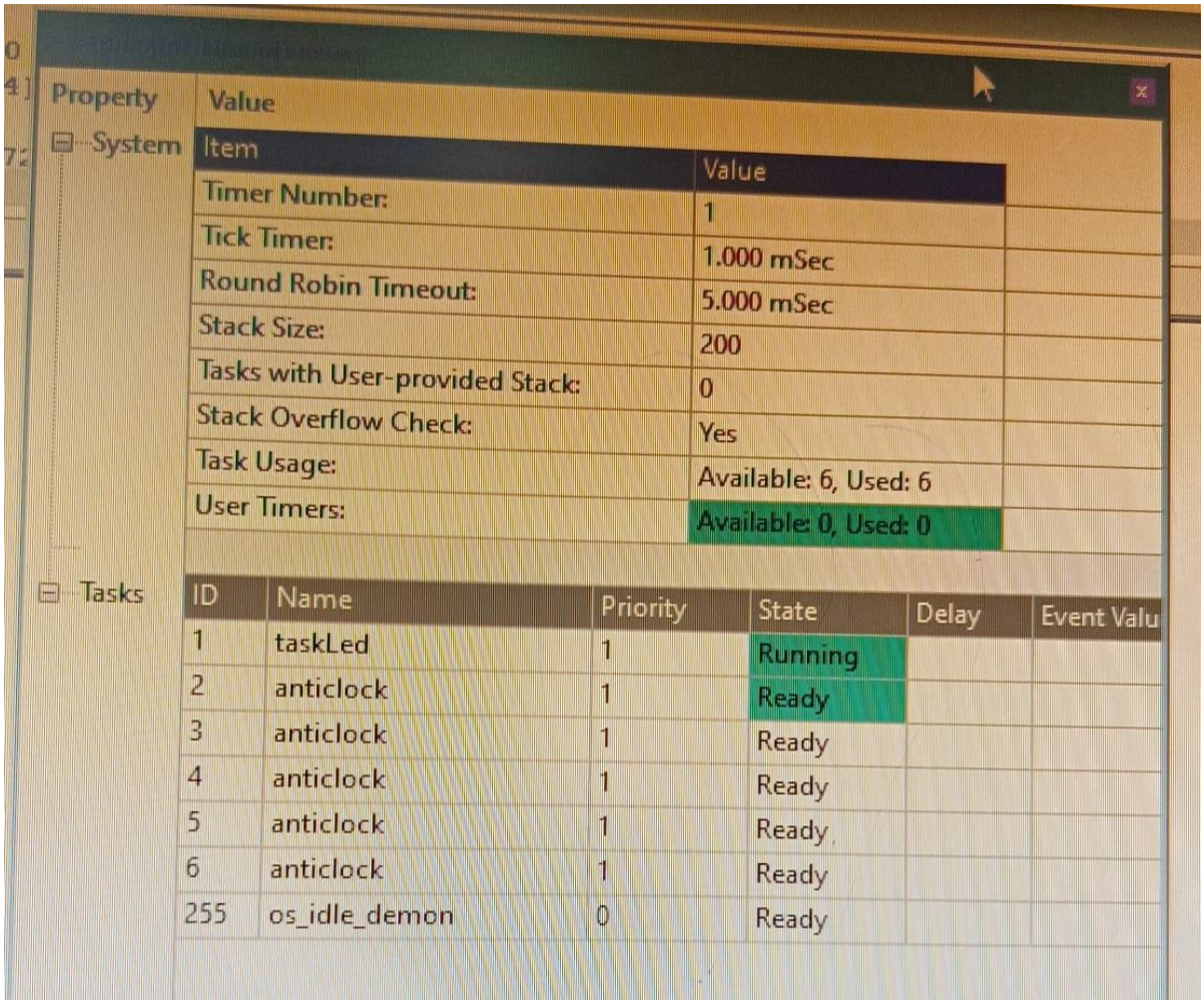
Guide Signature

- **Code:**

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

// Function prototypes
__task void taskLed(void);
__task void anticlock(void);
void delay(void);

// Main function
int main(void) {
   os_sys_init(taskLed); // Start the RTX kernel with the LED task
   while (1) {
      // Initialize your hardware and RTX here
      os_sys_init(taskLed);
   }
}

// LED task
__task void taskLed(void) {
   os_tsk_create(anticlock, 0);
   IODIR0 = 0x000f0000;
   IOSET0 = 0x000f0000;
   while (1) {
      IOCLR0 = 0x000f0000;
      delay();
      IOSET0 = 0x000f0000;
      delay();
   }
}

// Stepper motor anticlockwise task
__task void anticlock(void) {
   IODIR0 = 0X0000F000;
   PINSEL0 = 0X00000000;

   while (1) {
      IOSET0 = 0X00008000;
      delay();
      IOCLR0 = 0X00008000;
      IOSET0 = 0X00004000;
      delay();
      IOCLR0 = 0X00004000;
      IOSET0 = 0X00002000;
      delay();
      IOCLR0 = 0X00002000;
```

```
        IOSET0 = 0X00001000;
        delay();
        IOCLR0 = 0X00001000;
    }
}

// Delay function
void delay() {
    unsigned int i;
    for (i = 0; i < 65000; i++);
}
```

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

Tasks

ID	Name	Priority	State	Delay	Event Valu
1	taskLed	1	Running		
2	anticlock	1	Ready		
3	anticlock	1	Ready		
4	anticlock	1	Ready		
5	anticlock	1	Ready		
6	anticlock	1	Ready		
255	os_idle_demon	0	Ready		

OUTPUT


ARM7 LPC2148 EVALUATION BOARD
TMI-ALS-SDA-ARM7-10
TMI SYSTEMS
No. 6 & 7, 1st Floor, ISICOS Building,
West of Chord Road, Industrial Town,
Rajajinagar, Bengaluru - 560010.
Mob : 9886059662, 9845484767
mail@tmisystems.in
Visit : www.tmisystems.in
TMI-ALS-SDA-ARM7-10
LPC2148 BB V-1.1
Madhukar