KLE TECHNOLOGICAL UNIVERSITY | Belagavi Campus

Creating Value, Leveraging Knowledge

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

GROUP-01

NAMES	USN
Abhinandan Malaji	02FE21BEC001
Brunda Gulagannavar	02FE21BEC023
Chidambar Patil	02FE21BEC026
Priya Siddasamudra	02FE21BEC066

Problem statement:

Write a c code to demonstrate the concept of task switching

Task 1-Toggle leds

Task 2-Rotate steppermotor anticlockwise

Task 3-Rotate steppermotor clockwise

Under the Guidance of

Prof. Shivaling Hunagund

Guide Signature

_____

Code:

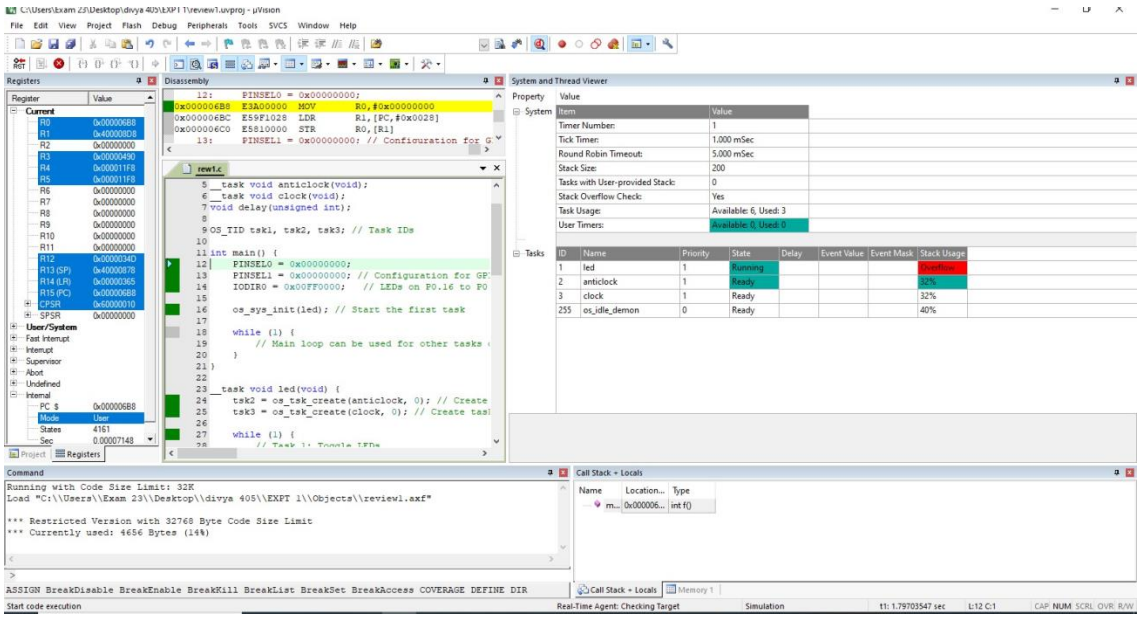
```
#include<lpc21xx.h>
#include<rtl.h>
#include<stdio.h>
__task void Led(void);
__task void anticlock(void);
__task void clock(void);
void delay(void);
void delay1(void);
// Main function
int main(void) {
 os_sys_init (Led);
 while(1)
 os_sys_init(Led); // Start the RTX kernel with the LED task
}
// LED task
__task void Led(void)
{
    os_tsk_create (anticlock, 0);
    IODIR0 = 0xf0ff0000;
   IOSET0 = 0x00ff0000;
  while(1)
{
    IOCLR0 = 0x00ff0000;
    delay1();
    IOSET0 = 0x00ff0000;
     delay1();
```

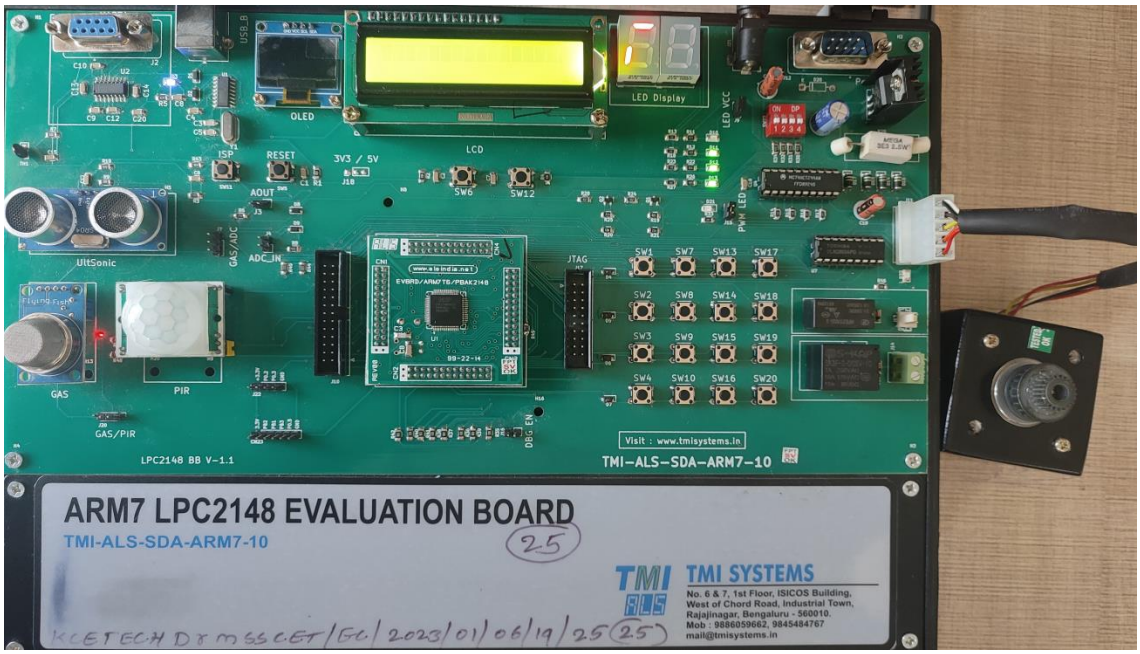
```
    anticlock();
    }
 os_dly_wait(0x0001);
}
// Stepper motor anticlockwise task
__task void anticlock(void)
{
  os_tsk_create (clock, 0);
    IODIR0 = 0X0000F000;
    PINSEL0 = 0X00000000;
    while (1) {
    IOSET0 = 0X00008000;
     delay();
     IOCLR0 = 0X00008000;
     IOSET0 = 0X00004000;
     delay();
     IOCLR0 = 0X00004000;
     IOSET0 = 0X00002000;
     delay();
     IOCLR0 = 0X00002000;
      IOSET0 = 0X00001000;
      delay();
      IOCLR0 = 0X0000100;
      delay();
      clock();
   }
     os_dly_wait(0x0001);
}
// Stepper motor clockwise task
```

```
__task void clock(void) {
    IODIR0 = 0X0000F000;
    PINSEL0 = 0X00000000;
    while (1) {
    IOSET0 = 0X00001000;
    delay();
    IOCLR0 = 0X00001000;
    IOSET0 = 0X00002000;
    delay();
     IOCLR0 = 0X00002000;
     IOSET0 = 0X00004000;
    delay();
     IOCLR0 = 0X00004000;
     IOSET0 = 0X00008000;
     delay();
     IOCLR0 = 0X00008000;
      delay();
      Led();
   }
  os_dly_wait(0x0001);
}
void delay()                    // Delay function
{
unsigned int i;
for(i=0;i<100000;i++);
}
void delay1()
{ unsigned int i;
for(i=0;i<100000;i++);
```

}

Output:


C:\Users\Exam 23\Desktop\divya 405\EXPT 1\review1.uvproj - µVision
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
Registers
Disassembly
System and Thread Viewer
rew1.c
Command
Running with Code Size Limit: 32K
Load "C:\\Users\\Exam 23\\Desktop\\divya 405\\EXPT 1\\Objects\\review1.axf"
*** Restricted Version with 32768 Byte Code Size Limit
*** Currently used: 4656 Bytes (14%)
Call Stack + Locals
Start code execution
Simulation


OLED
LCD
LED Display
RESET
ISP
AOUT
UltSonic
GAS
PIR
GAS/PIR
JTAG
LPC2148 BB V-1.1
Visit : www.tmisystems.in
TMI-ALS-SDA-ARM7-10
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