

# 10. RTOS on Virtual Hardware

Name : Durvesh Naresh Patil  
PRN : 2019BTEEN00035  
Subject : RTOS Lab  
Batch : EN-1

---

## **Code :**

```
#include "config.h"
#include "stdlib.h"
#include <stdio.h>

#define TaskStkLengh 64                                //Define the Task0 stack length

OS_STK    TaskStk0 [TaskStkLengh];                    //Define the Task stack
OS_STK    TaskStk1 [TaskStkLengh];                    //Define the Task stack

void  Task0(void *pdata);
void  Task1(void *pdata);

//pointer to semaphore
OS_EVENT* ptr_Sem_UART0;

//variable for storing error
uint8 err;

int main (void)
{
    LED_init();
    UART0_Init();
```

```

TargetInit();

OSInit ();

ptr_Sem_UART0 = OSSemCreate(1);

OSTaskCreate (Task0,(void *)0, &TaskStk0[TaskStkLengh - 1], 6);
OSTaskCreate (Task1,(void *)0, &TaskStk1[TaskStkLengh - 1], 7);

OSStart();
return 0;

}

void Task0    (void *pdata)
{
    unsigned int i;
    pdata = pdata;                                /* Dummy data */

    while(1)
    {
        // wait for semaphore to be available
        OSSemPend(ptr_Sem_UART0,0,&err);

        UART0_SendData("***    Durvesh Patil \r\n");
        for(i=0;i<4;i++)
        {
            LED_on(0);  // All LEDs on
            OSTimeDly(3);
            LED_off(0);
            OSTimeDly(3);
        }
    }
}

```

```

        OSSemPost(ptr_Sem_UART0);
        OSTimeDly(1);

    }

}

void Task1    (void *pdata)
{
    unsigned int i;
    pdata = pdata;                                /* Dummy data */

    while(1)
    {
        OSSemPend(ptr_Sem_UART0,0,&err);
        UART0_SendData("***      2019BTEEN00035 \r\n");

        for(i=0;i<2;i++)
        {
            LED_on(0);    // All LEDs on
            OSTimeDly(1);
            LED_off(0);
            OSTimeDly(1);
        }

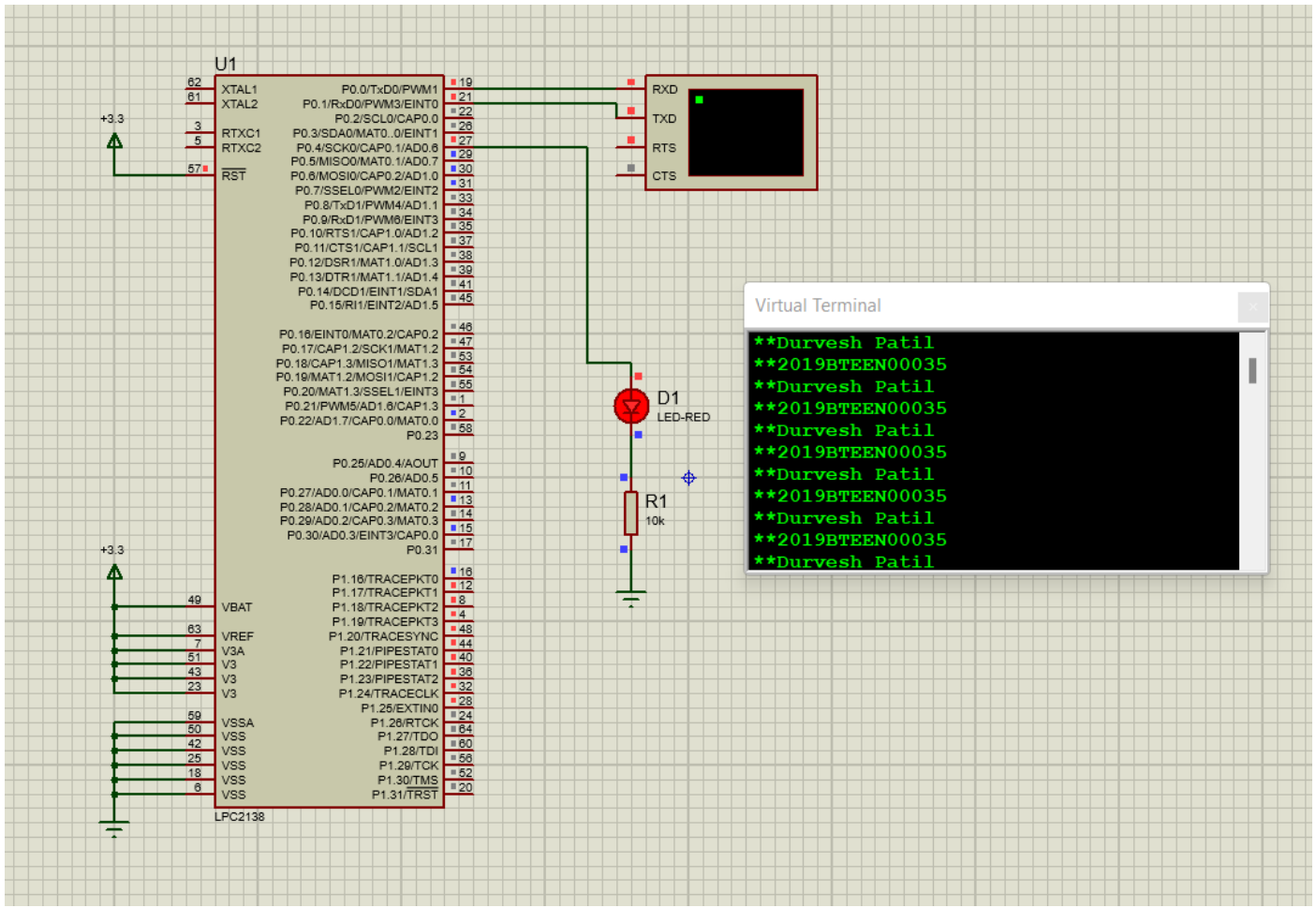
        OSSemPost(ptr_Sem_UART0);
        OSTimeDly(1);

    }

}

```

## Proteus Screenshots:



## Comments:

Implemented semaphore program in proteus. We get output as expected as shown in the above picture.