SEMAPHORE:

```
#include "includes.h"
#include "edutech.h"
#include "uart.h"
#include "lcd.h"


OS_EVENT *semaphore;

OS_STK Task1Stack[100];
void Task1(void *pdata);

OS_STK Task2Stack[100];
void Task2(void *pdata);

OS_STK Task3Stack[100];
void Task3(void *pdata);


/* Main Program */

int  main (void)

{
timer_init();
OSInit();
semaphore = OSSemCreate(1);
OSTaskCreate(Task1, (void *)0, &Task1Stack[99], 3);
OSTaskCreate(Task2, (void *)0, &Task2Stack[99], 2);
OSTaskCreate(Task3, (void *)0, &Task3Stack[99], 4);
OSStart();
return 0;
}




/* Task Definition */

/**

*      Task1 to Print 0 to 9 on LCD line1 */

void Task1(void *pdata)

{

       int i=0;
       INT8U err;
       Lcd_Init();  // Initialize LCD in 8bit mode
       Lcd_Cmd(0x80);      // LCD Line1 cmd
```

```
	Lcd_String("numbers");
	OSSemPend(semaphore, 0, &err);
	while(1)
		{
		Lcd_Cmd(0x88);
		Lcd_Data(0x30 + i++);			// LCD Line1 cmd
		if(i==10) i=0;
		OSTimeDlyHMSM(0, 0, 1, 0);
		}
		OSSemPost(semaphore);
}

/**

*	Task2 to Print A to Z on LCD line2 */

void Task2(void *pdata)

{
int i=0;
INT8U err;

	OSSemPend(semaphore, 0, &err);
	while(1)
	{
		Lcd_Cmd(0xC0); // LCD Line2 cmd
		Lcd_String("alphabets");
		Lcd_Cmd(0xCB);	// LCD Line2 cmd
		Lcd_Data(0x41 + i++);
		if(i==26) i=0;
		OSTimeDlyHMSM(0, 0, 0, 500);
		OSSemPost(semaphore);
	}
}

/**

*	Task3 to Print 0 to 9999 on UART0 */

void Task3(void *pdata)
{
	int i=0;
	INT8U err;
	OSSemPend(semaphore, 0, &err);
	Uart0_Init(4800);
	while(1)
	{

		uprintf("\x1b[1;1HTask3 %d04",i++);
		if(i==9999) i=0;
		OSTimeDlyHMSM(0, 0, 1, 0);
		OSSemPost(semaphore);
	}
}
```