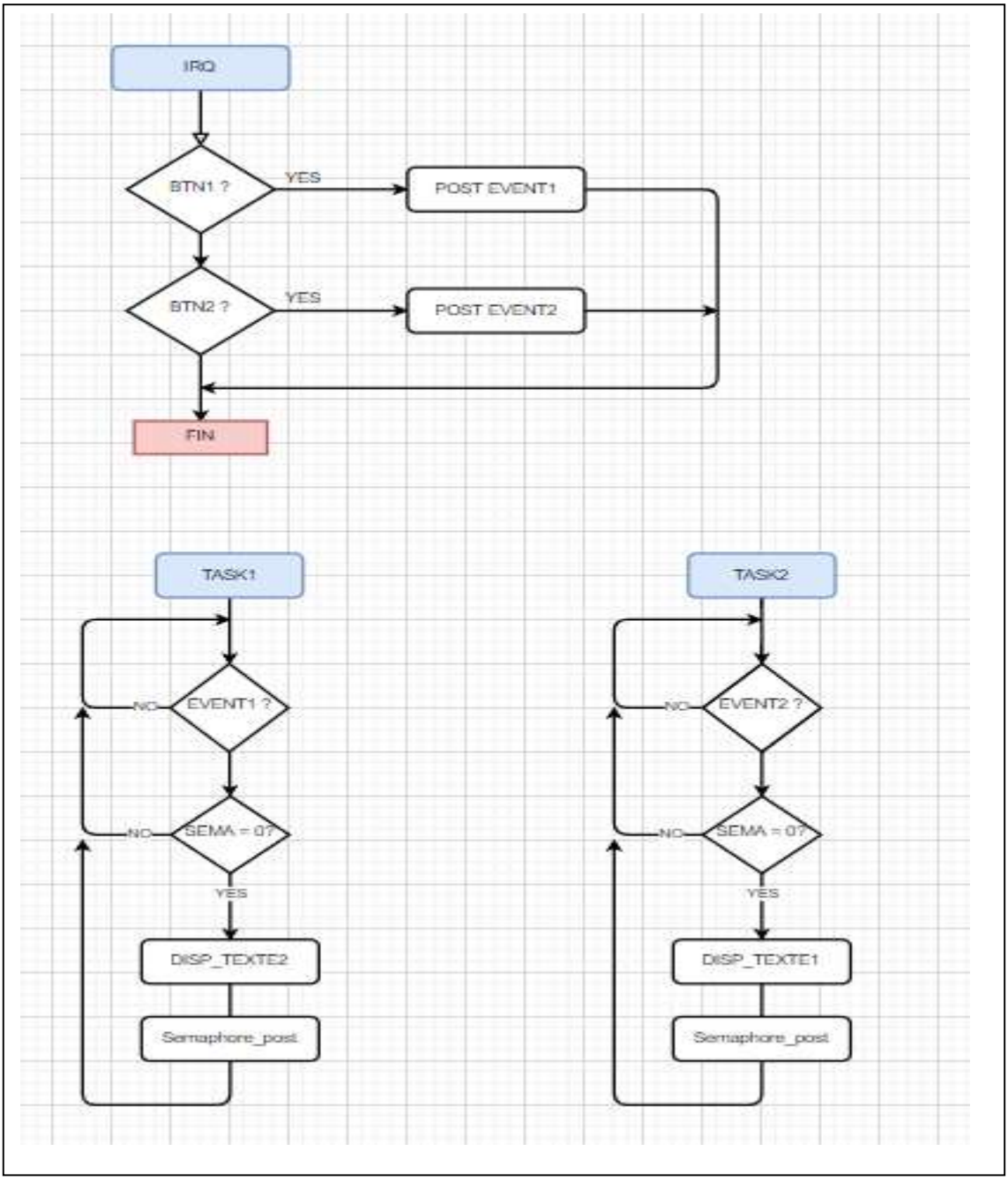
Exemples Semaphore



```c
/*****************************************************************
 * main.h
 *
 *  Created on: 18 oct. 2022
 *      Author:

*****************************************************************/

#ifndef MAIN_H_
#define MAIN_H_

//PORT1
#define LED_ROUGE   GPIO_PIN0
#define BOUTON1     GPIO_PIN1
#define BOUTON2     GPIO_PIN2
//PORT9
#define LED_VERTE   GPIO_PIN7

//EVENT CONSTANT
#define EVENT_TIMEOUT   12
#define BTN1_EVENT      Event_Id_01
#define BTN2_EVENT      Event_Id_02

#endif /* MAIN_H_ */
```

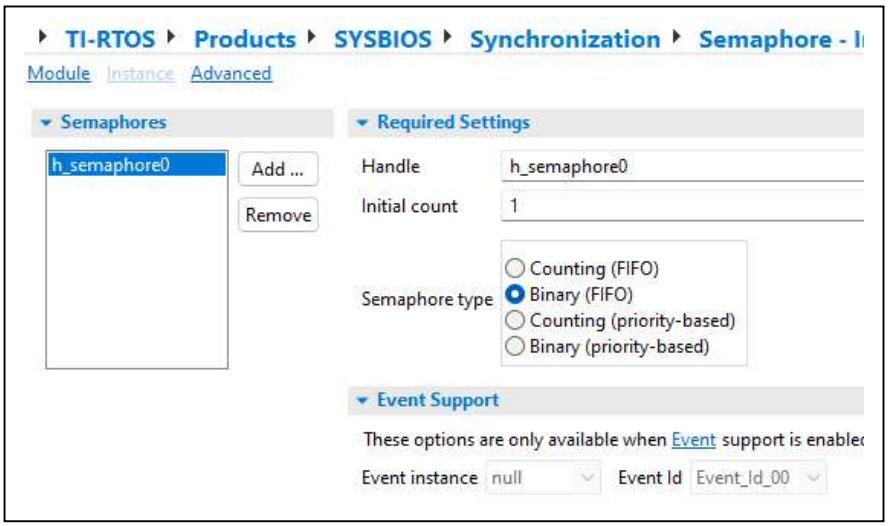
```c
/******************************************************************************
 * Copyright (c) 2015, Texas Instruments Incorporated
 * All rights reserved.
 *
 *  ======== IRQ Example ========
 *
 *****************************************************************************/
#include <stdint.h>
#include <stdbool.h>
#include <string.h>
/* XDCtools Header files */
#include <xdc/std.h>
#include <xdc/runtime/System.h>
#include <xdc/cfg/global.h>
/* BIOS Header files */
#include <ti/sysbios/BIOS.h>
#include <ti/sysbios/knl/Task.h>
#include <ti/sysbios/knl/Event.h>
#include <ti/sysbios/knl/Semaphore.h>
/* TI-RTOS Header files */
#include <driverlib.h>
/* Board Header file */
#include "main.h"
#include "hal_LCD.h"

/******************************************************************************
 * Prototype de fonction
******************************************************************************/
void Init_GPIO(void);
void Blink_RED(UArg arg0, UArg arg1);
void Task_Event_BTN1(UArg arg0, UArg arg1);
void Task_Event_BTN2(UArg arg0, UArg arg1);
void IRQ_Port1(unsigned index);
void ScrollText(char *msg);

/******************************************************************************
**********
 *  ======== main ========

******************************************************************************
**********/
int main(void)
{
    WDT_A_hold(WDT_A_BASE); //Stop WDT
    PM5CTL0 &= ~LOCKLPM5;

    Init_GPIO();
    Init_LCD();
```

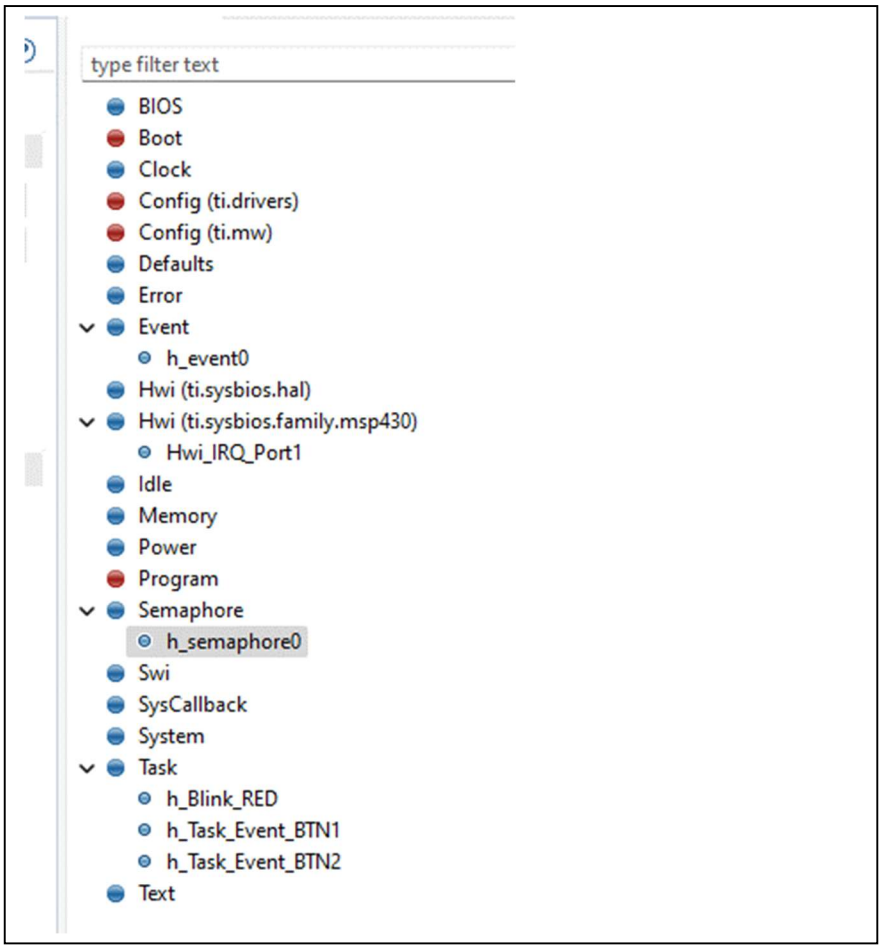
```
    DisplayText("LCD ON");

    /* Start BIOS */
    BIOS_start();

    return (0);
}

/*************************************************************************
 *  ======== Init_GPIO ========
*************************************************************************/
void Init_GPIO(void)
{
    //PORT1
    GPIO_setAsOutputPin(GPIO_PORT_P1, LED_ROUGE);
    GPIO_setOutputLowOnPin(GPIO_PORT_P1, LED_ROUGE);
    GPIO_setAsInputPin(GPIO_PORT_P1,BOUTON1 + BOUTON2);
    GPIO_setAsInputPinWithPullUpResistor(GPIO_PORT_P1,BOUTON1 +
BOUTON2);
    GPIO_selectInterruptEdge(GPIO_PORT_P1, BOUTON1 + BOUTON2,
GPIO_HIGH_TO_LOW_TRANSITION);
    //PORT9
    GPIO_setAsOutputPin(GPIO_PORT_P9, LED_VERTE);
    GPIO_setOutputLowOnPin(GPIO_PORT_P9, LED_VERTE);
    //IRQ
    GPIO_enableInterrupt(GPIO_PORT_P1,BOUTON1 + BOUTON2);
    GPIO_clearInterrupt(GPIO_PORT_P1,BOUTON1 + BOUTON2);
}

/*************************************************************************
 *  ======== Blink_RED ========
*************************************************************************/
void Blink_RED(UArg arg0, UArg arg1)
{
    while (1)
        {
        Task_sleep(1000);
        GPIO_toggleOutputOnPin(GPIO_PORT_P1, LED_ROUGE);
        }
}
```

```
/*********************************************************************
 *  ======== Task_Event_BTN1 ========
*********************************************************************/
void Task_Event_BTN1(UArg arg0, UArg arg1)
{
    uint16_t Posted;

    while (1)
        {
        Posted = Event_pend(h_event0,             // hande du
registre event
                            Event_Id_NONE,      // andMask
                            BTN1_EVENT,         // orMask
                            EVENT_TIMEOUT);

        switch(Posted)
            {
            case BTN1_EVENT:
                Semaphore_pend(h_semaphore0, BIOS_WAIT_FOREVER);
                ClearLCD();
                DisplayScrollText(LCDstrupr("not remade because of
errors"));
                GPIO_setOutputHighOnPin(GPIO_PORT_P9, LED_VERTE);
                Semaphore_post(h_semaphore0);
                break;
            }

        Task_sleep(10);
        }
}
```

```
/*********************************************************************
 *  ======== Task_Event_BTN2 ========
*********************************************************************/
void Task_Event_BTN2(UArg arg0, UArg arg1)
{
    uint16_t Posted;

    while (1)
        {
        Posted = Event_pend(h_event0,         // hande du registre
event
                            Event_Id_NONE,  // andMask
                            BTN2_EVENT,     // orMask
                            EVENT_TIMEOUT);

        switch(Posted)
            {
            case BTN2_EVENT:
                Semaphore_pend(h_semaphore0, BIOS_WAIT_FOREVER);
                DisplayScrollText(LCDstrupr("too few arguments in
function call"));
                GPIO_setOutputLowOnPin(GPIO_PORT_P9, LED_VERTE);
                Semaphore_post(h_semaphore0);
                break;
            }

        Task_sleep(10);
        }
}
```

```
/*************************************************************************
 *  ======== Irq_Port1 ========
 *
 *  Vector: ( .int37 )
*************************************************************************/
void IRQ_Port1(unsigned index)
{
    uint16_t Status = GPIO_getInterruptStatus(GPIO_PORT_P1,
BOUTON1+BOUTON2);

    switch(Status)
        {
        case BOUTON1:
            Event_post(h_event0, BTN1_EVENT);
            GPIO_clearInterrupt(GPIO_PORT_P1,BOUTON1);
            break;

        case BOUTON2:
            Event_post(h_event0, BTN2_EVENT);
            GPIO_clearInterrupt(GPIO_PORT_P1,BOUTON2);
            break;
        }
}

/*************************************************************************
```


TI-RTOS
Products
SYSBIOS
Synchronization
Semaphore - I
Module
Instance
Advanced
Semaphores
h_semaphore0
Add ...
Remove
Required Settings
Handle
h_semaphore0
Initial count
1
Semaphore type
Counting (FIFO)
Binary (FIFO)
Counting (priority-based)
Binary (priority-based)
Event Support
These options are only available when Event support is enable
Event instance
null
Event Id
Event_Id_00


type filter text
BIOS
Boot
Clock
Config (ti.drivers)
Config (ti.mw)
Defaults
Error
Event
h_event0
Hwi (ti.sysbios.hal)
Hwi (ti.sysbios.family.msp430)
Hwi_IRQ_Port1
Idle
Memory
Power
Program
Semaphore
h_semaphore0
Swi
SysCallback
System
Task
h_Blink_RED
h_Task_Event_BTN1
h_Task_Event_BTN2
Text