Write a C code for

1)Configure Timer & UART.

2)Write a code using timer and UART 1Sec blink of LED ON /OFF

3)Test on msp430kit

**Code:**

**#include** <msp430.h>

**#include** <stdint.h>

uint8\_t flag;

uint8\_t flag1;

**char** message1[]="LED IS ON\n";

**int** position1;

**int** j;

**char** message2[]="LED IS OFF\n";

**int** position2;

**int** k;

**int** **main**(**void**)

{

WDTCTL = WDTPW | WDTHOLD; // Stop WDT

// Configure GPIO

P1DIR |= BIT0; // Set Pin as output

P1OUT |= BIT0;

P1SEL0 |= BIT6 | BIT7;

// Disable the GPIO power-on default high-impedance mode to activate

// previously configured port settings

PM5CTL0 &= ~LOCKLPM5;

UCA0CTLW0 |= UCSWRST;

UCA0CTLW0 |= UCSSEL\_\_SMCLK;

UCA0BR0 = 8; // 1000000/115200 = 8.68

UCA0MCTLW = 0xD600; // 1000000/115200 - INT(1000000/115200)=0.68

// UCBRSx value = 0xD6 (See UG)

UCA0BR1 = 0;

UCA0CTLW0 &= ~UCSWRST; // Initialize eUSCI

UCA0IE |= UCRXIE; // set ACLK as BRCLK

// Timer1\_B3 setup

TB1CCTL0 = CCIE; // TBCCR0 interrupt enabled

TB1CCR0 = 32000;

TB1CTL = TBSSEL\_1 | MC\_1; // ACLK, up mode

**\_\_bis\_SR\_register**( GIE);

**\_\_no\_operation**();

**while**(1)

{

**if**(flag1==0 && flag == 0)

{

flag1=1;

**for**(position1=0;position1<**sizeof**(message1);position1++)

{

UCA0TXBUF= message1[position1];

**for**(j=0;j<1000;j++){}

}

}

**else** **if**(flag1==1 && flag == 1) {

flag1=0;

**for**(position2=0;position2<**sizeof**(message2);position2++)

{

UCA0TXBUF= message2[position2];

**for**(k=0;k<1000;k++){}

}

}

**else** ;

}

// Enter LPM3 w/ interrupt

}

// Timer B1 interrupt service routine

**#if** defined(\_\_TI\_COMPILER\_VERSION\_\_) || defined(\_\_IAR\_SYSTEMS\_ICC\_\_)

**#pragma** vector = TIMER1\_B0\_VECTOR

\_\_interrupt **void** **Timer1\_B0\_ISR**(**void**)

**#elif** defined(\_\_GNUC\_\_)

**void** **\_\_attribute\_\_** ((interrupt(TIMER1\_B0\_VECTOR))) Timer1\_B0\_ISR (**void**)

**#else**

**#error** Compiler not supported!

**#endif**

{

**if**(flag == 1){

flag = 0;

P1OUT |= BIT0;

//send uart data here

}

**else**{

flag = 1;

P1OUT &= ~BIT0;

//send uart data here

}

}

**Output:Graphical user interface, text

Description automatically generated**