

```

1  #include <MKL25Z4.H>
2  //function declaration
3  void UART0_init(void);
4  void LED_init(void);
5  void LED_set(char value);
6
7  int main (void)
8  {
9      SystemCoreClockUpdate();
10     char c;
11     UART0_init();           // Initiating UART0 as receiver
12     LED_init();            // Initiating PTB18, PTB19 for turning on LED
13     while (1) {
14         while(!(UART0->S1 & (1<<5))); //Infinite loop till receiving data buffer is not empty
15         c = UART0->D;        //Receiving Values from Tera Terminal
16         LED_set(c);         //Running LED based on the the data received
17     }
18 }
19
20 void UART0_init(void)
21 {
22     SIM->SCGC4 |= (1<<10);    // set 10th index(index start from 0) bit = 1, enable clock for UART0
23     SIM->SOPT2 |= (1<<26);    // set 26th index bit = 1, Selecting MCGFLLCLK clock or MCGPLLCLK/2 as
24     SIM->SOPT2 &= 0xF7FFFFFF; // set 27th index bit = 0, other undisturbed, F(0111)FFFFFF
25     UART0->C2 = 0x00;         // Transmitter, Receiver disabled
26     UART0->BDH = 0x00;        // Baudrate updated
27     UART0->BDL = 0x18;        //00001101, to write 24, SBR = (clock freq/(OSR*))
28     UART0->C4 = 0x0F;         //00001111, for OCR of 16, Setting OverSampling Ratio 01111
29     UART0->C1 = 0x00;         //00000000, no parity
30     UART0->C2 = 0x04;         //set 3rd index bit = 1, 00001000, Transmitter disabled & Receiver
31     SIM->SCGC5 |= (1<<9);     //set 9th index bit = 0, Clock for PORT A Enabled
32     PORTA->PCR[1] = (1<<9);   //set 9th index bit = 0, MUXing PORT A to use as UART
33     PORTA->PCR[1] = 0xFFFFFAFF; //reset
34 }
35
36 void LED_init(void)//Initiating GREEN LED
37 {
38     SIM->SCGC5 |= (1<<10);    // enable clock to Port B
39     PORTB->PCR[19] |= (1<<8); // MUXing PORT B to use as (PCR19 - 001)
40     PORTB->PCR[19] &= 0xFFFF9FFF;
41     PTB->PDDR |= (1<<19);    //Setting Pin 19 as input and taking XOR
42     PTB->PDOR |= (1<<19);    //initially off, Corresponding bit 19 in PDORB is set to logic 1.
43 }
44
45 void LED_set(char value)
46 {
47     if (value == 'g') //Green LED ON
48     {
49         PTB->PCOR |= (1<<19); //Corresponding bit 19 in PDORB is cleared to logic 0
50     }else if(value == 'o') //Green LED OFF
51     {
52         PTB->PDOR |= (1<<19); //Corresponding bit 19 in PDORB is set to logic 1.
53     }
54 }
55

```