

# main.c

```
#include <xc.h>
#include <stdio.h>
#include "config.h"
#include "usart.h"

#define _XTAL_FREQ 8000000

char read_data;
void readBluetooth();
void writeBluetooth();

void main(void)
{
    osc_config();
    USART_Init(9600);
    USART_Write_Text("Felicitari, esti cel mai bun!");

    ANSEL = 0x00;
    ANSELH = 0x00;
    TRISE = 0x00;
    while(1)
    {
        readBluetooth();
        //writeBluetooth();
    }
}

void readBluetooth()
{
    read_data = USART_Read();
    if(read_data == 'A')
    {
        USART_Write_Text("LED ON");
        PORTE = 0xFF;
    }
    else
    {
        USART_Write_Text("LED OFF");
        PORTE = 0x00;
    }
}

void writeBluetooth()
{
    USART_Write_Text("OK");
}
```

# config.h

```
#include <xc.h>
#define _XTAL_FREQ 8000000

/*CONFIG1*/

#pragma FOSC = INTRC_NOCLKOUT
#pragma WDTE = OFF
#pragma PWRTE = OFF
#pragma MCLRE = OFF
#pragma CP = OFF
#pragma CPD = OFF
#pragma BOREN = OFF
#pragma IESO = OFF
#pragma FCMEN = OFF
#pragma IESO = OFF
//#pragma DEBUG = ON

/*CONFIG2*/

#pragma BOR4V = BOR40V
#pragma WRT = OFF

void osc_config()
{
    OSCCONbits.IRCF = 0b111;
    OSCCONbits.SCS = 0b1;
}
```

# usart.h

```
#include <xc.h>
#define _XTAL_FREQ 8000000

char USART_Init(const long int baudrate)
{
    unsigned int x;
    x = (_XTAL_FREQ - baudrate*64)/(baudrate*64);
    if(x>255)
    {
        x = (_XTAL_FREQ - baudrate*16)/(baudrate*16);
        BRGH = 1;
    }
    if(x<256)
    {
        SPBRGH:SPBRG = x;
        SYNC = 0;
        SPEN = 1;
        TRISC7 = 1;
        TRISC6 = 1;
        CREN = 1;
        TXEN = 1;
        return 1;
    }
    return 0;
}

char USART_TX_Empty()
{
    return TRMT;
}

char USART_Data_Ready()
{
    return RCIF;
}

char USART_Read()
{
    while(!RCIF);
    return RCREG;
}

void USART_Read_Text(char *Output, unsigned int length)
{
    unsigned int i;
    for(int i=0;i<length;i++)
        Output[i] = USART_Read();
}

void USART_Write(char data)
{
    while(!TRMT);
    TXREG = data;
}

void USART_Write_Text(char *text)
{
    int i;
    for(i=0;text[i]!='\0';i++)
        USART_Write(text[i]);
}
```