src\main.c

```c
#define F_CPU 16000000UL

#include <stdio.h>
#include <string.h>
#include <avr/io.h>
#include <util/delay.h>
#include <avr/interrupt.h>

#include "i2cmaster.h"
#include "lcd.h"
#include "lm75.h"

#include "usart.h"

#define BAUDRATE 9600
#define BAUD_PRESCALER (((F_CPU / (BAUDRATE * 16UL))) -1)

volatile unsigned char data;

ISR(USART_RX_vect) {
    data = UDR0;
    PORTD = (8 << data);
}

void usart_init();
void usart_out(unsigned char data);
unsigned char usart_in(void);

int main(void) {

    //uart_init(); // open the communication to the microcontroller
    //io_redirect(); // redirect input and output to the communication

    //i2c_init();
    //LCD_init();
    //lm75_init();

    //The buttons are PC0, PC1, PC2, PC3
    //The LEDs are PD7, PD6, PD5, PD4

    DDRC = 0xF0; //Setting (button) ports to input (0)
    PORTC = 0x3F; //Setting up pull-up resistors
    DDRD = 0xF0; //Setting (LED) ports to output
    //PORTD = 0xF0; //Setting LEDs on



    sei();
    usart_init();

    while(1) {
        if(PINC == 0b00111110) {
            usart_out(1);
            _delay_ms(150);
        }
        if(PINC == 0b00111101) {
```

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            usart_out(2);
            _delay_ms(150);
        }
        if(PINC == 0b00111011) {
            usart_out(3);
            _delay_ms(150);
        }
        if(PINC == 0b00110111) {
            usart_out(4);
            _delay_ms(150);
        }
    }

    return 0;
}

void usart_init() {
    UBRR0H = (uint8_t)(BAUD_PRESCALER >> 8);
    UBRR0L = (uint8_t)(BAUD_PRESCALER);
    UCSR0B = (1 << RXEN0) | (1 << TXEN0) | (1 << RXCIE0) | (1 << TXCIE0);
    UCSR0C = (1 << UCSZ01) | (1 <<  UCSZ00);
}

void usart_out(unsigned char data) {
    while(!(UCSR0A & (1 << UDRE0)));
    UDR0 = data;
}

unsigned char usart_in(void) {
    while(!(UCSR0A & (1 << RXC0)));
    return UDR0;
}
```