Design note and assumptions

- Logic states and switches are included only for simulation purpose.
- This is not a bidirectional port design. Separate 8-bit port used for inputs and 16-bit port used for output
- This is a level trigger design

b) Write a simple program in C to read a value from and write a value to your interface

```c
#include <stdio.h>
#include <unistd.h>
#include <sys/io.h>
#include <asm/io.h>

#define ADDR 0x210 //base address from the address lines

void main(){
    //check for port access
    if (ioperm(ADDR, 1, 1)){
        fprintf(stderr, "Access denied to %x\n", ADDR),
        exit(1);
    }

    //write operation
    unsigned int value = 270;
    unsigned char lower_byte = value;
    unsigned char higher_byte = value >> 8;
    outb(lower_byte, ADDR);
    outb(higher_byte, ADDR + 1);

    // read operation
    unsigned char byte_read = inb(ADDR);
    printf("%lu", byte_read);

}
```