Tetris

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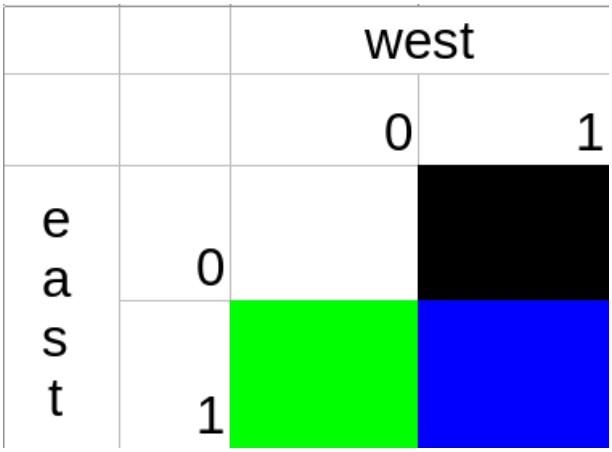

Figure 2.1: Color scheme

This project uses custom LCD library written in Java. Resolution of the LCD is 17x20 and it has 4-bit color scheme. In the library implementation, memory is statically allocated so that you can feed data to one LCD and display it on another. There are 32-bit inputs on the east and west sides. Each display input only processes the upper 17 bits. To draw each row, the corresponding inputs are taken and matched against each other. If 0 is stored at the same bit position, then a white pixel is displayed. If the bit from the east input is 1 and the bit from the west input is 0 then a green pixel is drawn. If the bit from the west input is 1 and from the east input is 0, then a black pixel is drawn. If the same bit position in the east and west input is 1, then a blue pixel is displayed. Coordinates are counted from the top left.

2.2 Main chip

2.2.1 IO addresses

Name	Mode	Address(hex)
Control register	w	f0
Write data	w	f1
Read data	r	f2
Figure X coordinate	r/w	f3
Figure Y coordinate	r/w	f4
Score	r/w	f5
Read keyboard	r	f6
Read status	r	f7

Addresses 0xf0 to 0xf7 are reserved for I/O. Addresses from 0xf8 to 0xff are reserved for the stack.

2.2.2 Control register

2.2.3 Keyboard

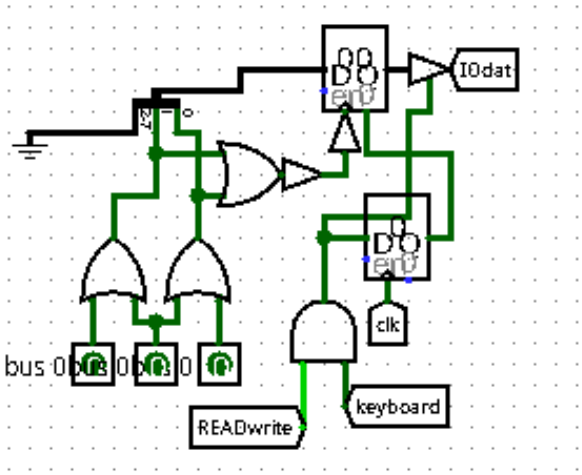

Figure 2.2: Keyboard

This part of the chip has 3 inputs, each of which is responsible for the movement of the figure: left, turn, right. When one of the inputs receives a logical unit, the value corresponding to the purpose of the input is written to the register in accordance with the table. The register value is cleared after the Cdm-8 reads its value.

Bit mask		
left	rotate	right
0b00000010	0b00000011	0b00000001

Chapter 3

Software