ECE3221 Lab 1

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Part One:

set pc to 0x100

movia r11,0x10000000

* pc incremented to 0x104
* r11 set to 0x10000000
* pc incremented to 0x108

set pc to 0x108

movia r10,0x10000040

* pc 0x10c
* r10 set to 0x10000000
* pc 0x110
* r10 incremented to 0x10000040

set pc to 0x110

ldwio r3, 0(r10)

* 0x0000000f loaded into r3 from switches
* LED remain the empty
* the value in r3 represents the value formed by the switched 0xf
* pc to 0x114
* r3 sent to LEDs
* LEDs light up
* pc to 0x118
* pc to 0x110 (loop)

br command

* Operation PC ← PC + 4 + σ (IMM16) (I Type)
* Hex 0x003ffd06
* Bin 0000 0000 00 11 1111 1111 1101 00 00 0110

|  |  |  |  |
| --- | --- | --- | --- |
| rA | rB | IMM16 | OP |
| 00000 | 00000 | 0011 1111 1111 1101 00 | 000110 |
| 0x00 | 0x00 | 0x3ffd | 0x06 |

* Directs branch to location of top address

Running the program

* While looping from 0x110 to 0x118 the LEDs are set to whatever the switches are set to.

Part Two