Instruction Manual:

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| Instruction | Functionality | Encoding Format | MC Example | asm example |
| init Rx, imm | Rx = imm; PC++ imm: [0, 15] | 0 xx iiii | 00011001 | init R1, 9 |
| addi Rx, imm | Rx = Rx + imm; PC++ imm: [0, 3] | 1000 xx ii | 10000011 | addi R0, 3 |
| sub Rx, Ry | Rx = Rx – Ry; PC++ | 0111 xx yy | 01111111 | sub R3, R3 |
| bezR0 imm | if R0==0, PC = PC + imm else, PC = PC+4  imm: [-8, 7] | 1011 iiii | 10111100 | bezR0 -4 |
| end | Stops the program | 0100 | 01001010 | end |
| jmp imm | PC = PC + imm  imm: [-8, 7] | 1100 iiii | 11000010 | jmp 2 |
| eq Rx, Ry | If Rx == Ry, Rx = 1. else, Rx = 0 | 0110 xx yy | 01101011 | eq R1, R2 |
| sb Rx, Ry | mem[Ry] = Rx | 1001 xx yy | 10011100 | sb R1, R2 |
| lb Rx, Ry | Rx = mem[Ry] | 1010 xx yy | 10101010 | lb R1,R3 |
| hash Rx, Ry |  | 1100 xx yy | 11001010 | hash R1, R2 |