Narges Seyed Haeri 810100165

Mina Shirazi 810100250

| Instruction | OPC | Func3 | Func7 | RegWrite | Memwrite | ALUSrc | ResultSrc | ALUControl | ImmSrc | branchEq | branchNe | branchge | branchlt | PCSrc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Add | 0110011 | 000 | 0000000 | 1 | 0 | 0 | 00 | 000 | 000 | 0 | 0 | 0 | 0 | 00 |
| Sub | 0110011 | 000 | 0100000 | 1 | 0 | 0 | 00 | 001 | 000 | 0 | 0 | 0 | 0 | 00 |
| And | 0110011 | 111 | 0000000 | 1 | 0 | 0 | 00 | 010 | 000 | 0 | 0 | 0 | 0 | 00 |
| Or | 0110011 | 110 | 0000000 | 1 | 0 | 0 | 00 | 011 | 000 | 0 | 0 | 0 | 0 | 00 |
| Slt | 0110011 | 010 | 0000000 | 1 | 0 | 0 | 00 | 101 | 000 | 0 | 0 | 0 | 0 | 00 |
| Addi | 0010011 | 000 | xxxxxxx | 1 | 0 | 1 | 00 | 000 | 000 | 0 | 0 | 0 | 0 | 00 |
| Xori | 0010011 | 100 | xxxxxxx | 1 | 0 | 1 | 00 | 111 | 000 | 0 | 0 | 0 | 0 | 00 |
| Slti | 0010011 | 010 | xxxxxxx | 1 | 0 | 1 | 00 | 101 | 000 | 0 | 0 | 0 | 0 | 00 |
| Ori | 0010011 | 110 | xxxxxxx | 1 | 0 | 1 | 00 | 001 | 000 | 0 | 0 | 0 | 0 | 00 |
| Sw | 0100011 | 010 | xxxxxxx | 0 | 1 | 1 | 10 | 000 | 001 | 0 | 0 | 0 | 0 | 00 |
| beq | 1100011 | 000 | xxxxxxx | 0 | 0 | 0 | 00 | 001 | 010 | 1 | 0 | 0 | 0 | ** |
| bneq | 1100011 | 001 | xxxxxxx | 0 | 0 | 0 | 00 | 001 | 010 | 0 | 1 | 0 | 0 | ** |
| bge | 1100011 | 100 | xxxxxxx | 0 | 0 | 0 | 00 | 001 | 010 | 0 | 0 | 1 | 0 | ** |
| blt | 1100011 | 101 | xxxxxxx | 0 | 0 | 0 | 00 | 001 | 010 | 0 | 0 | 0 | 1 | ** |
| lui | 0110111 | xx | xxxxxxx | 1 | 0 | 1 | 11 | 100 | 011 | 0 | 0 | 0 | 0 | 00 |
| jal | 1101111 | xx | xxxxxxx | 1 | 0 | 1 | 11 | 000 | 100 | 0 | 0 | 0 | 0 | 01 |
| lw | 0000011 | xx | xxxxxxx | 1 | 0 | 1 | 01 | 000 | 000 | 0 | 0 | 0 | 0 | 00 |
| jalr | 1100111 | xx | xxxxxxx | 1 | 0 | 1 | 11 | 000 | 000 | 0 | 0 | 0 | 0 | 10 |

** ⟶ PCSrc = (func3==3'b000 && Zero==1'b1)?2'b01:

(func3==3'b001 && Zero==1'b0)?2'b01:

(func3==3'b100 && bge==1'b1)?2'b01:

(func3==3'b101 && blt==1'b1)?2'b01:2'b00;