|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Instr | Opcode | Func | RegDst | ALUSrc | MemToReg | RegWrite | MemWrite | MemRead | Branch | ALUOp | Push | Pop | MemWdata |
| ADD | 000000 | 000000 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| SUB | 000000 | 000001 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| AND | 000000 | 000100 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| OR | 000000 | 000101 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| XOR | 000000 | 000110 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| SLA | 000000 | 001000 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| SRA | 000000 | 001001 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| SRL | 000000 | 001010 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| NOT | 000000 | 000111 | 10 | 0 | 00 | 1 | 0 | 0 | 0 | 0010 | 0 | 0 | 0 |
| ADDI | 000001 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 |
| SUBI | 000010 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 0001 | 0 | 0 | 0 |
| ANDI | 000011 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 0100 | 0 | 0 | 0 |
| ORI | 000100 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 0101 | 0 | 0 | 0 |
| XORI | 000101 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 0110 | 0 | 0 | 0 |
| SLAI | 000110 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 0111 | 0 | 0 | 0 |
| SRAI | 000111 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 1000 | 0 | 0 | 0 |
| SRLI | 001000 | X | 00 | 1 | 00 | 1 | 0 | 0 | 0 | 1001 | 0 | 0 | 0 |
| LD | 001001 | X | 01 | 1 | 01 | 1 | 0 | 1 | 0 | 1010 | 0 | 0 | 0 |
| ST | 001010 | X | 00 | 0 | 00 | 0 | 1 | 0 | 0 | 1010 | 0 | 0 | 0 |
| LDSP | 001011 | X | 00 | 1 | 01 | 0 | 0 | 1 | 0 | 1010 | 1 | 0 | 0 |
| STSP | 001100 | X | 00 | 1 | 00 | 0 | 1 | 0 | 0 | 1010 | 0 | 1 | 1 |
| BR | 001101 | X | 00 | 0 | 00 | 0 | 0 | 0 | 1 | 1011 | 0 | 0 | 0 |
| BMI | 001110 | X | 00 | 0 | 00 | 0 | 0 | 0 | 1 | 1011 | 0 | 0 | 0 |
| BPL | 001111 | X | 00 | 0 | 00 | 0 | 0 | 0 | 1 | 1011 | 0 | 0 | 0 |
| BZ | 010000 | X | 00 | 0 | 00 | 0 | 0 | 0 | 1 | 1011 | 0 | 0 | 0 |
| MOVE | 010001 | X | 01 | 0 | 00 | 1 | 0 | 0 | 0 | 1100 | 0 | 0 | 0 |
| PUSH | 010010 | X | 00 | 0 | 00 | 0 | 0 | 0 | 0 | 1100 | 1 | 0 | 0 |
| POP | 010011 | X | 00 | 0 | 10 | 1 | 0 | 0 | 0 | 0000 | 0 | 1 | 0 |
| CALL | 010100 | X | 00 | 0 | 00 | 0 | 0 | 0 | 0 | 1100 | 1 | 0 | 0 |
| RET | 010101 | X | 00 | 0 | 10 | 1 | 0 | 0 | 0 | 0000 | 0 | 1 | 0 |
| NOP | 010110 | X | 00 | 0 | 00 | 0 | 0 | 0 | 0 | 0000 | 0 | 0 | 0 |

