|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| operation | opcode | Branch | MemRead | MemtoReg | RegWrite | MemWrite | Jump | Aluop | Alusrc | Extop | B\_inv  cin |
| ADD | 0000 | 0 | 0 | 0 | 1 | 0 | x | 10 | 0 | 0 | 0 |
| ADDI | 0001 | 0 | 0 | 0 | 1 | 0 | x | 10 | 1 | 0 | 0 |
| SUB | 0010 | 0 | 0 | 0 | 1 | 0 | x | 10 | 0 | 0 | 1 |
| SUBI | 0011 | 0 | 0 | 0 | 1 | 0 | x | 10 | 1 | 0 | 1 |
| AND | 0100 | 0 | 0 | 0 | 1 | 0 | x | 00 | 0 | 0 | x |
| ANDI | 0101 | 0 | 0 | 0 | 1 | 0 | x | 00 | 1 | 0 | x |
| OR | 0110 | 0 | 0 | 0 | 1 | 0 | x | 01 | 0 | 0 | x |
| ORI | 0111 | 0 | 0 | 0 | 1 | 0 | x | 01 | 1 | 0 | x |
| LW | 1000 | 0 | 1 | 1 | 1 | 0 | x | x | 1 | 1 | 0 |
| SW | 1001 | 0 | 0 | x | 0 | 1 | x | x | 1 | 1 | 0 |
| BEQ | 1010 | 1 | x | x | 0 | 0 | 0 | x | 0 | 0 | 1 |
| JUMP | 1011 | 0 | x | x | x | x | 1 | x | 0 | x | x |
| SLT | 1100 | 0 | 0 | 0 | 1 | 0 | x | 11 | 0 | 0 | x |
| XOR | 1101 | 0 | 0 | 0 | 1 | 0 | x | x | 0 | 0 | x |
| NOR | 1110 | 0 | 0 | 0 | 1 | 0 | x | x | 0 | 0 | x |
| MOV | 1111 | 0 | 0 | 0 | 1 | 0 | 0 | x | 0 | 0 | x |