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| --- | --- | --- |
| Name | Opcode | Discription |
| ADD | 0 & funct = 0 | R[ra] = R[ra] + R[rb] |
| SUB | 0 & funct = 1 | R[ra] = R[ra] – R[rb] |
| SLL | 0 & funct = 2 | R[ra] = R[ra]<6:0> . [0] |
| SRL | 0 & funct = 3 & rb = 0 | R[ra] = [0]. R[ra]<7:1> |
| SRA | 0 & funct = 3 & rb = 1 | R[ra] = R[ra]<7> . R[ra]<7:1> |
| AND | 0 & funct = 4 | R[ra] = R[ra] AND R[rb] |
| OR | 0 & funct = 5 | R[ra] = R[ra] OR R[rb] |
| XOR | 0 & funct = 6 | R[ra] = R[ra] XOR R[rb] |
| INV | 0 & funct = 7 | R[ra] = ~ R[rb] |
| CMP | 0 & funct = 9 | R[ra] – R[rb] |
| MOV | 1 | R[ra] = R[rb] |
| LDM | 2 | R[ra] = imm |
| LDD | 3 & rb = 0 | R[ra] = M[ea] |
| STD | 3 & rb = 1 | M[ea] = R[ra] |
| LDI | 4 & funct = 0 | R[ra] = M[R[rb]] |
| STI | 4 & funct = 1 | M[R[rb]] = R[ra] |
| ADDI | 5 & rb = 0 | R[ra] = R[ra] + imm |
| ANDI | 5 & rb = 1 | R[ra] = R[ra] AND imm |
| JE | 13 & ra = 0 | PC = PC + imm if Z = 1 |
| JNE | 13 & ra = 1 | PC = PC + imm if Z = 0 |
| JV | 13 & ra = 2 | PC = PC + imm if V = 1 |
| JN | 13 & ra = 3 | PC = PC + imm if S = 1 |
| JAL | 13 & ra = 4 | PC = imm; R7 = PC |
| JMP | 13 & ra = 5 | PC = imm |
| LOOP | 14 | R[ra] = R[ra] – 1; PC = PC + imm if Z = 0 else PC = PC + 1 |
| ADC | 7 | R[ra] = R[ra] + R[rb] + C |
| JR | 13 & ra = 6 | PC = R[ra] |