|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Instruction | RegDst | ALUSrc | MemToReg | RegWrite | MemRead | MemWrite | Branch | ALUOp1 | ALUOpO | Jump |
| R-format | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| lw | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| SW | X | 1 | X | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| beq | X | 0 | X | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| R-format JMNOR | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 |

* Control Unit
* ALU Control

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| opcode | ALUOp | Operation | funct | ALU function | ALU control |
| Iw | 00 | load word | XXXXXX | add | 010 |
| SW | 00 | store word | XXXXXX | add | 010 |
| beq | 01 | branch equal | XXXXXX | subtract | 110 |
| R-type | 10 | add | 0000 | add | 010 |
|  |  | subtract | 0010 | subtract | 110 |
|  |  | AND | 0100 | AND | 000 |
|  |  | OR | 0101 | OR | 001 |
|  |  | set-on-less-than | 1010 | set-on-less-than | 111 |
|  |  | NOR | 0101 | NOR | 100 |