**Semnale de control MIPS32**

Semnale de Branch opționale: ? ϵ {gez, ne, gtz}, se va înlocui ? cu o valoare din paranteză, dacă e cazul

Tipuri de operații care se pun în paranteză la ALUOp si ALUCtrl:

(+), (-), (&), (|), (^), (<<*l*), (<<*lv*), (>>*l*), (>>*a*), (<)

Semnificații: & - AND, | - OR, ^ *- XOR, l* *- logic, a - aritmetic, v - cu variabilă*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Instrucțiune** | **Opcode**  *Instr[31-26]* | **RegDst** | **ExtOp** | **ALUSrc** | **Branch** | **BranchOnGreaterThanZero** | **BranchOnGreaterThanOrEqualToZero** | **Jump** | **MemWrite** | **MemtoReg** | **Reg Write** | **ALUOp[5:0]** | **function**  *Instr[5-0]* | **ALUCtrl[5:0]** |
| add | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 100000 | 100000 |
| sub | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 100010 | 100010 |
| sll | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 000000 | 000000 |
| srl | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 000010 | 000010 |
| and | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 100100 | 100100 |
| or | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 100101 | 100101 |
| xor | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 100110 | 100110 |
| sra | 000000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 000000 | 000011 | 000011 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| addi | 001000 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 100000 |  | 100000 |
| lw | 100011 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 100000 |  | 100000 |
| sw | 101011 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 100000 |  | 100000 |
| beq | 000100 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 100010 |  | 100010 |
| bgtz | 000111 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 100010 |  | 100010 |
| bgez | 000001 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 100010 |  | 100010 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| j | 000010 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 000000 |  | 000000 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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