

Green sheet ISA Pipeline CPU

Stall

31:0

00000000000000000000000000000000

Data register-register

| | Id | | | Registers | | | Null |
|-----|-------|-------|----|-----------|------------|------------|----------------|
| | Type | Op | I | RD | RA | RB | Null |
| | 31:30 | 29:27 | 26 | 25:22 | 21:18 | 17:14 | 13:0 |
| | | | | | | | |
| ADD | 01 | 000 | 0 | Destino | Operando 1 | Operando 2 | 00000000000000 |
| SUB | 01 | 001 | 0 | Destino | Operando 1 | Operando 2 | 00000000000000 |
| AND | 01 | 010 | 0 | Destino | Operando 1 | Operando 2 | 00000000000000 |
| OR | 01 | 011 | 0 | Destino | Operando 1 | Operando 2 | 00000000000000 |
| MOV | 01 | 100 | 0 | Destino | 0000 | Operando 2 | 00000000000000 |
| MOD | 01 | 101 | 0 | Destino | Operando 1 | Operando 2 | 00000000000000 |
| EXP | 01 | 110 | 0 | Destino | Operando 1 | Operando 2 | 00000000000000 |
| CMP | 01 | 111 | 0 | 0000 | Operando 1 | Operando 2 | 00000000000000 |

Data register-immediate

| | Id | | | Registers | | |
|------|-------|-------|----|-----------|------------|------------------|
| | Tipo | Op | I | RD | RA | Immediate |
| | 31:30 | 29:27 | 26 | 25:22 | 21:18 | 17:0 |
| | | | | | | |
| ADDI | 01 | 000 | 1 | Destino | Operando 1 | Imm = Operando 2 |
| SUBI | 01 | 001 | 1 | Destino | Operando 1 | Imm = Operando 2 |
| ANDI | 01 | 010 | 1 | Destino | Operando 1 | Imm = Operando 2 |
| ORI | 01 | 011 | 1 | Destino | Operando 1 | Imm = Operando 2 |
| MOV | 01 | 100 | 1 | Destino | 0000 | Imm = Operando 1 |
| MOD | 01 | 101 | 1 | Destino | Operando 1 | Imm = Operando 2 |
| EXP | 01 | 110 | 1 | Destino | Operando 1 | Imm = Operando 2 |
| CMPI | 01 | 111 | 1 | 0000 | Operando 1 | Imm = Operando 2 |

Memoria

| | Id | | | Addressing | | |
|-----|-------|----|-------|--------------------|--------------|--------------|
| | Type | Op | Null | RD | RA | Immediate |
| | 31:30 | 29 | 28:26 | 25:22 | 19:16 | 17:0 |
| | | | | | | |
| LDR | 10 | 0 | 000 | RD = MEM[RA + IMM] | RA = Mem dir | Imm = offset |
| STR | 10 | 1 | 000 | MEM[RA + Imm] = RD | RA = Mem dir | Imm = offset |

Control

| Id | | | Null | Instruction number |
|-------|-------|-------|-------|--------------------|
| Type | Op | Null | Null | Immediate |
| 31:30 | 29:28 | 27:26 | 25:18 | 17:0 |
| JMP | 11 | 00 | 00 | 00000000 |
| JEQ | 11 | 01 | 00 | 00000000 |
| JNE | 11 | 10 | 00 | 00000000 |