

Instruções ADDI

1. addi sp,zero,0x33

antes:

pc	instruction	WriteData	MemWrite	Branch
00	033000113	00	...	...
00	33 33 00 00	...	...	...

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 00	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 00			
x12 a2 : 00	a3 : 00	a4 : 00	a5 : 00			

depois:

pc	instruction	WriteData	MemWrite	Branch
04	01100593	00	...	...
00	11 11 00 00	...	...	...

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 00			
x12 a2 : 00	a3 : 00	a4 : 00	a5 : 00			

2. addi a1,zero,0x11

antes:

pc	instruction	WriteData	MemWrite	Branch
04	01100593	00	...	...
00	11 11 00 00	...	...	...

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 00			
x12 a2 : 00	a3 : 00	a4 : 00	a5 : 00			

depois:

pc	instruction	WriteData	MemWrite	Branch
08	02200613	00		
00	22 22 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 00	a3 : 00	a4 : 00	a5 : 00			

3. addi a2,zero,0x22

antes:

pc	instruction	WriteData	MemWrite	Branch
08	02200613	00		
00	22 22 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 00	a3 : 00	a4 : 00	a5 : 00			

depois:

pc	instruction	WriteData	MemWrite	Branch
0C	02258613	00		
11	22 33 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 22	a3 : 00	a4 : 00	a5 : 00			

4. addi a2,a1,0x22

antes:

pc	instruction	WriteData	MemWrite	Branch
0C	02258613	00		
11	22 33 00	00		

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 22	a3 : 00	a4 : 00	a5 : 00			

depois:

pc	instruction	WriteData	MemWrite	Branch
10	00B60463	00		*
33	11 22 00	00		

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 33	a3 : 00	a4 : 00	a5 : 00			

Instruções BEQ

1. beq a2,a1,0x08

antes:

pc	instruction	WriteData	MemWrite	Branch
10	00B60463	00		*
33	11 22 00	00		

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 33	a3 : 00	a4 : 00	a5 : 00			

depois:

pc	instruction	WriteData	MemWrite	Branch
14	00260463	00	*	
33	33 00 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 22	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 33	a3 : 00	a4 : 00	a5 : 00			

2. beq a2,sp,0x08

antes:

pc	instruction	WriteData	MemWrite	Branch
14	00260463	00	*	
33	33 00 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 22	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 33	a3 : 00	a4 : 00	a5 : 00			

depois:

pc	instruction	WriteData	MemWrite	Branch
1C	00B606B3	00		
33	11 44 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 33	a3 : 00	a4 : 00	a5 : 00			

Instruções ADD

1. add a3,a2,a1

antes:

```

pc          instruction      WriteData MemWrite Branch
1C  00B606B3  00.....
33  11  44  00  00.....

SrcA      SrcB    ALUResult Result ReadData MemtoReg RegWrite

x0  zero: 00  ra : 00  sp : 33  gp : 00
x4  tp   : 00  t0 : 00  t1 : 00  t2 : 00
x8  s0   : 00  s1 : 00  a0 : 00  a1 : 11
x12 a2   : 33  a3 : 00  a4 : 00  a5 : 00

```

depuis:

```

pc          instruction      WriteData MemWrite Branch
20  00D607B3  00.....
33  44  77  00  00.....

SrcA      SrcB    ALUResult Result ReadData MemtoReg RegWrite

x0  zero: 00  ra : 00  sp : 33  gp : 00
x4  tp   : 00  t0 : 00  t1 : 00  t2 : 00
x8  s0   : 00  s1 : 00  a0 : 00  a1 : 11
x12 a2   : 33  a3 : 44  a4 : 00  a5 : 00

```

2. add a5,a2,a3

antes:

```

pc          instruction      WriteData MemWrite Branch
20  00D607B3  00.....
33  44  77  00  00.....

SrcA      SrcB    ALUResult Result ReadData MemtoReg RegWrite

x0  zero: 00  ra : 00  sp : 33  gp : 00
x4  tp   : 00  t0 : 00  t1 : 00  t2 : 00
x8  s0   : 00  s1 : 00  a0 : 00  a1 : 11
x12 a2   : 33  a3 : 44  a4 : 00  a5 : 00

```

depuis:

pc	instruction	WriteData	MemWrite	Branch
24	0000000000	00		
00	00 00 00 00 00			

SrcA	SrcB	ALUResult	Result	ReadData	MemtoReg	RegWrite
x0 zero: 00	ra : 00	sp : 33	gp : 00			
x4 tp : 00	t0 : 00	t1 : 00	t2 : 00			
x8 s0 : 00	s1 : 00	a0 : 00	a1 : 11			
x12 a2 : 33	a3 : 44	a4 : 00	a5 : 77			