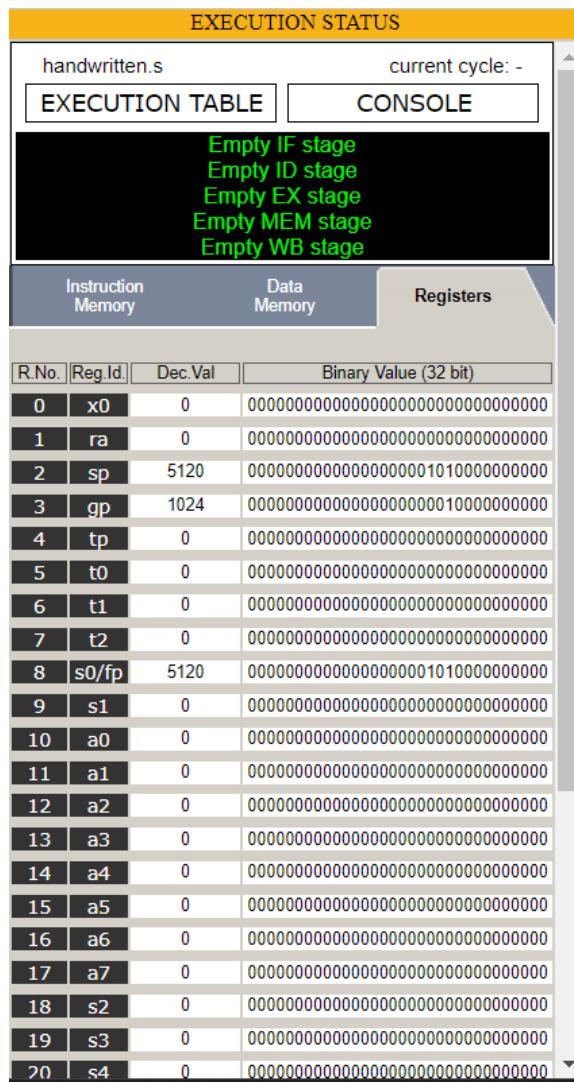
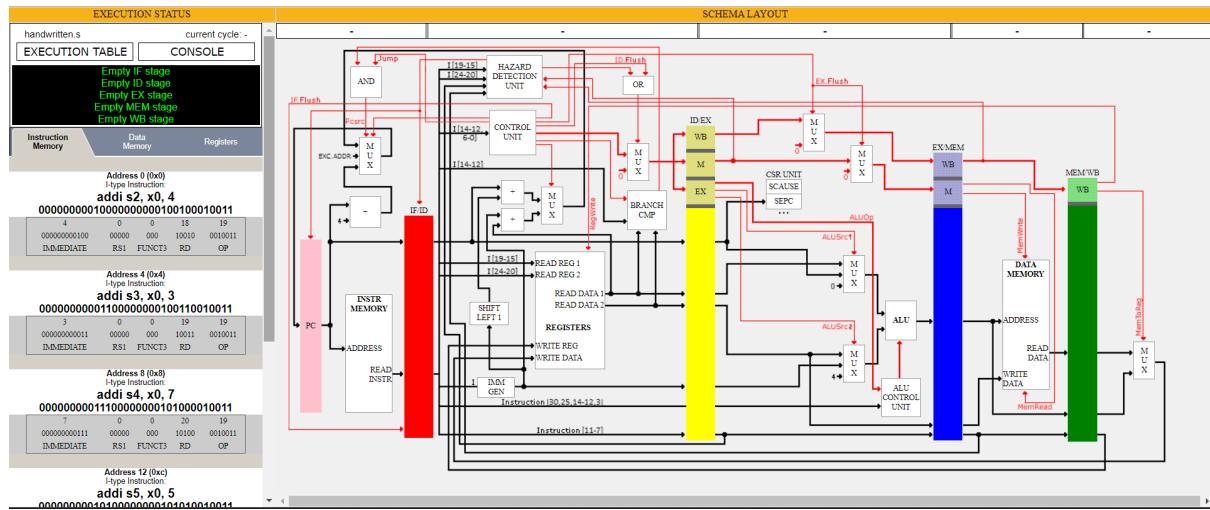
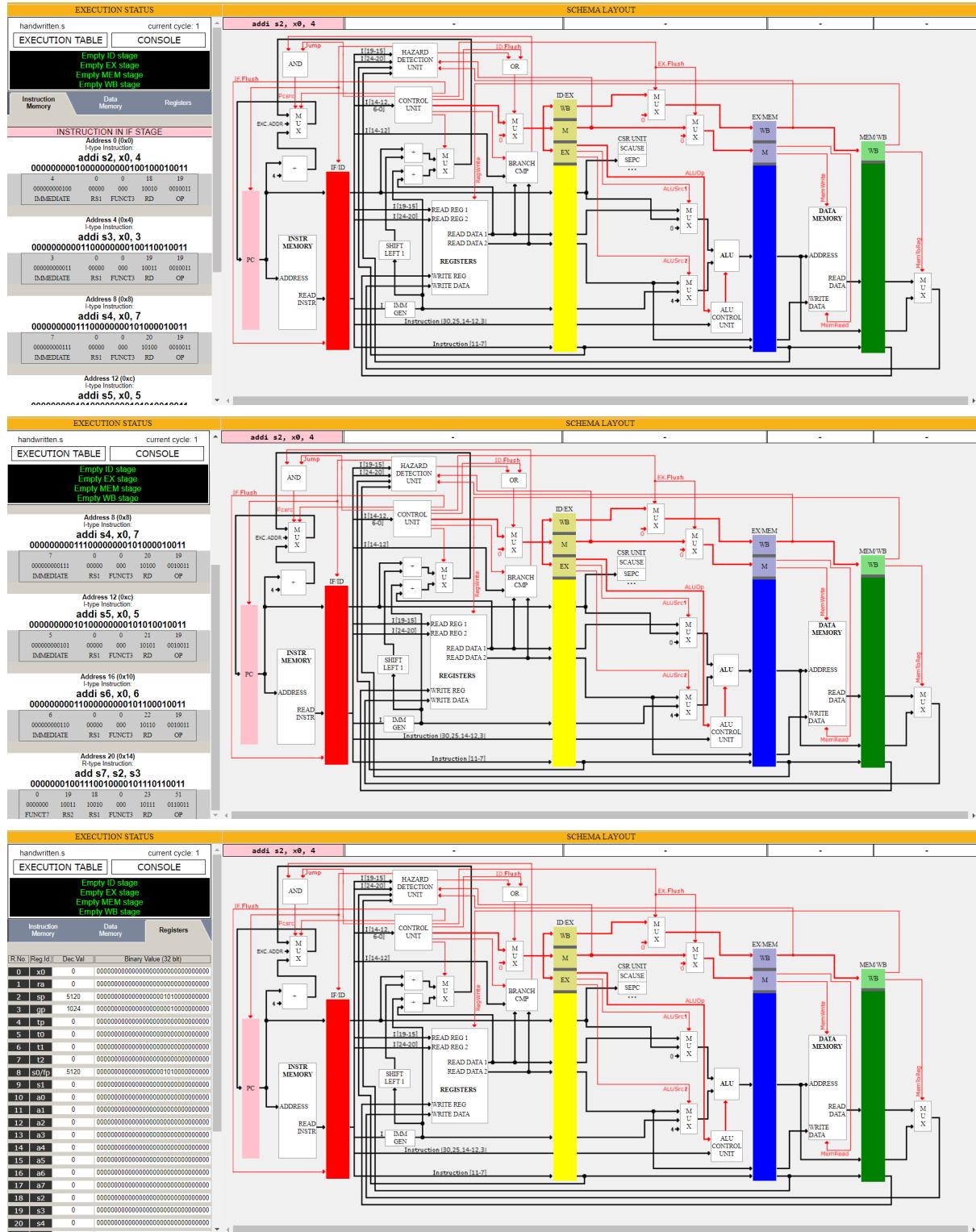


Roteiro 08

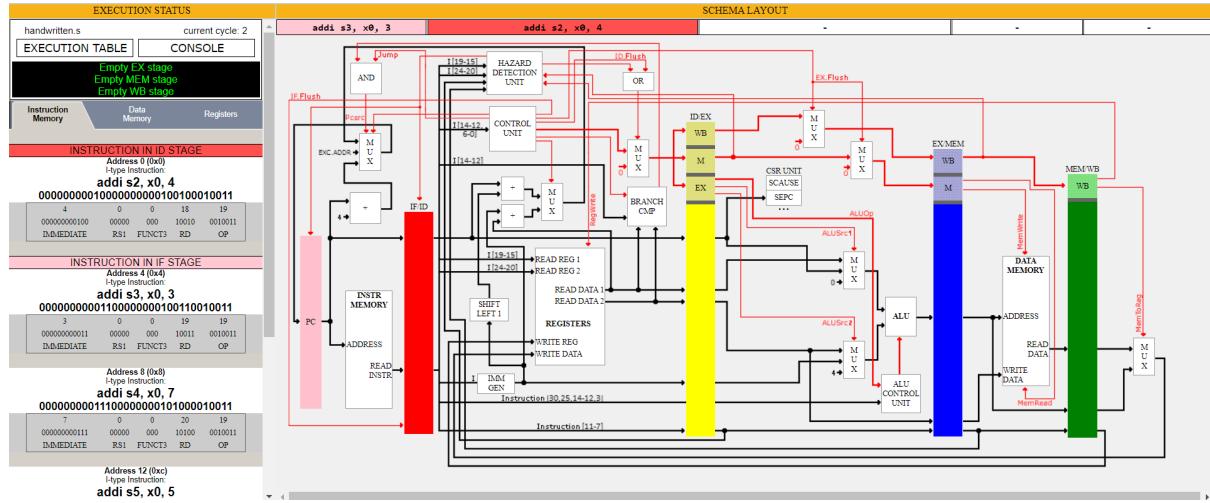
Segundo Programa

```
addi s2, zero, 4
add s3, zero, s2
addi s4, zero, 7
addi s5, zero, 5
addi s6, zero, 6
add s7, s6, s1
```



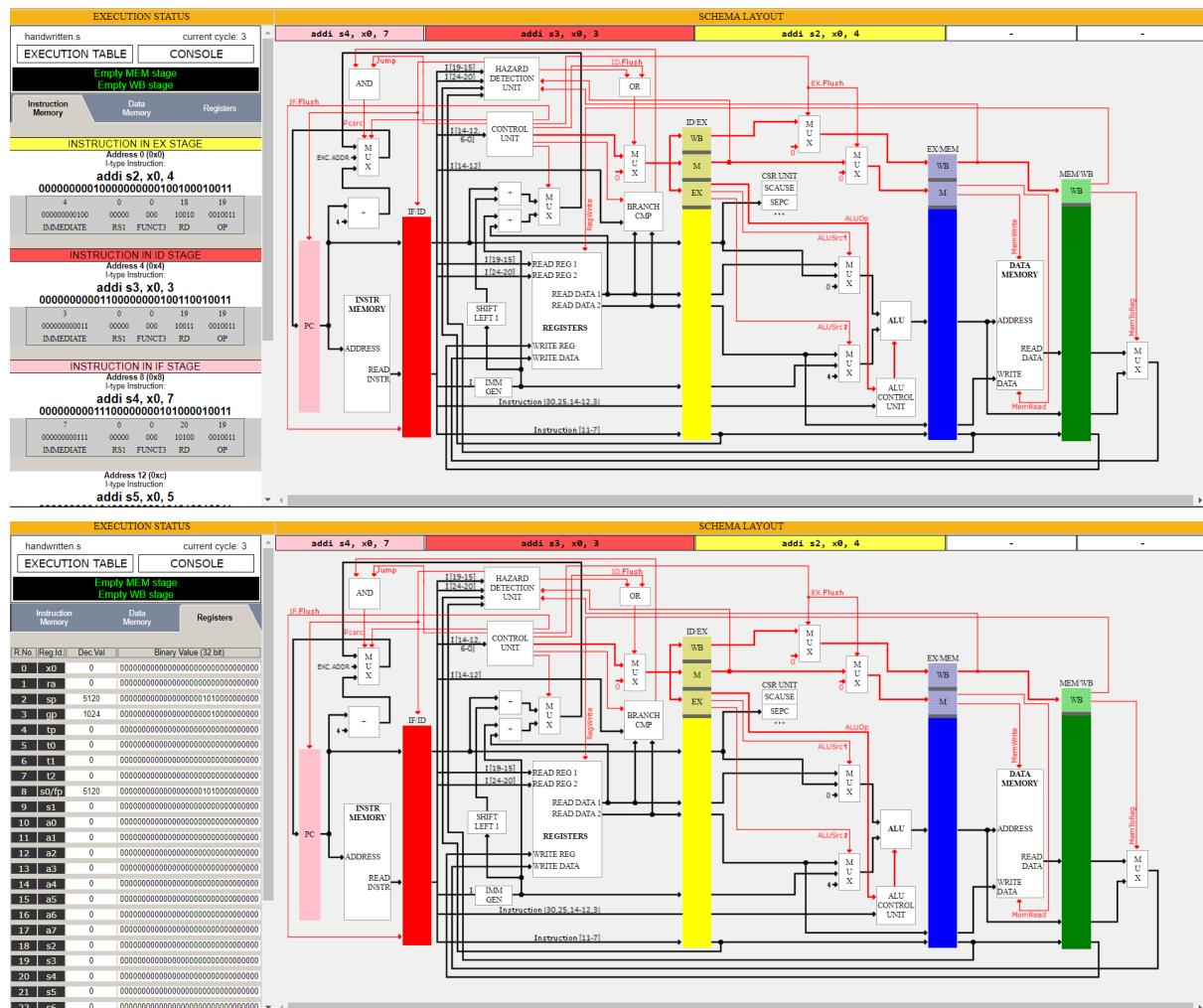


2° Step

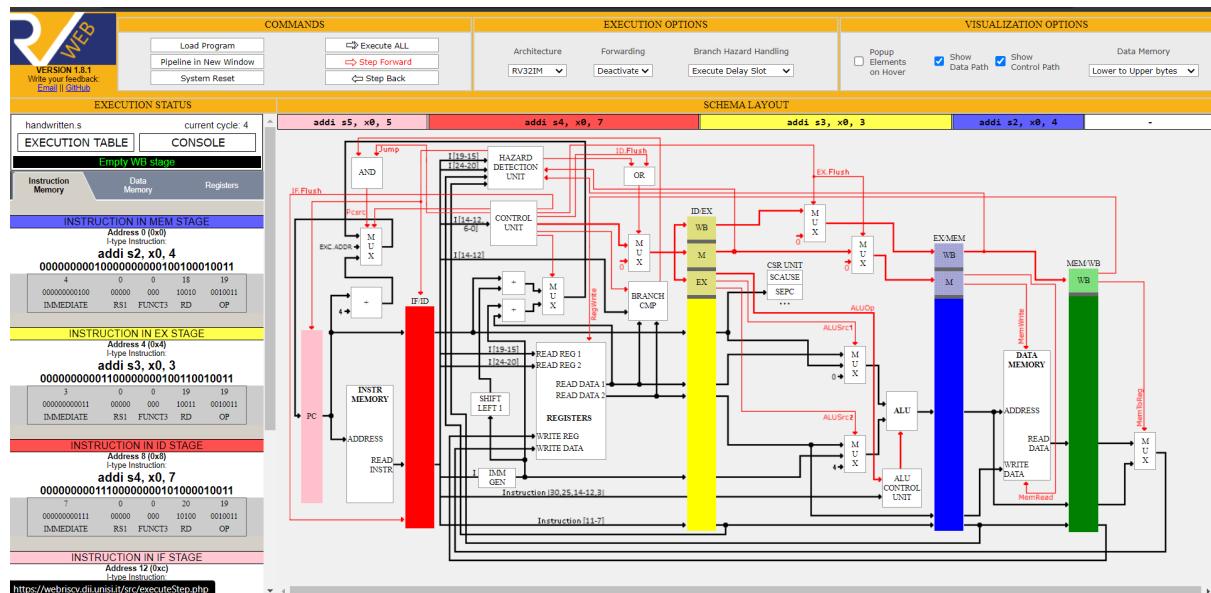


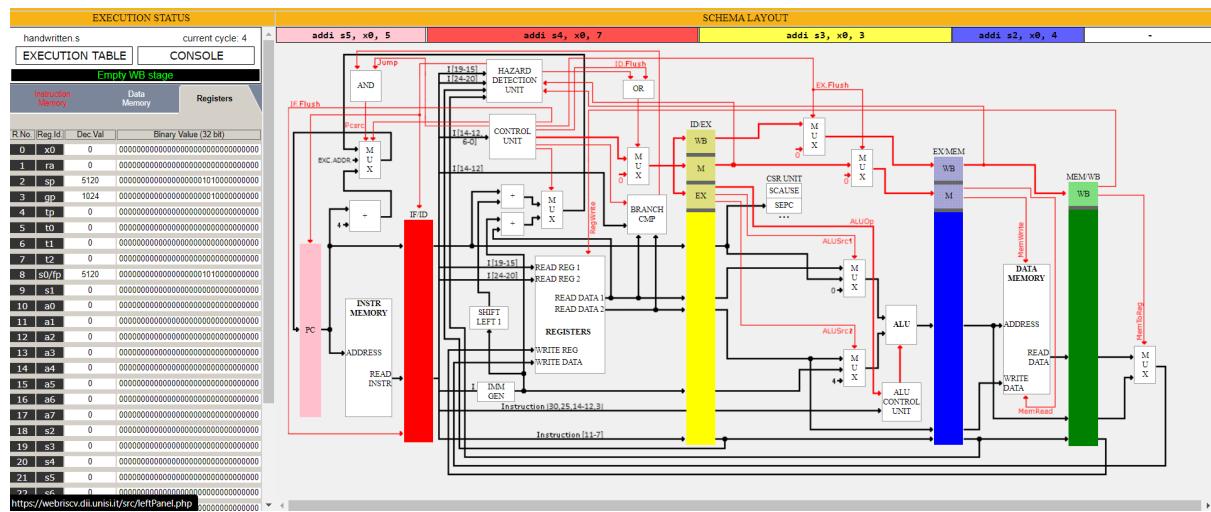
EXECUTION STATUS				
handwritten.s		current cycle: 2		
EXECUTION TABLE		CONSOLE		
Empty EX stage Empty MEM stage Empty WB stage				
Instruction Memory		Data Memory	Registers	
R.No.	Reg.Id.	Dec.Val	Binary Value (32 bit)	
0	x0	0	00000000000000000000000000000000	
1	ra	0	00000000000000000000000000000000	
2	sp	5120	00000000000000000000000000000000101000000000000	
3	gp	1024	000000000000000000000000000000001000000000000	
4	tp	0	00	
5	t0	0	00	
6	t1	0	00	
7	t2	0	00	
8	s0/fp	5120	00000000000000000000000000000000101000000000000	
9	s1	0	00	
10	a0	0	00	
11	a1	0	00	
12	a2	0	00	
13	a3	0	00	
14	a4	0	00	
15	a5	0	00	
16	a6	0	00	
17	a7	0	00	
18	s2	0	00	
19	s3	0	00	
20	s4	0	00	
21	s5	0	00	

3° Step

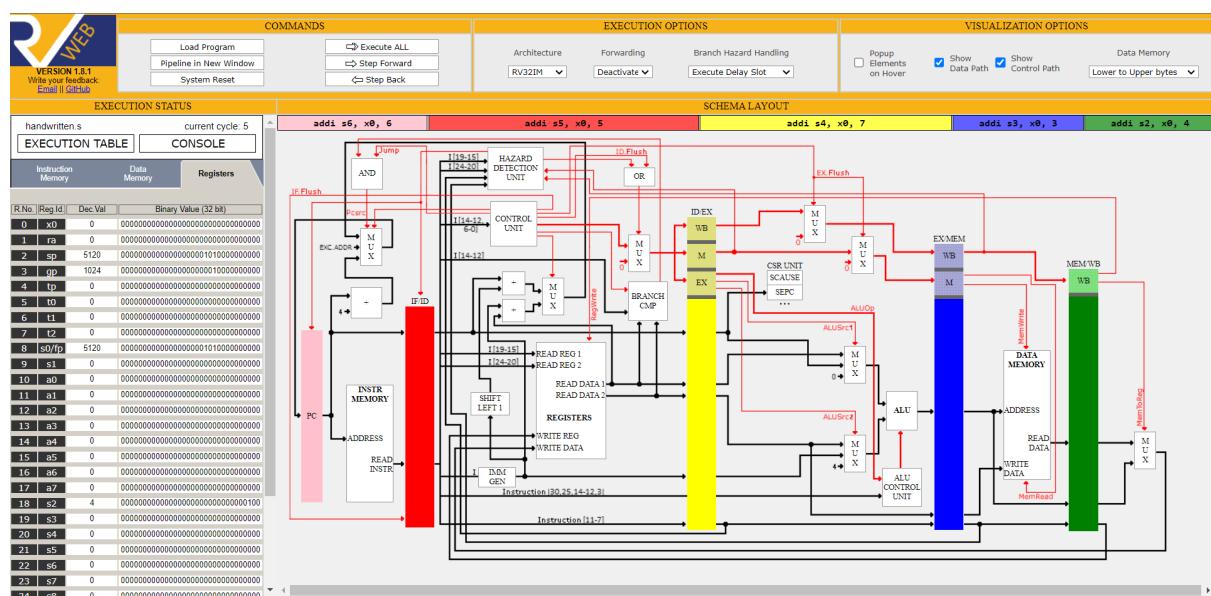
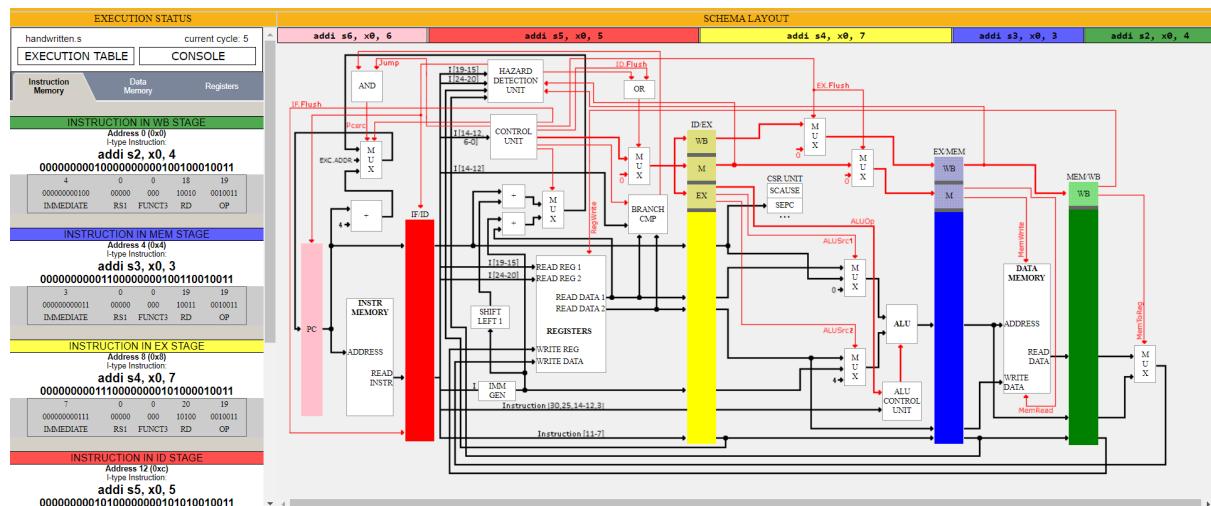


4° Step

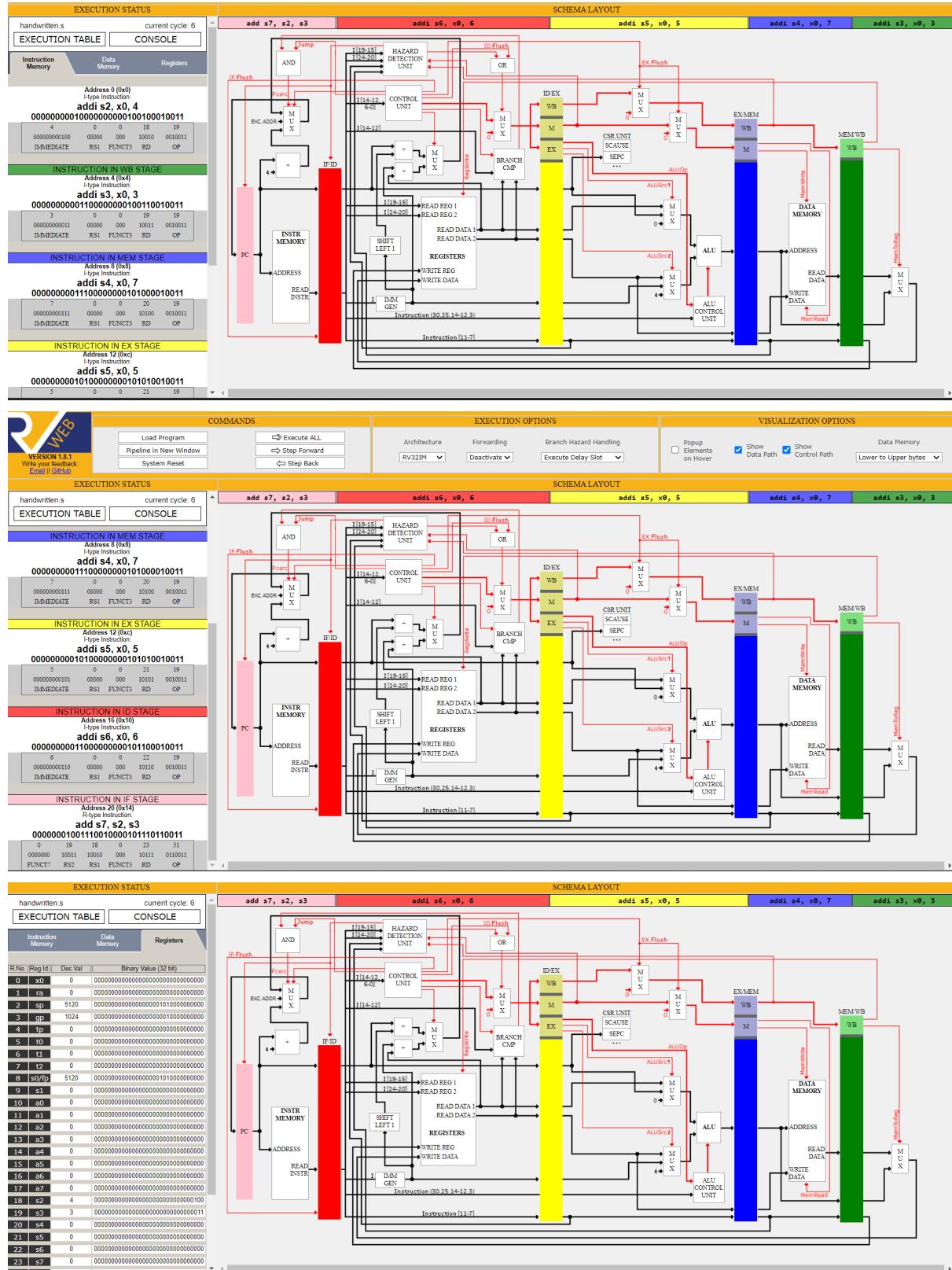




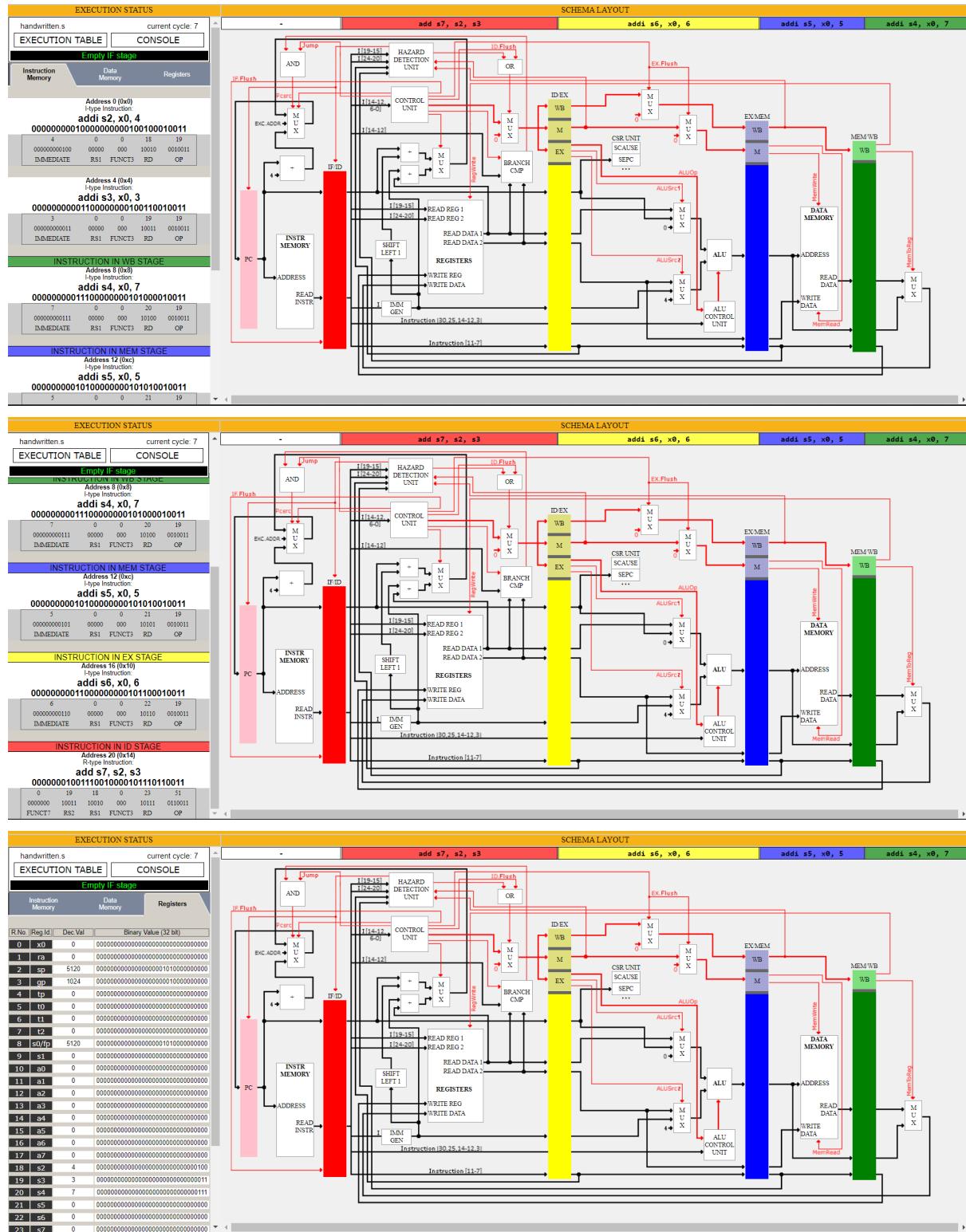
5° Step



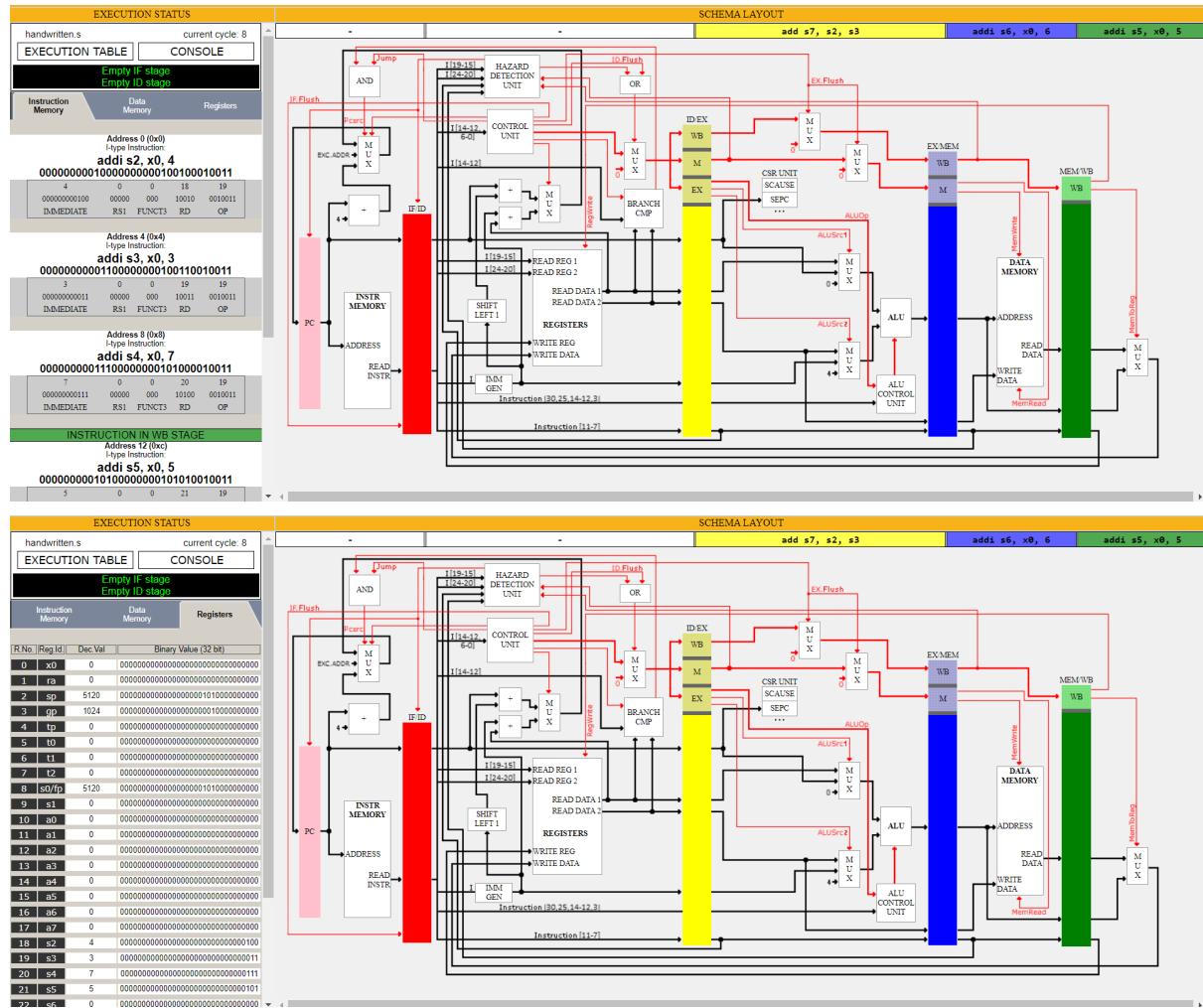
6° Step



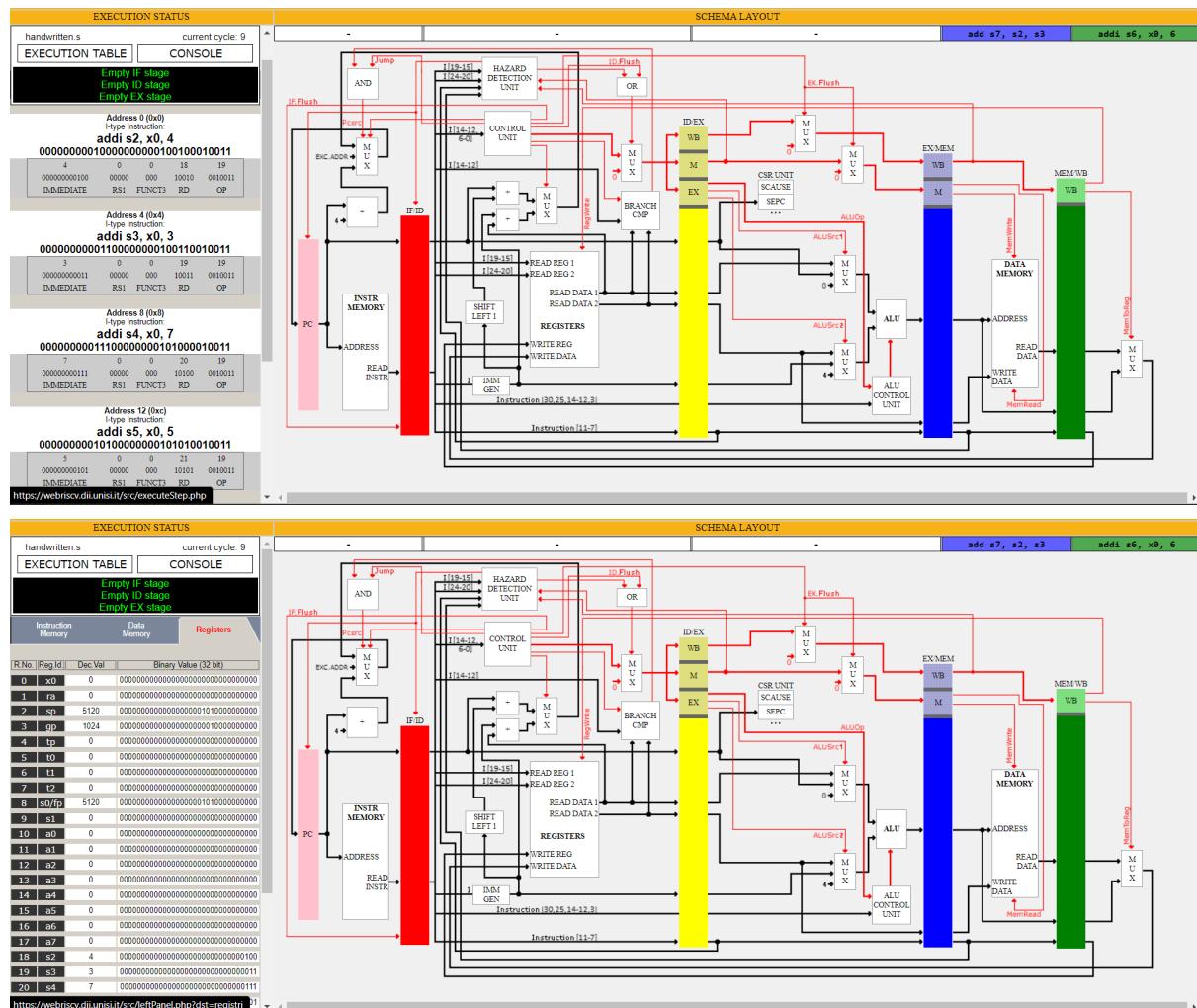
7° Step



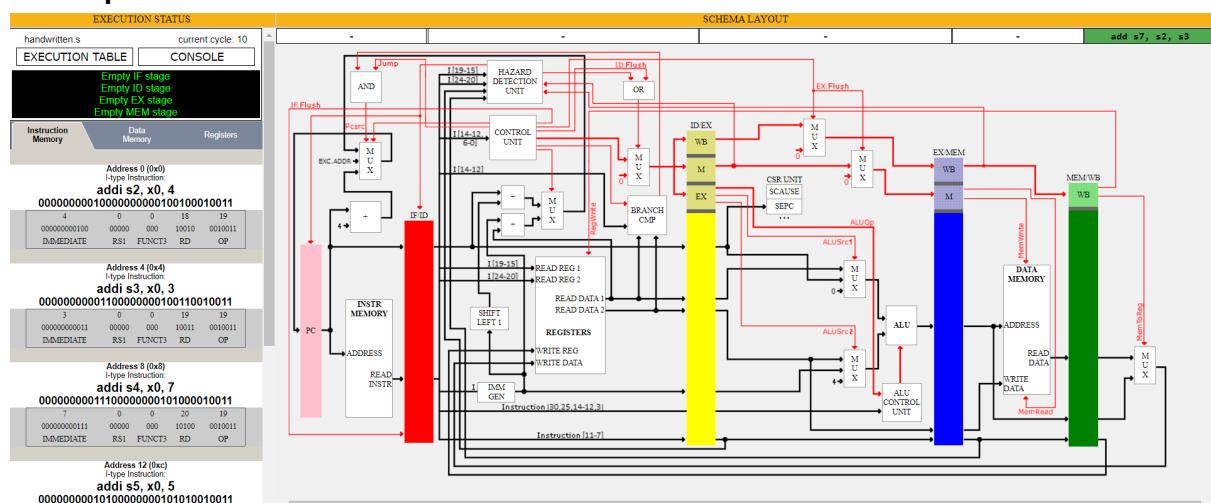
8° Step

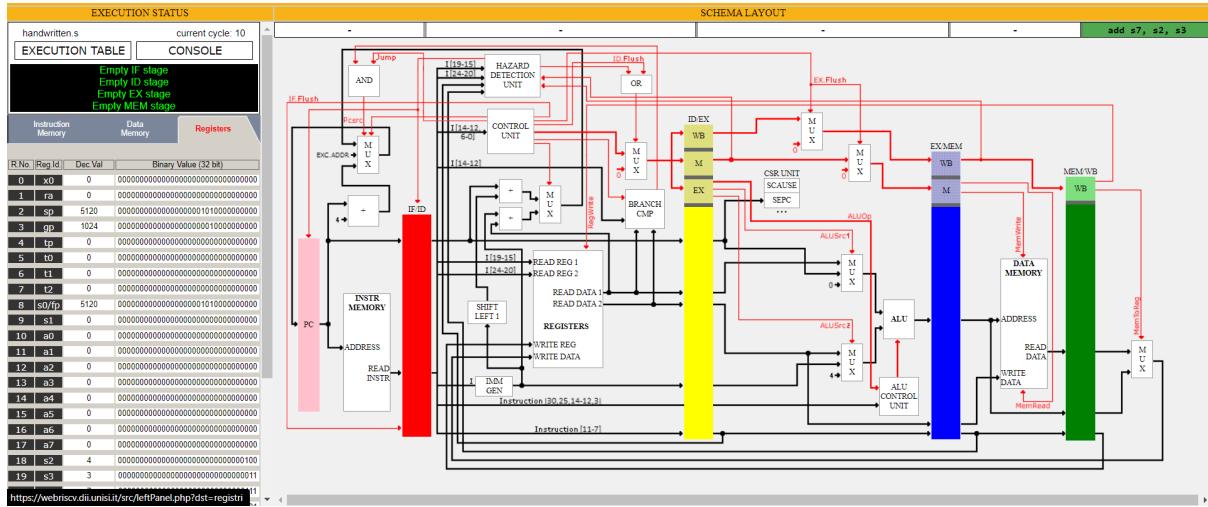


9° Step

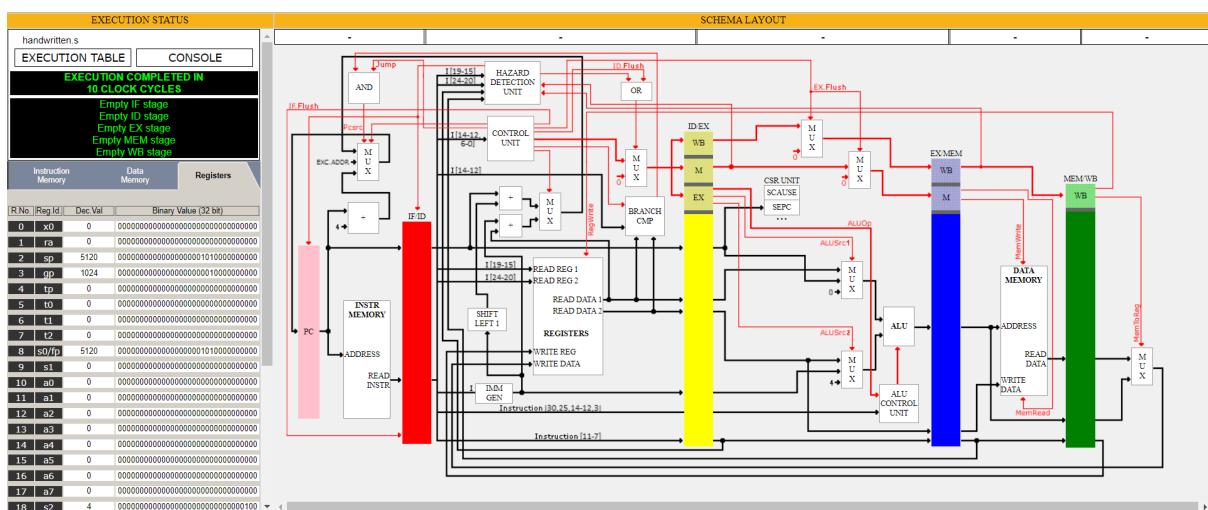
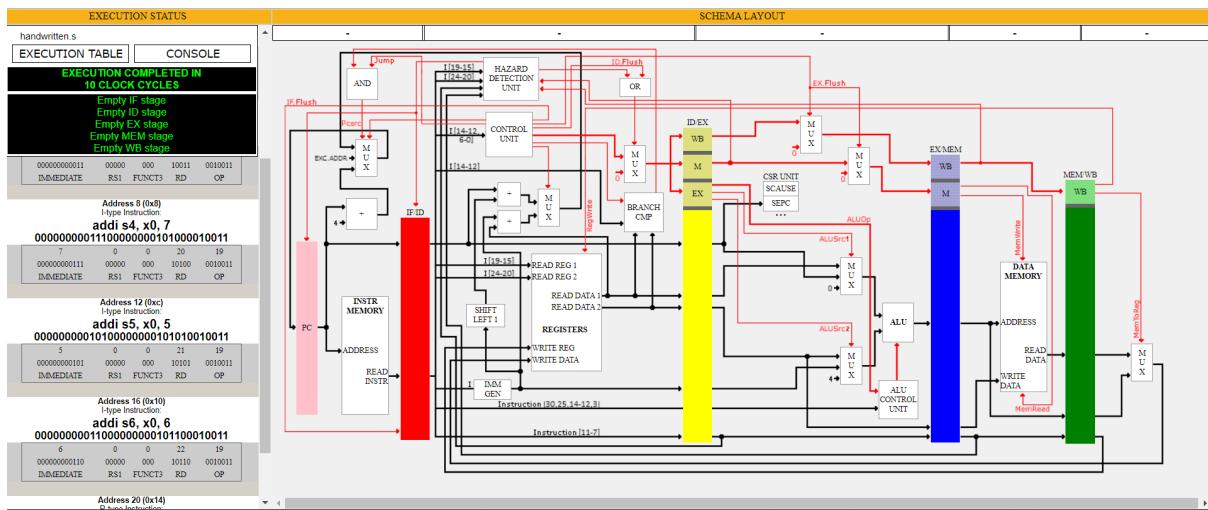


10° Step





11° Step



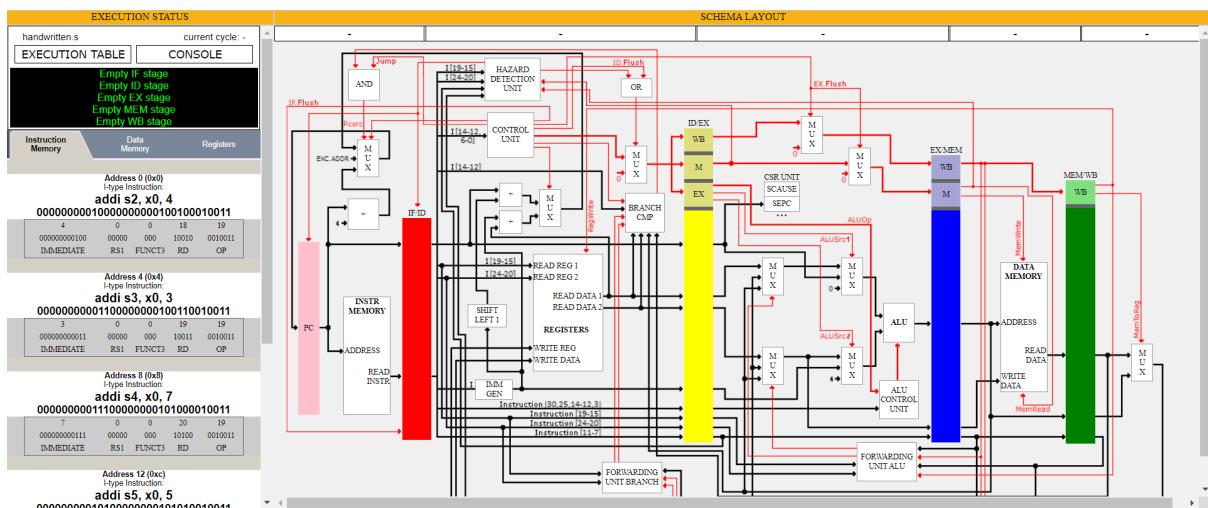
c)

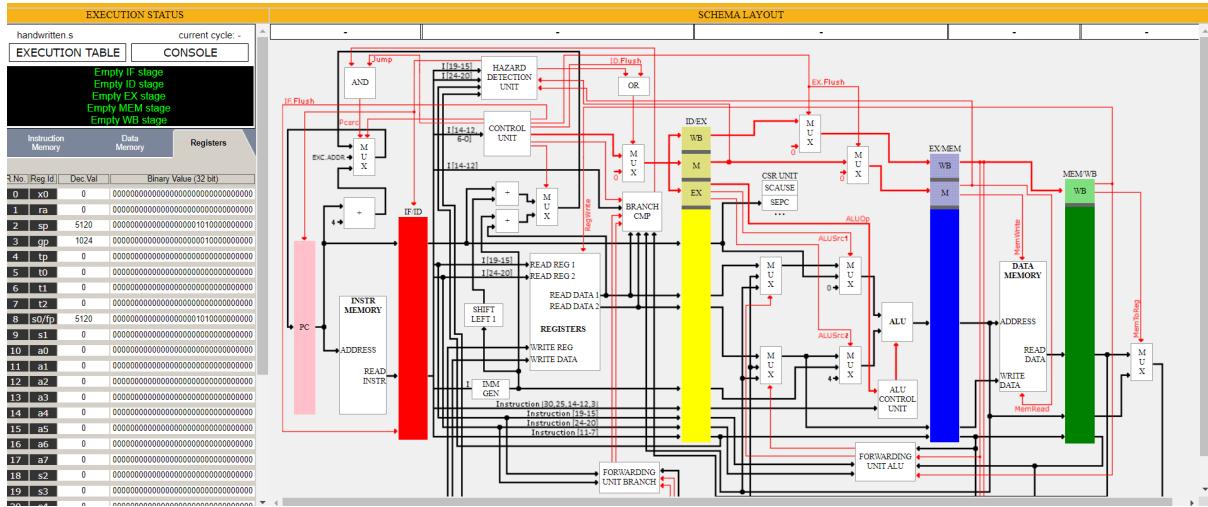
EXECUTION TABLE

FULL LOOPS	CPU Cycles									
Instruction	1	2	3	4	5	6	7	8	9	10
addi s2, x0, 4	F	D	X	M	W					
addi s3, x0, 3		F	D	X	M	W				
addi s4, x0, 7			F	D	X	M	W			
addi s5, x0, 5				F	D	X	M	W		
addi s6, x0, 6					F	D	X	M	W	
add s7, s2, s3						F	D	X	M	W

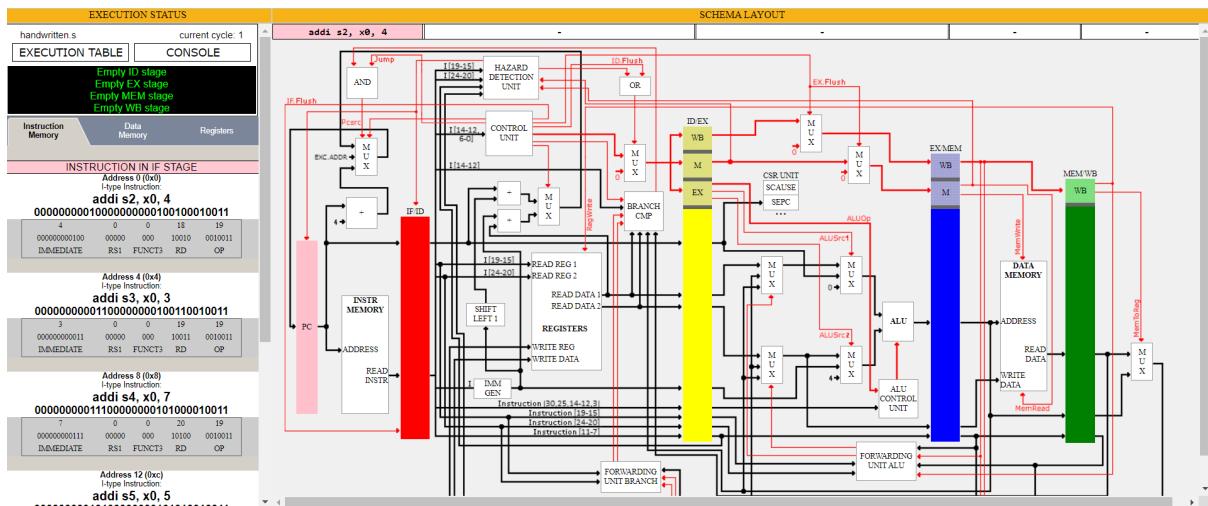
d) Foram necessários 10 ciclos

2.

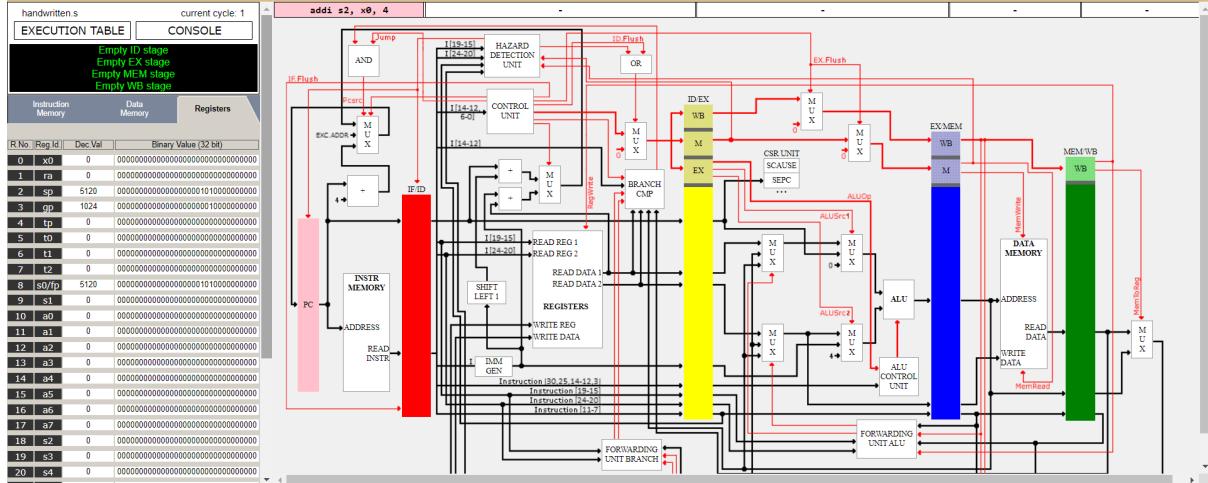




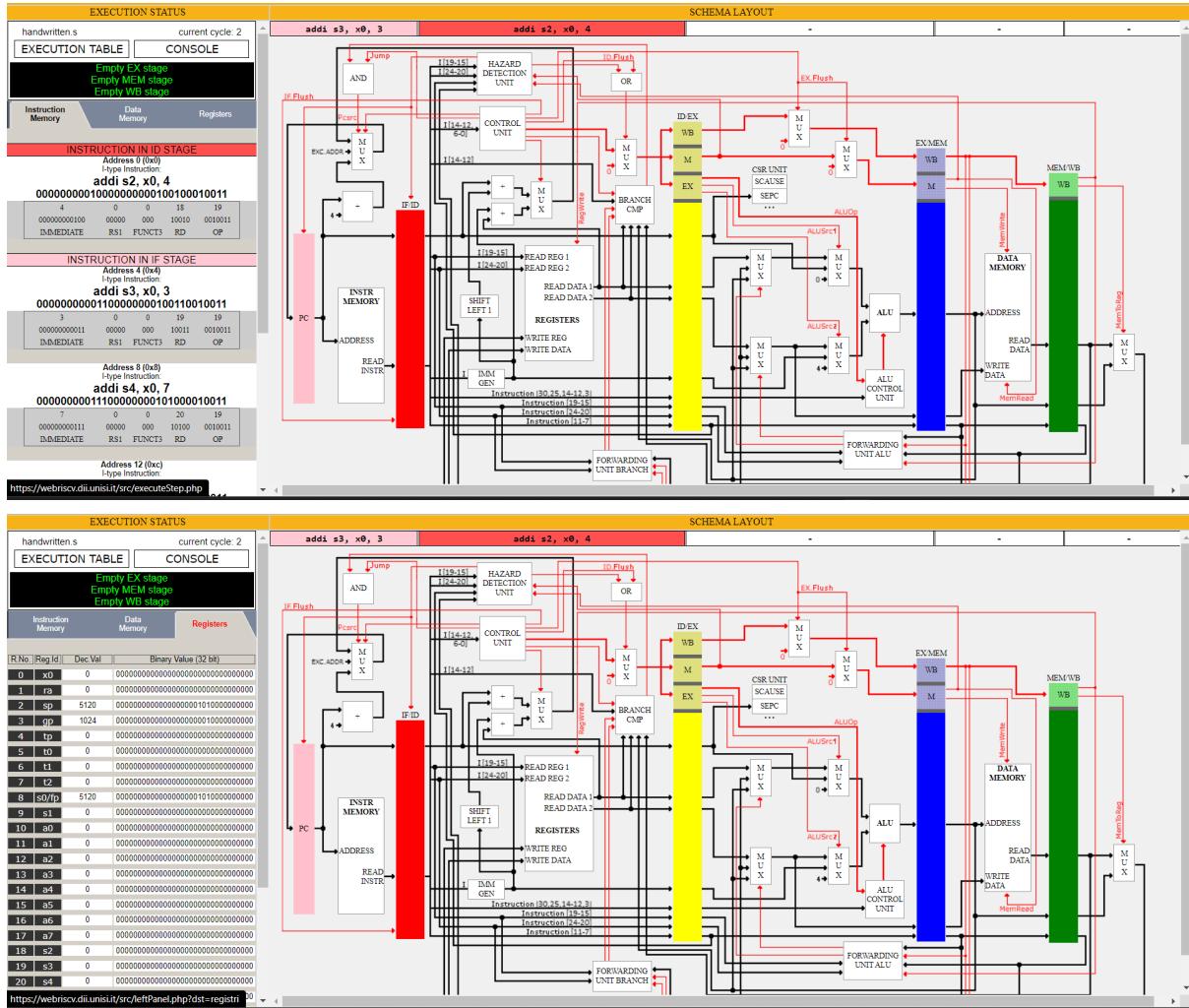
1° Step



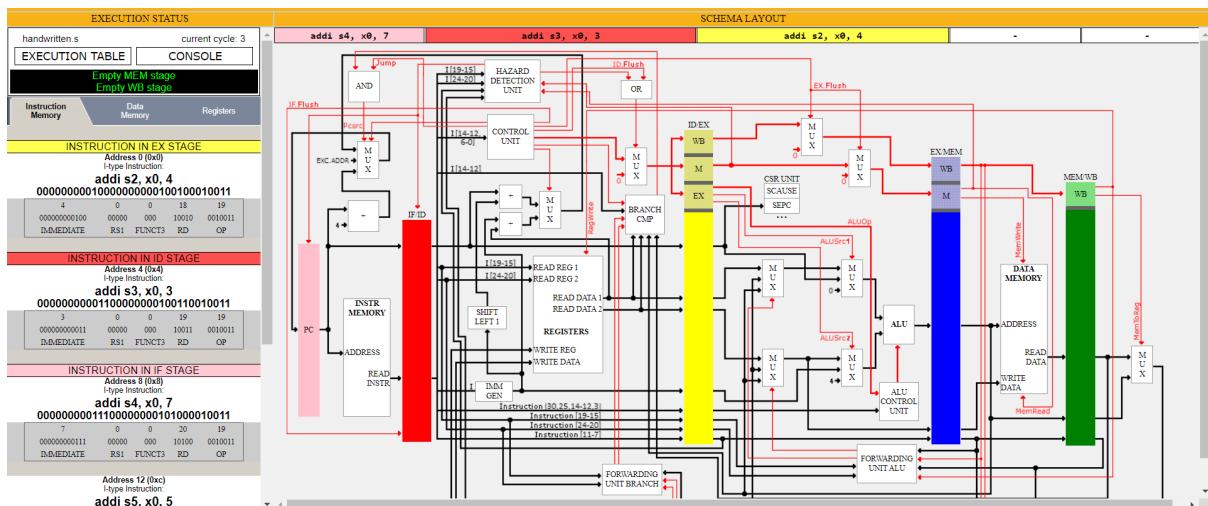
Address 12 (0xc)
Hyper Instruction
addi s5, x0, 5

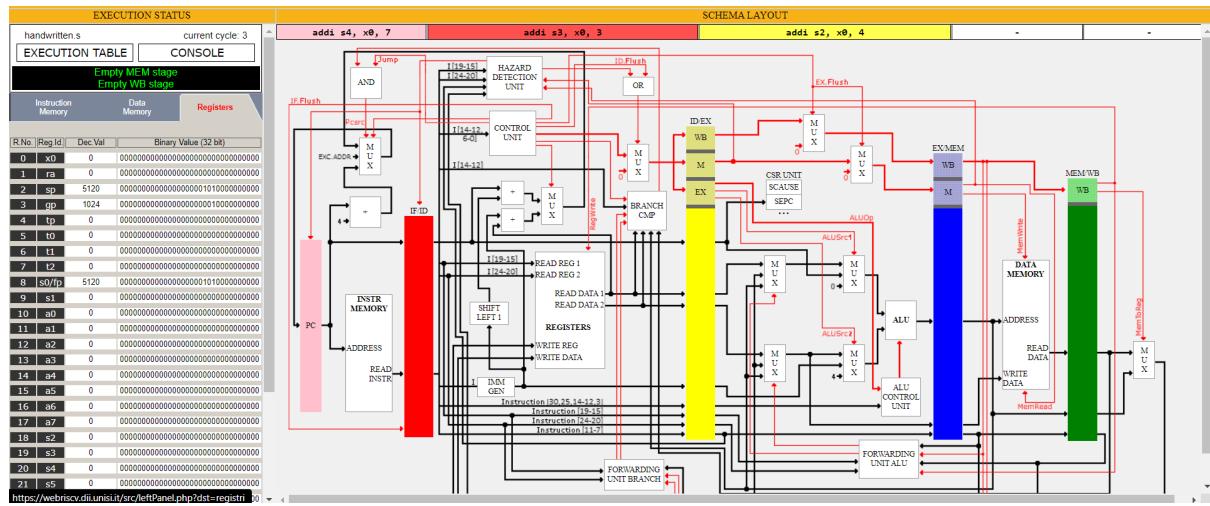


2° Step

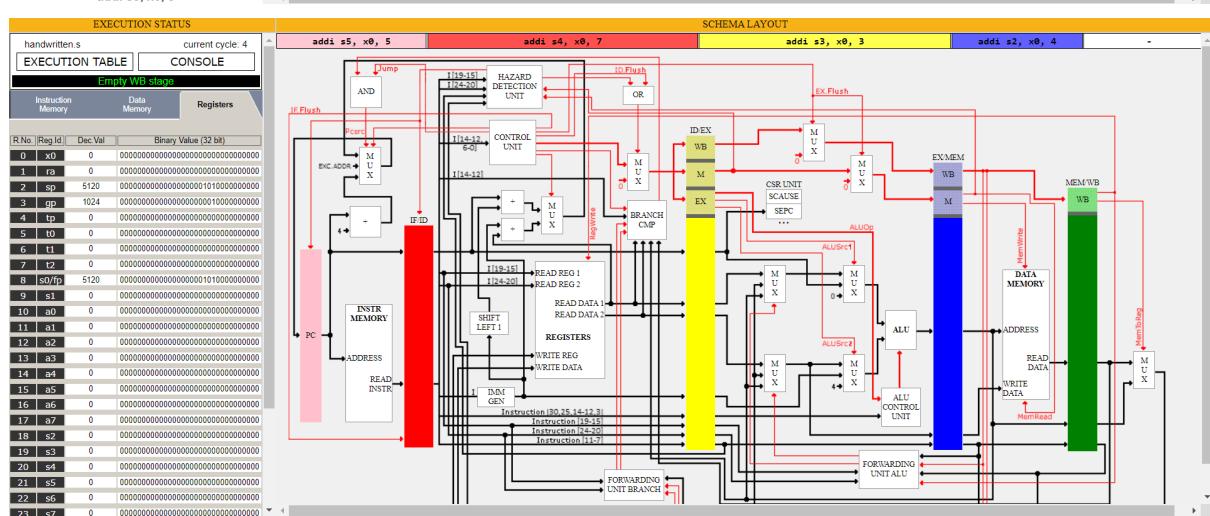
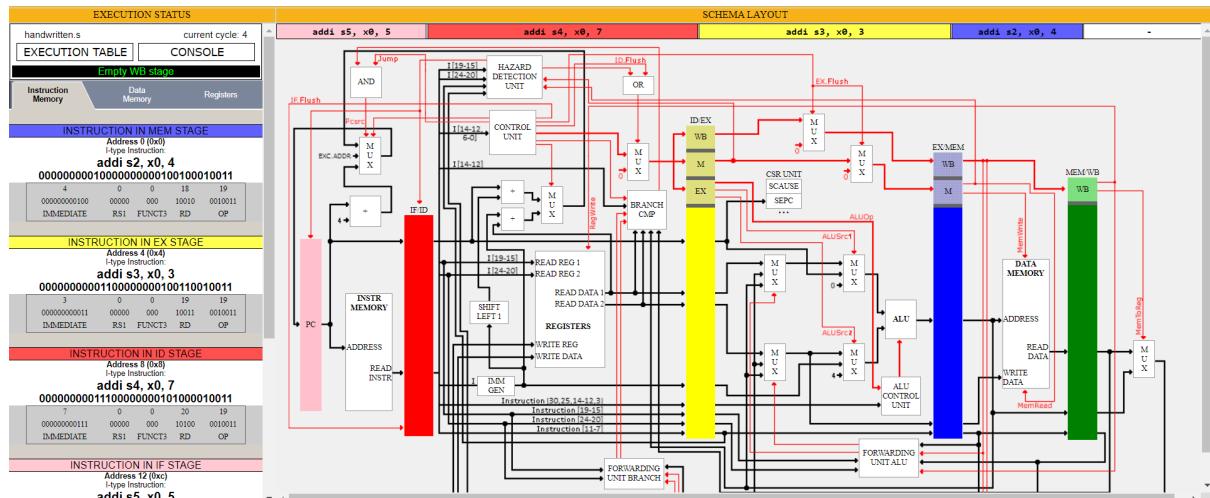


3° Step

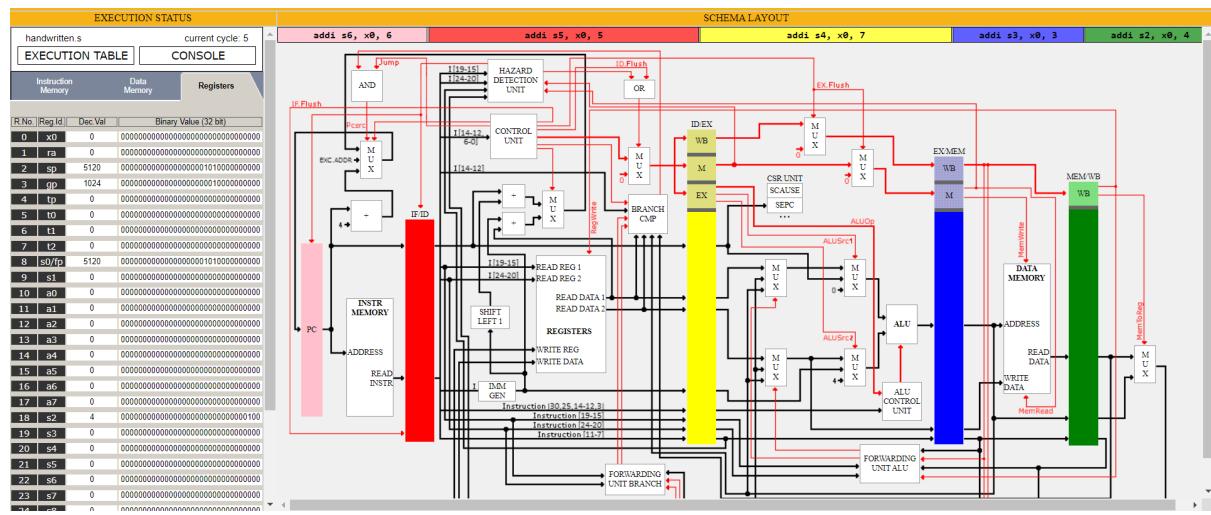
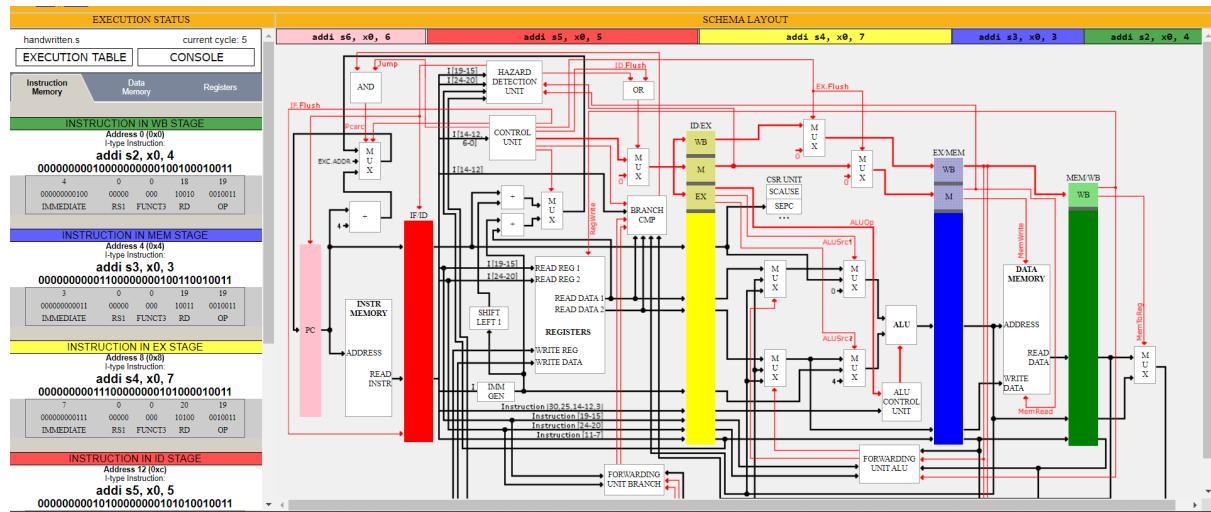




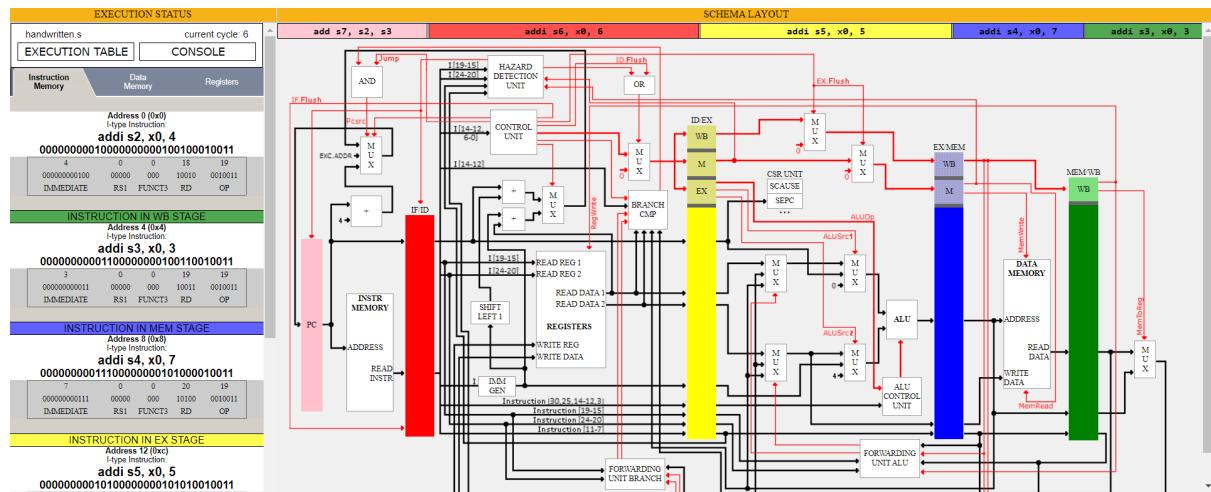
4° Step



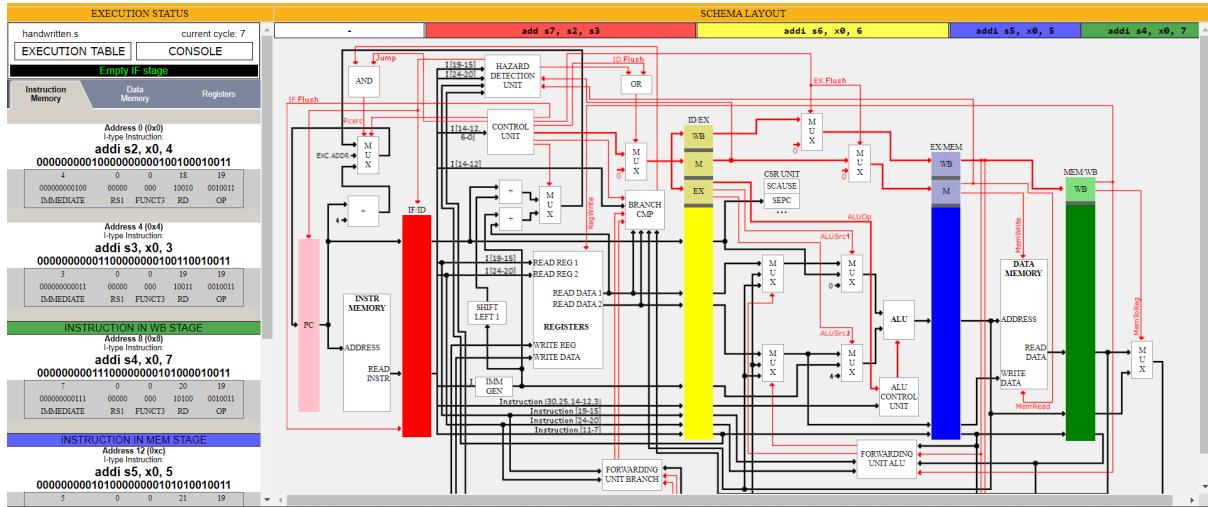
5° Step



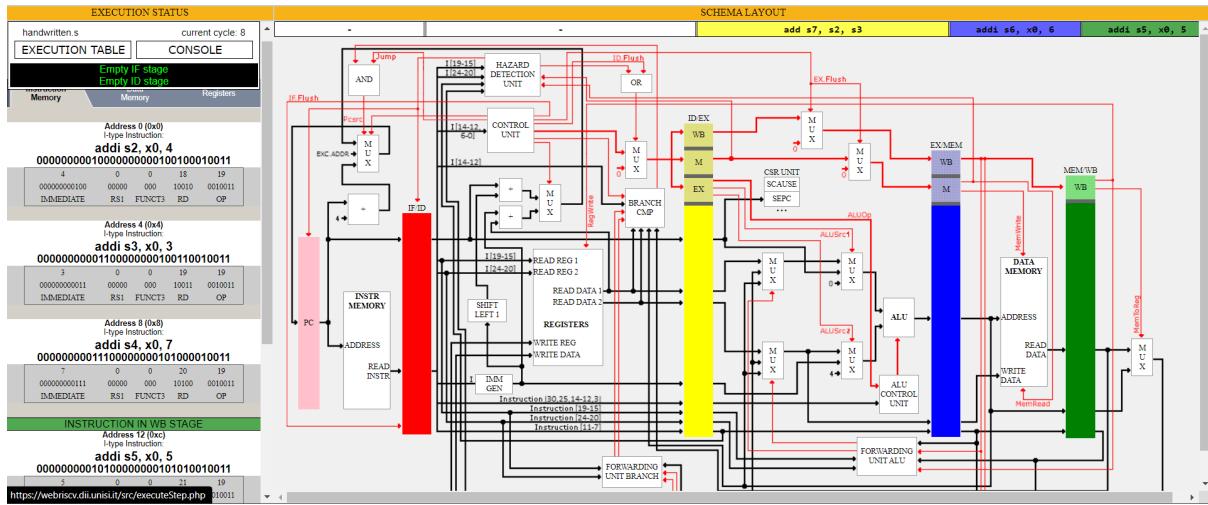
6° Step



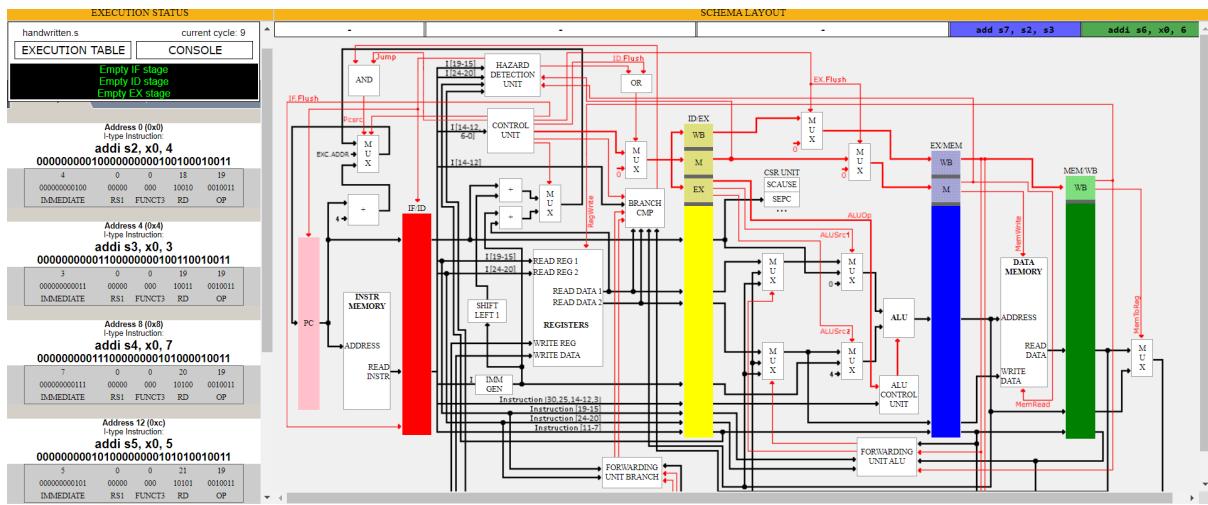
7° Step



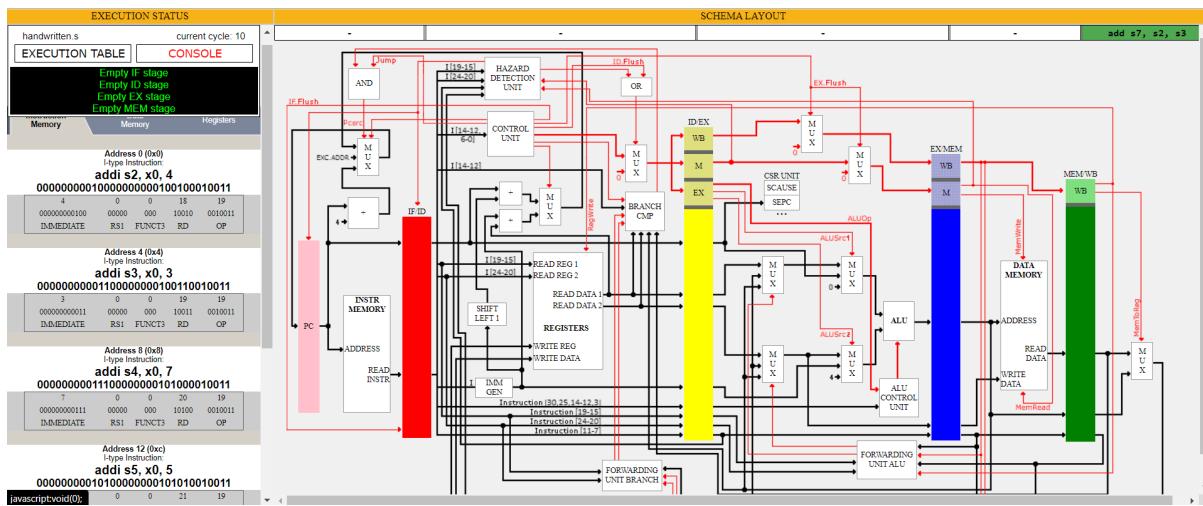
8° Step



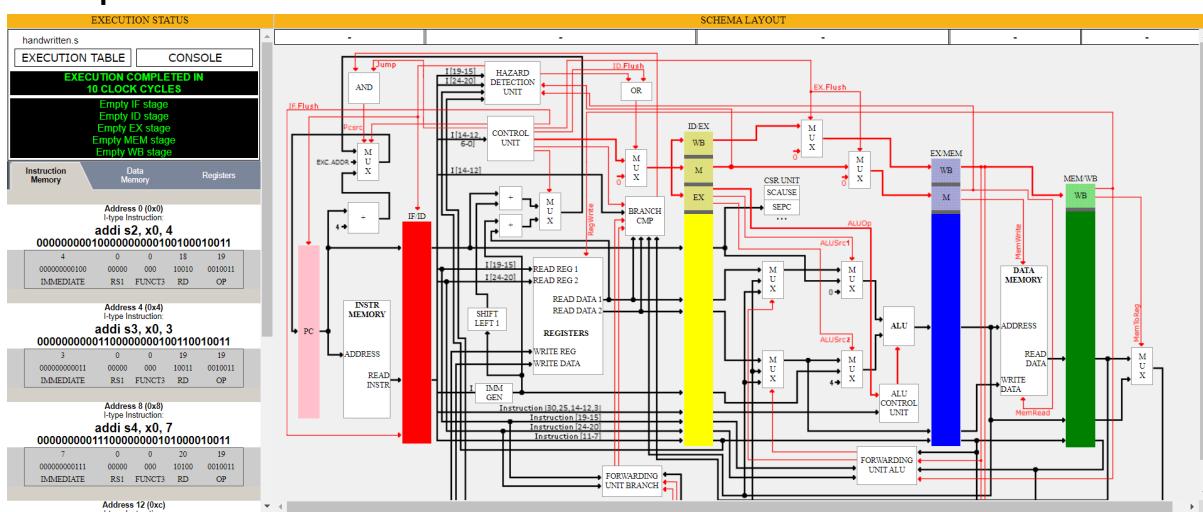
9° Step



10°



11° Step



c)

EXECUTION TABLE

Instruction	CPU Cycles									
	1	2	3	4	5	6	7	8	9	10
addi \$2, x0, 4	F	D	X	M	W					
addi \$3, x0, 3		F	D	X	M	W				
addi \$4, x0, 7			F	D	X	M	W			
addi \$5, x0, 5				F	D	X	M	W		
addi \$6, x0, 6					F	D	X	M	W	
add \$7, s2, s3						F	D	X	M	W

d) Foram necessários 10 ciclos.