



کورس سببی 810100587
نام خانوادگی 810100298

op	instruction name	Reg write	Imm Src	ALU Src	mem write	Result Src	Branch	ALU op	sed	jump	jalu injen
0-4	R-type	1	xxx	0	0	00	0	based on op	0	0	0
5	lw	1	000	1	0	01	0	000	0	0	0
6-9	I-type	1	000	1	0	00	0	based on op	0	0	0
10	jalu	1	000	1	0	xx	x	000	1	x	1
11	sw	0	001	1	1	xx	0	000	0	0	0
12	jdl	1	011	x	0	xx	0	xxx	1	1	0
13-16	B-type	0	010	0	0	x	1	Based on op	0	0	0
17	lui	1	111	x	0	11	0	xxx	0	0	0

RISC-V

single-cycle

Controller

CA2

کرسن سانی 810100587

حام مانیان 810100248

```

max = 0;
for(i=0; i<10; i++)
    if(A[i]>max)
        max = A[i];
return max;

```

RISC-V Assembly Code

```

max: r1
i: r2
10: r3
A[i]: r4

```

```

0 addi r1, r1, 0
1 addi r2, r2, 0
2 addi r3, r3, 10
loop 3 bge r2, r3, end-loop
4 lw r4, A(r2)
5 bge r1, r4, end-if
6 addi r1, r4, 0
end-if 7 addi r2, r2, 1
8 jal r5, loop
end-loop

```

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machine Code

```

6-1-1-0
6-2-2-0
6-3-3-10
16-2-3-offset(6)
5-4-0-2
16-1-4-offset(2)
6-1-4-0
6-2-2-4
12-5-offset(-5)
2's complement

```