

## Questions

1. What is the total number of cycles for running “all” trace (ZERO instruction included)?

There are 13 cycles (including the ZERO instruction) for running “all” trace.

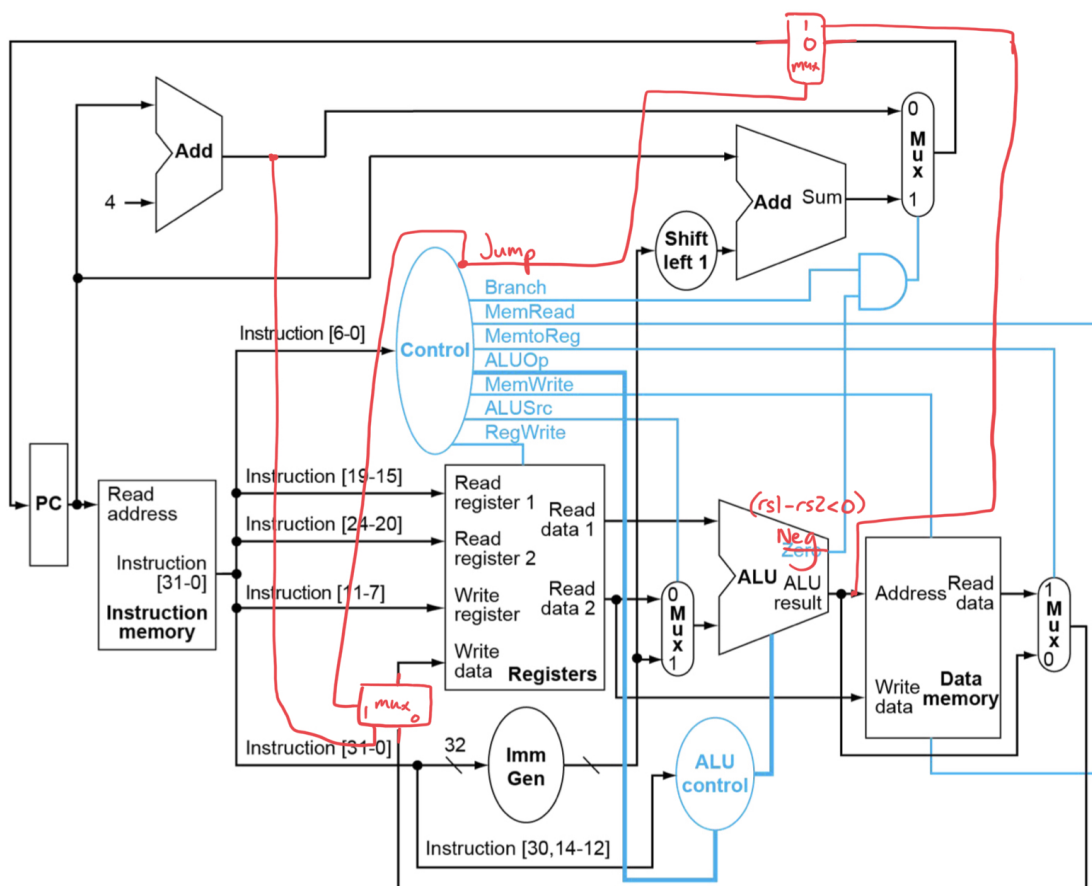
2. How many r-type instructions does this program (“all”) have?

There are 2 r-type instructions in “all”.

3. What is the IPC of this processor (for “all” trace)?

The IPC of “all” is 1.

## Datapath & Controller



## Table

Instruction	Opcode	RegWrite	AluSrc	Branch	MemRe	MemWr	MemtoReg	Jump	ALUOp
R-type	0110011	1	0	0	0	0	0	0	10
I-type	0010011	1	1	0	0	0	0	0	10
lw	0000011	1	1	0	1	0	1	0	00
sw	0100011	0	1	0	0	1	0	0	00
blt	1100011	0	0	1	0	0	0	0	01
jalr	1100111	1	1	0	0	0	0	1	00