

Tipo R
 5 all rd, rt, shamt

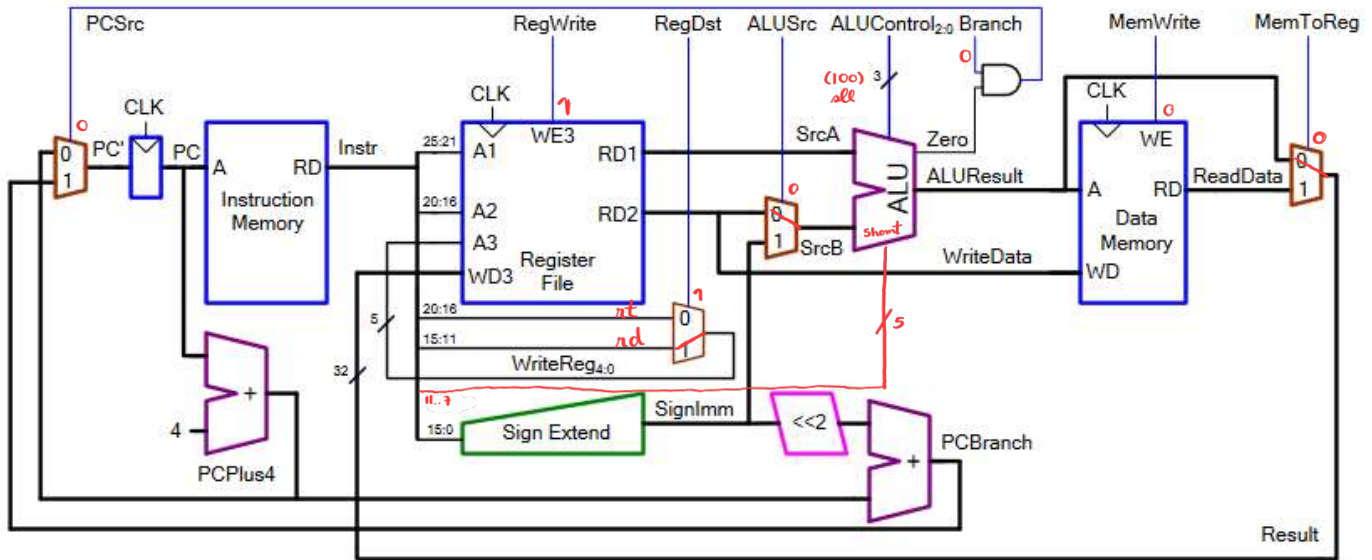
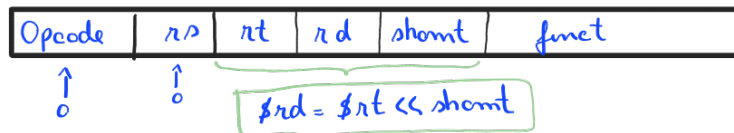


Figura 1 - Datapath single-cycle

ALUOp _{1:0}	Funct _{5:0}	ALUControl _{2:0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (Slt)
10	000000 (all)	100 (all)

Tabela II - Descodificador da ALU

Tipo R →

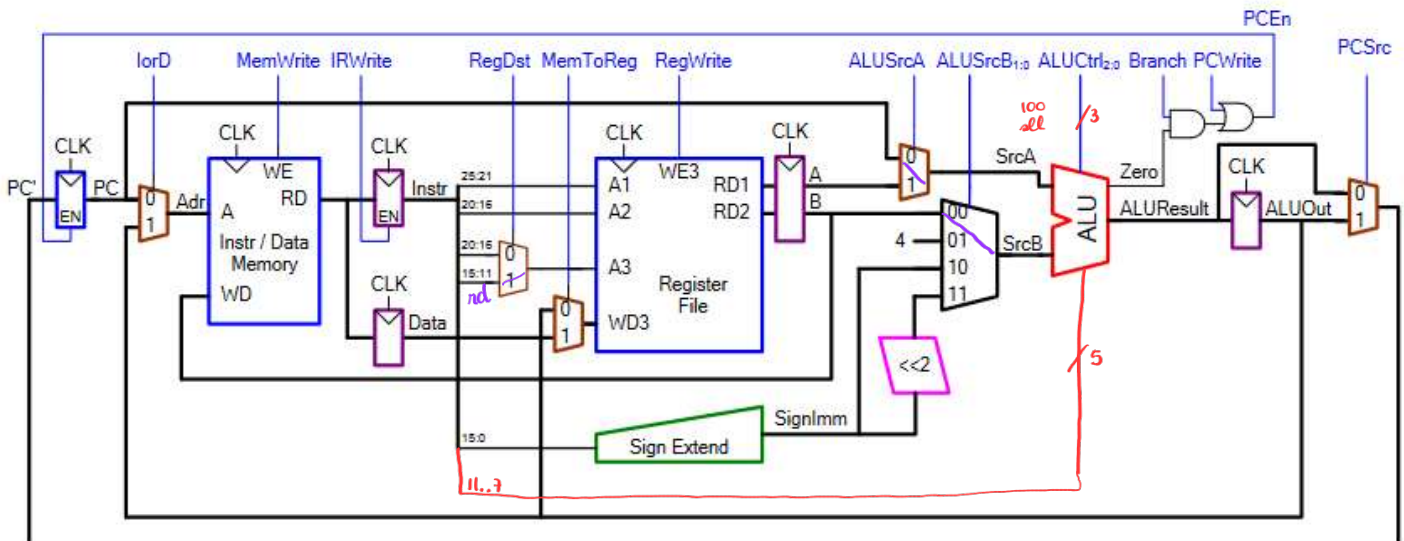
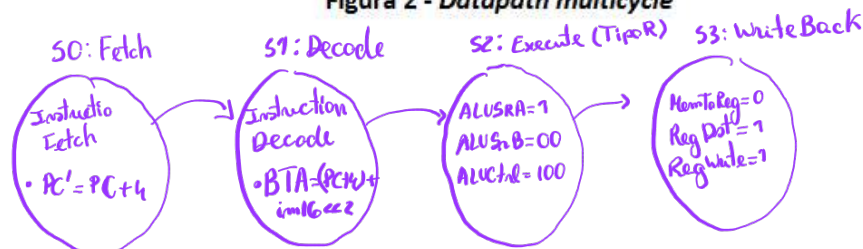


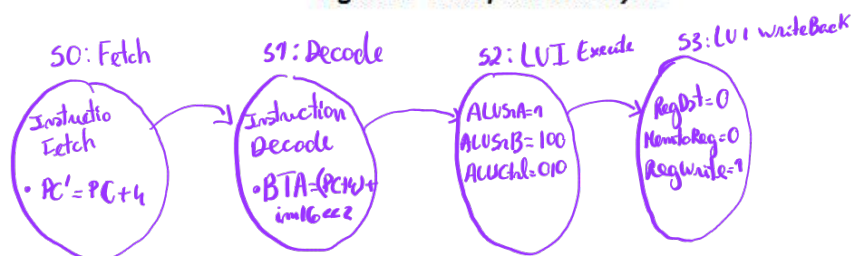
Figura 2 - Datapath multicyle



lui şti, imm16



Tabela II - Descodificador da ALU



Tipo 3
4

ori rt, rs, imm16

Zero Extended

Opcode | rs | rt | imm16

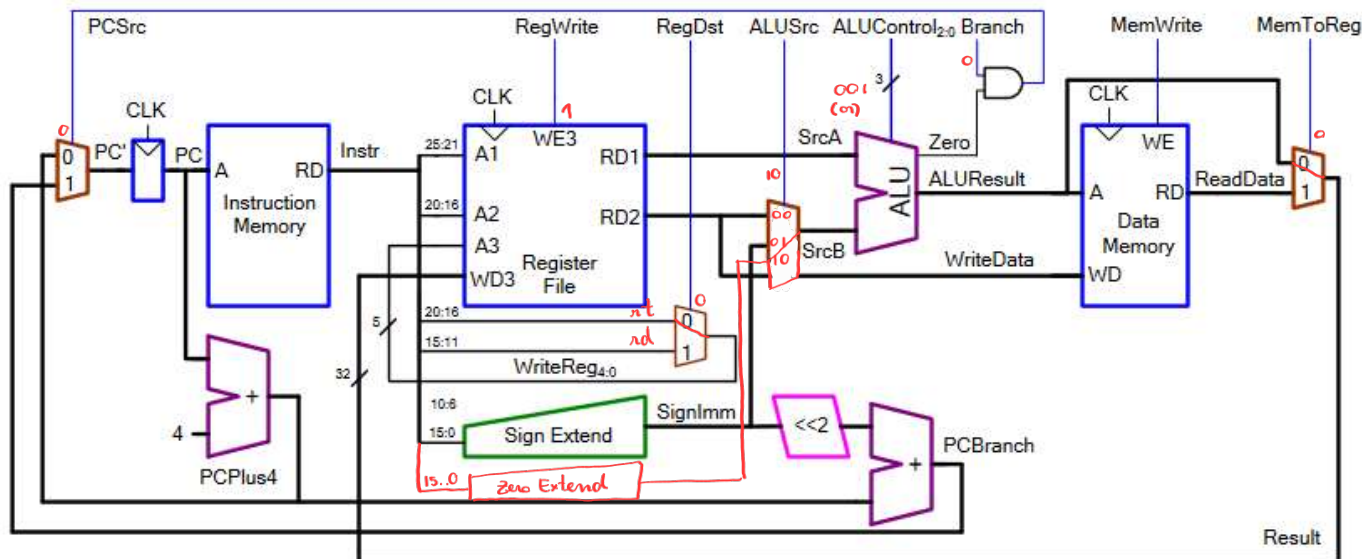


Figura 1 - Datapath single-cycle

ALUOp _{1,0}	Funct _{5,0}	ALUControl _{2,0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (Slit)
11	XXXXXX	001

Tabela II - Descodificador da ALU

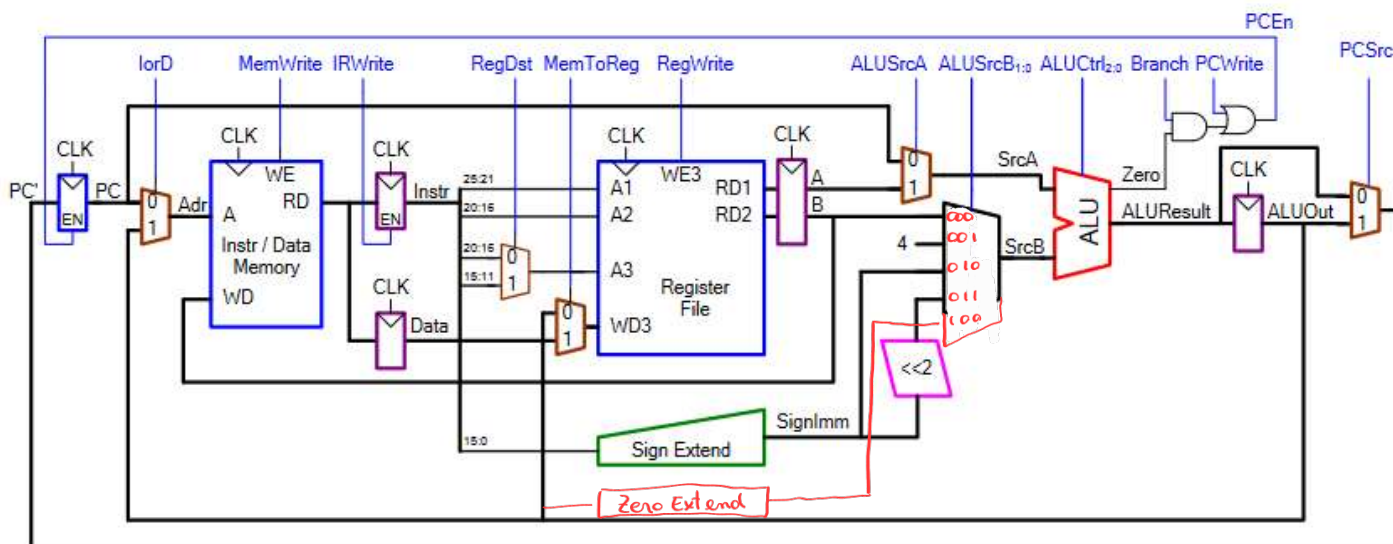
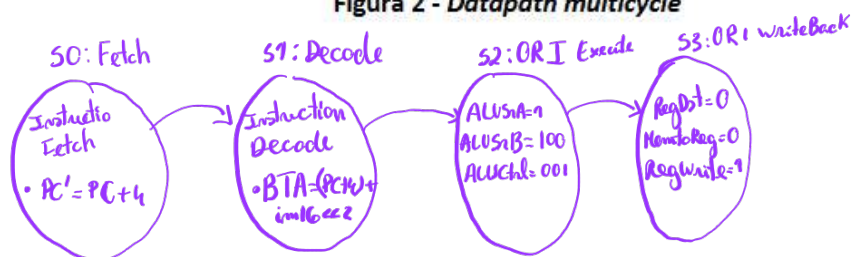


Figura 2 - Datapath multicyle



Tipo I

$slti\ rt, rs, imm16$

$rt = (rs < imm16)? 1:0$

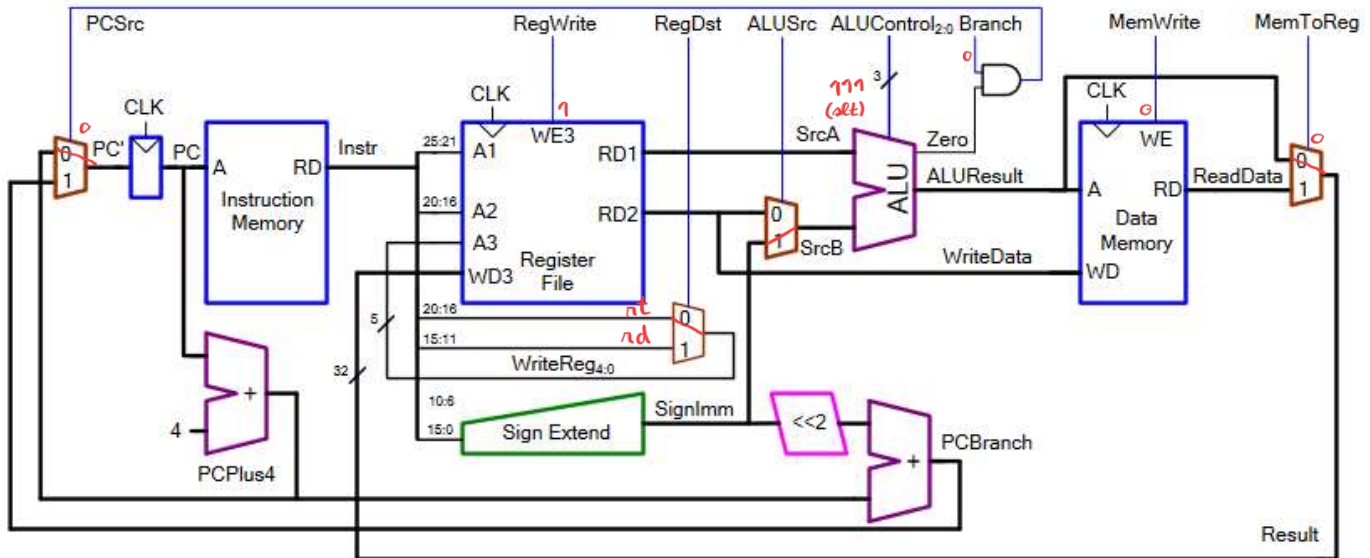


Figura 1 - Datapath single-cycle

ALUOp _{1:0}	Funct _{5:0}	ALUControl _{2:0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (Slit)
11	XXXXXX	111 (slt)

Tabela II - Descodificador da ALU

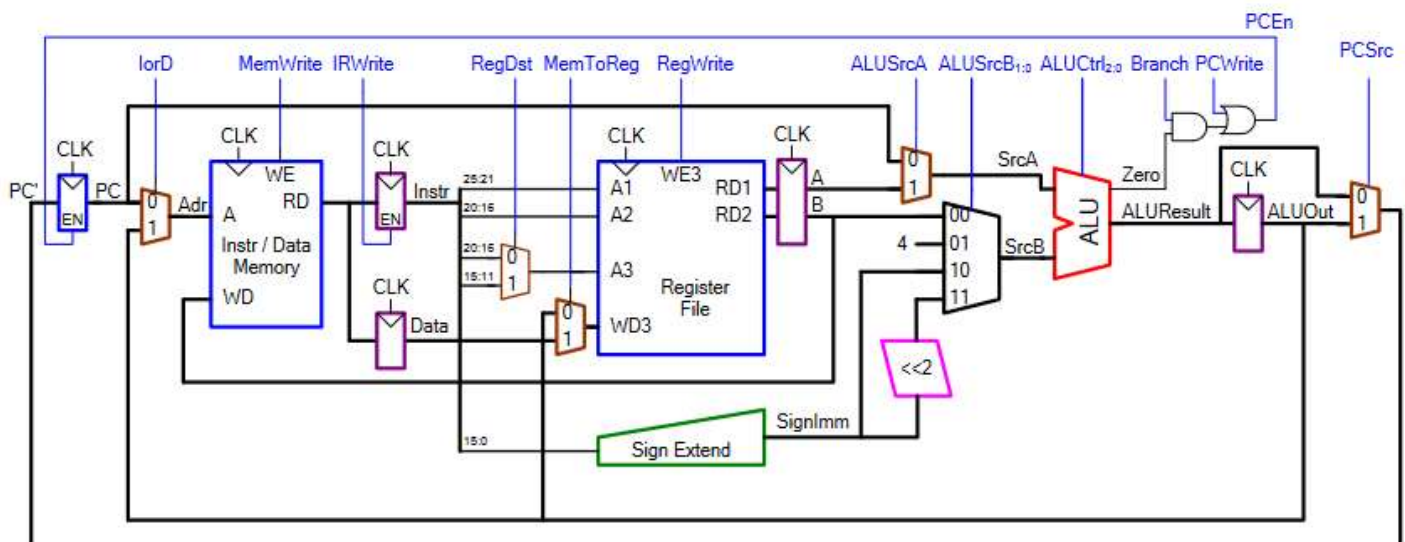
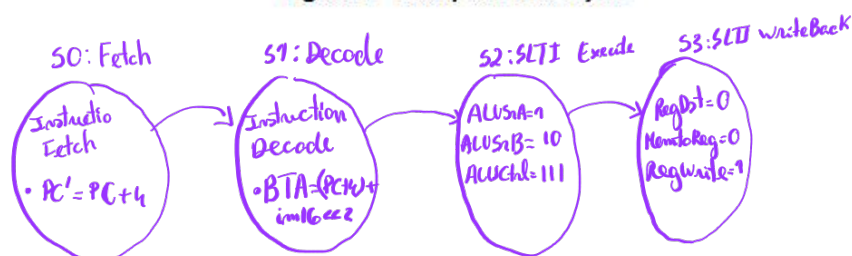


Figura 2 - Datapath multicyle



Tipo R → jR RS . Jump → 1

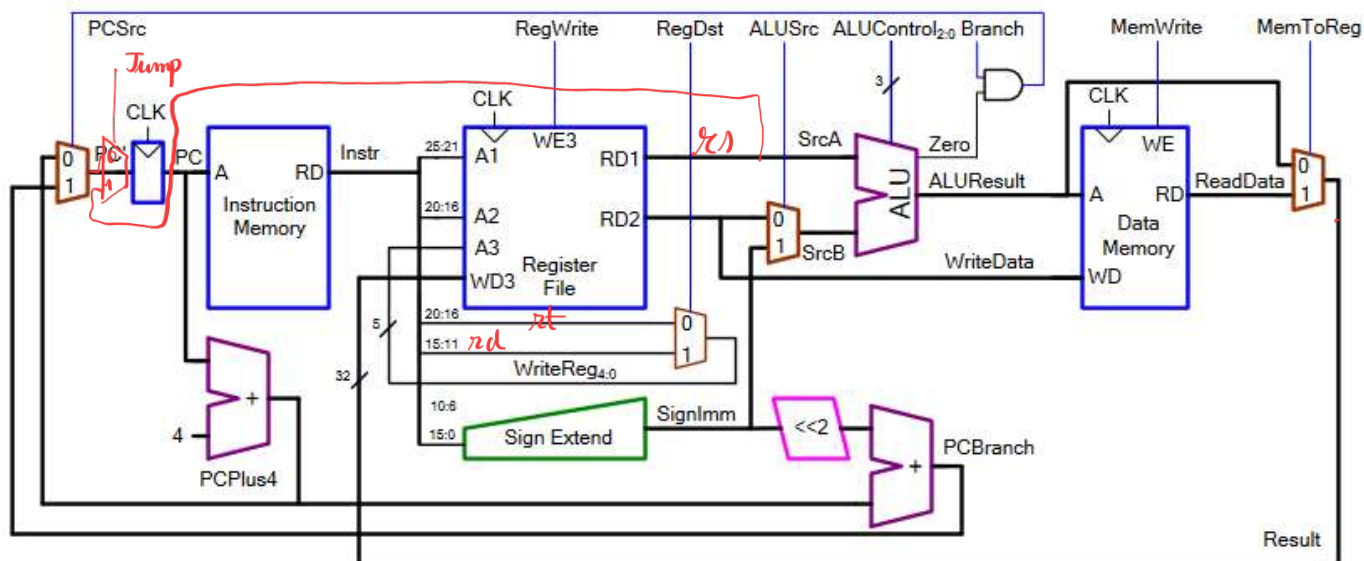
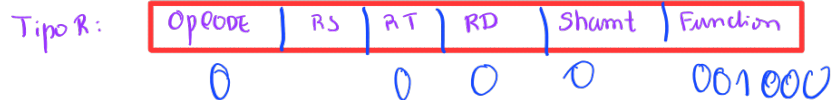


Figura 1 - Datapath single-cycle

ALUOp _{1:0}	Funct _{5:0}	ALUControl _{2:0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (Slt)
10	001000 (jR)	010 (Add)

Tabela II - Descodificador da ALU

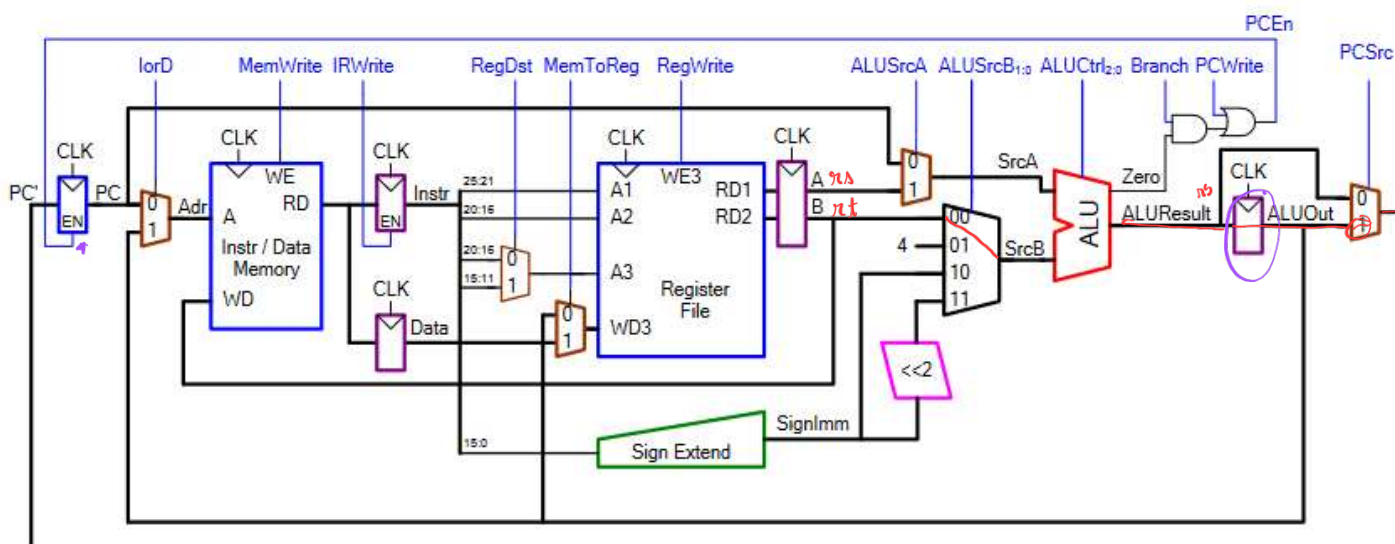
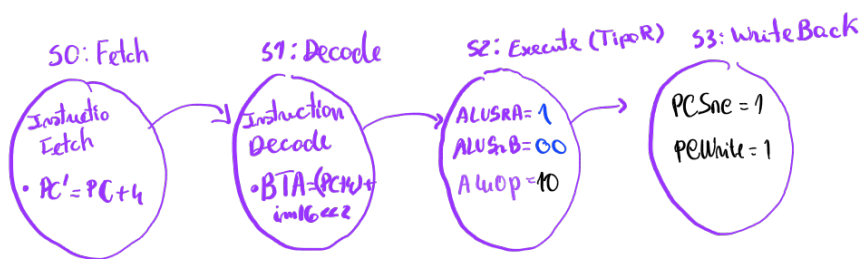


Figura 2 - Datapath multicyle



Tipo J: j label

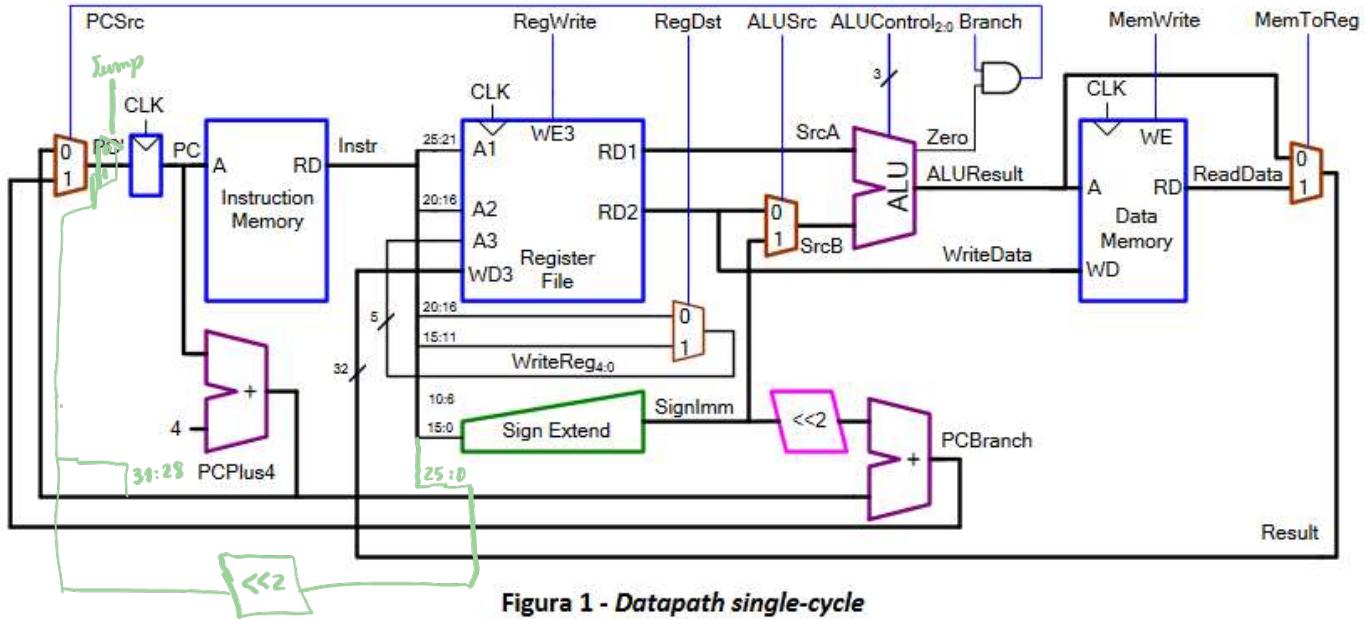
Tipo J:

OpCode 6 bits

25:0 ADDRESS 26 bits

000010

$$JTA = (PC+4)_{31:28} : (Imm_{26} \ll 2)$$



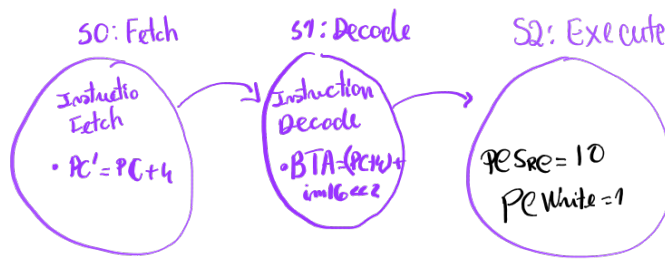
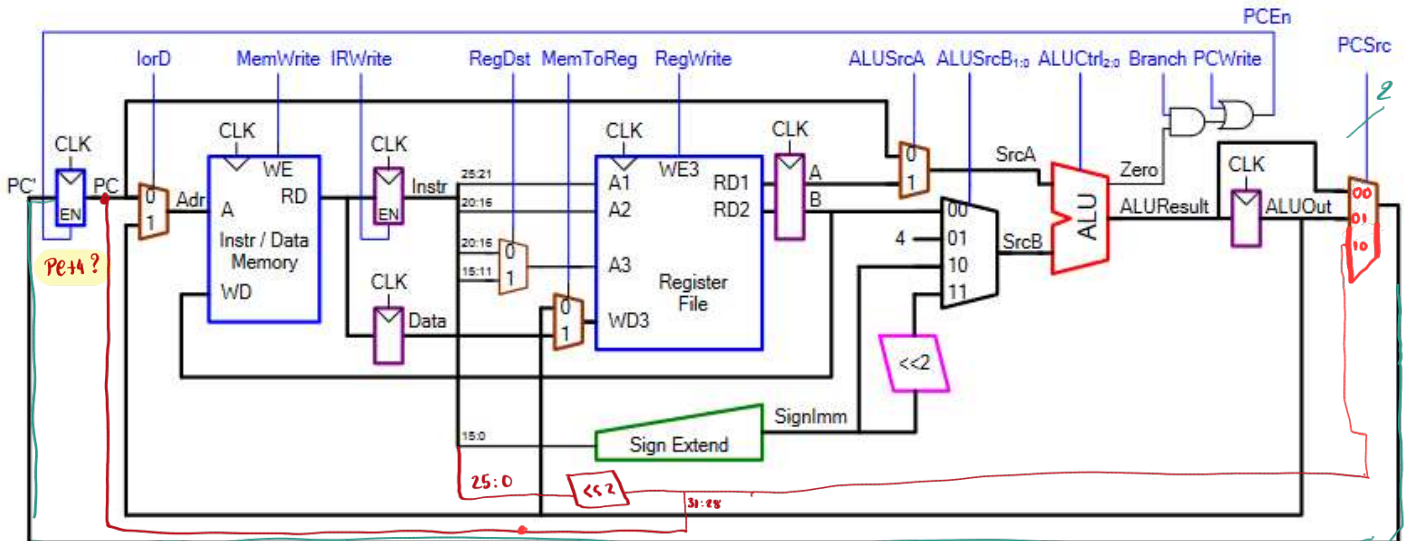
ALUOp _{1:0}	Funct _{5:0}	ALUControl _{2:0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (SlT)

Tabela II - Descodificador da ALU

Pe!

$$JTA = (PC+4)_{31:28} : (Imm_{26} \ll 2)$$

25:0



srl rd, rt, shamt

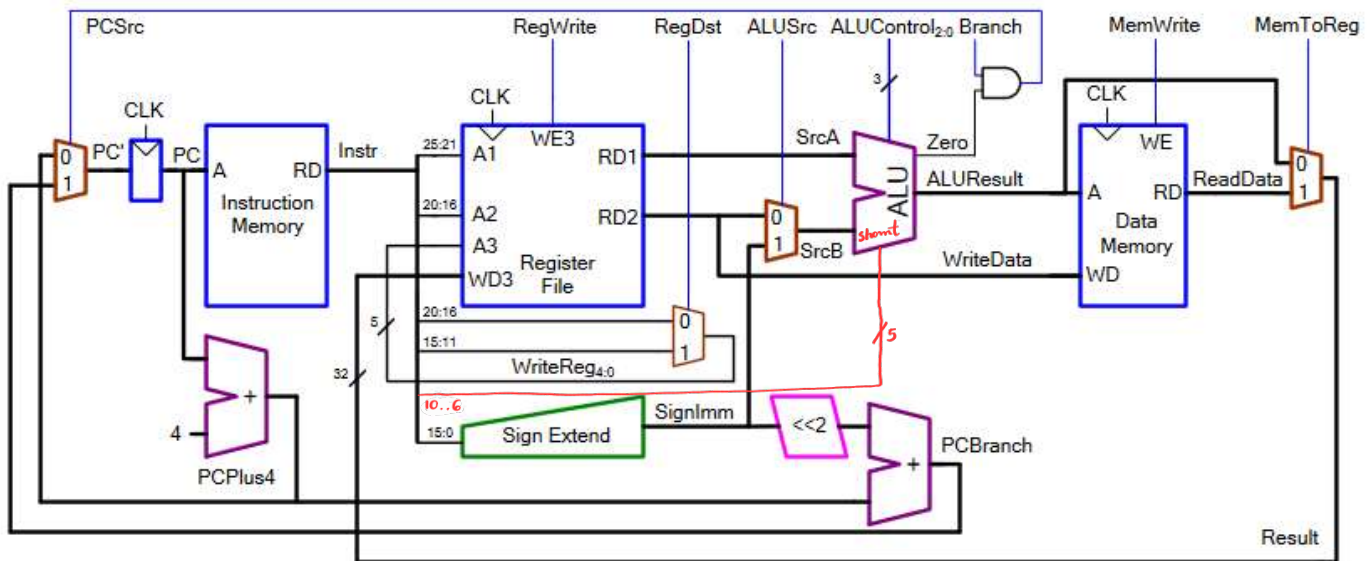


Figura 1 - Datapath single-cycle

ALUOp _{1:0}	Funct _{5:0}	ALUControl _{2:0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (Slt)
10	000010 (<i>srl</i>)	011 (<i>srl</i>)

Tabela II - Descodificador da ALU

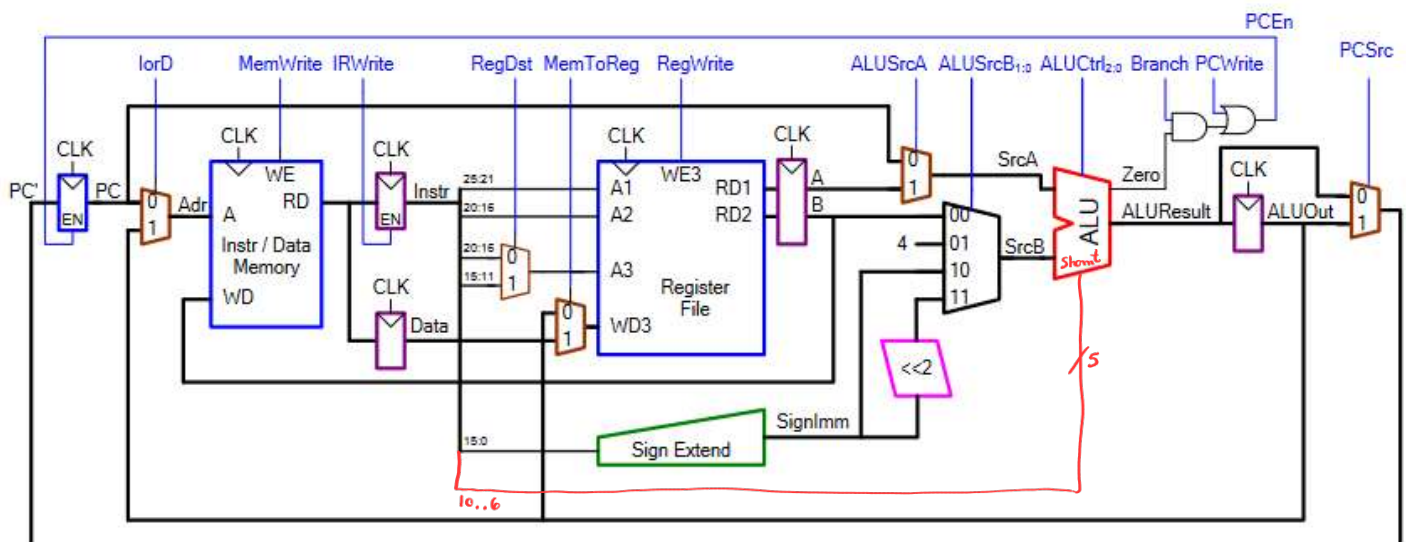
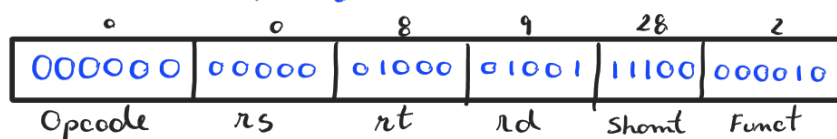


Figura 2 - Datapath multicyle

srl rd, rt, shamt
srl \$t9, \$t0, 28



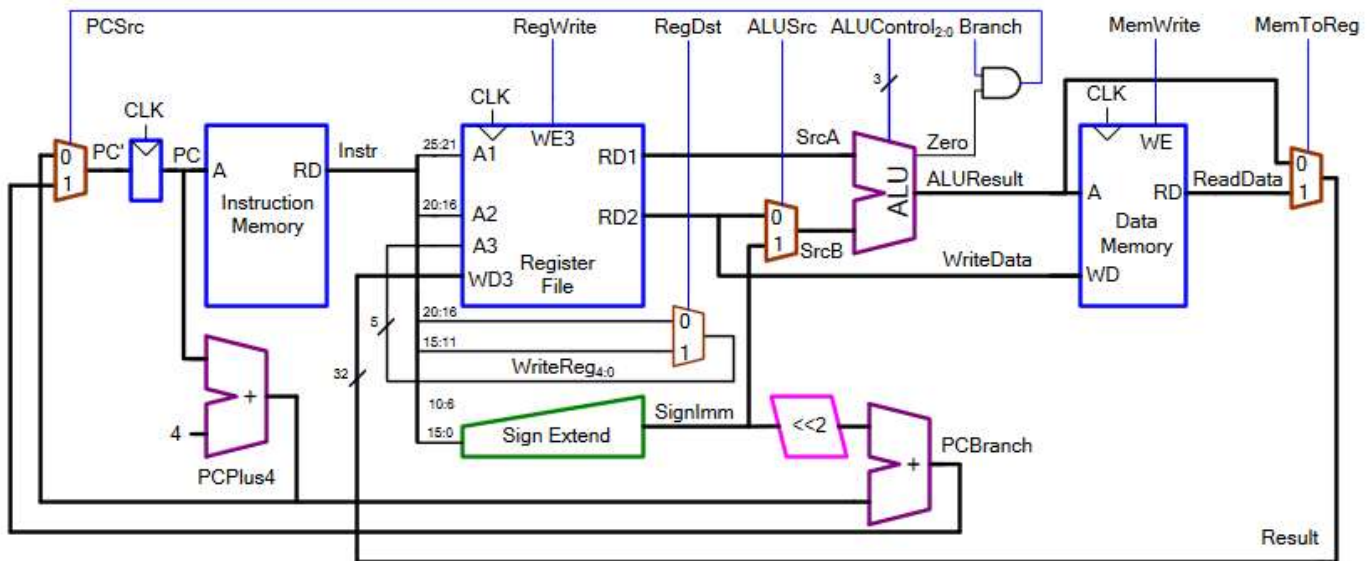


Figura 1 - Datapath single-cycle

ALUOp _{1:0}	Funct _{5:0}	ALUControl _{2:0}
00	XXXXXX	010 (Add)
01	XXXXXX	110 (Subtract)
10	100000 (add)	010 (Add)
10	100010 (sub)	110 (Subtract)
10	100100 (and)	000 (And)
10	100101 (or)	001 (Or)
10	101010 (slt)	111 (SlT)

Tabela II - Descodificador da ALU

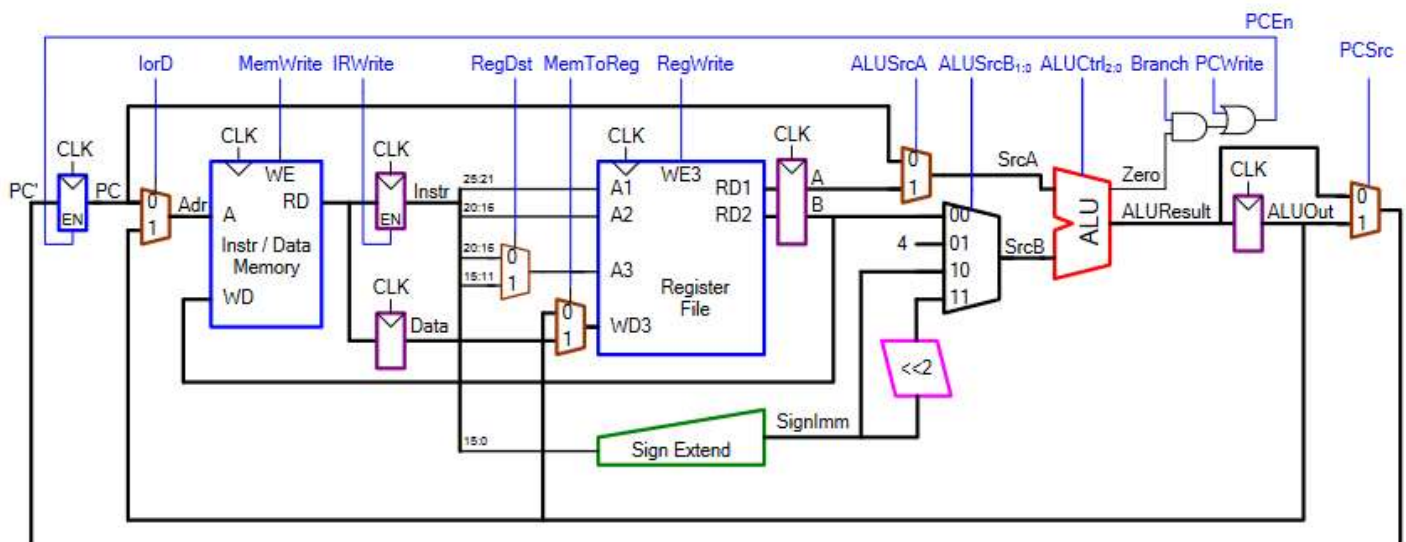


Figura 2 - Datapath multicyle