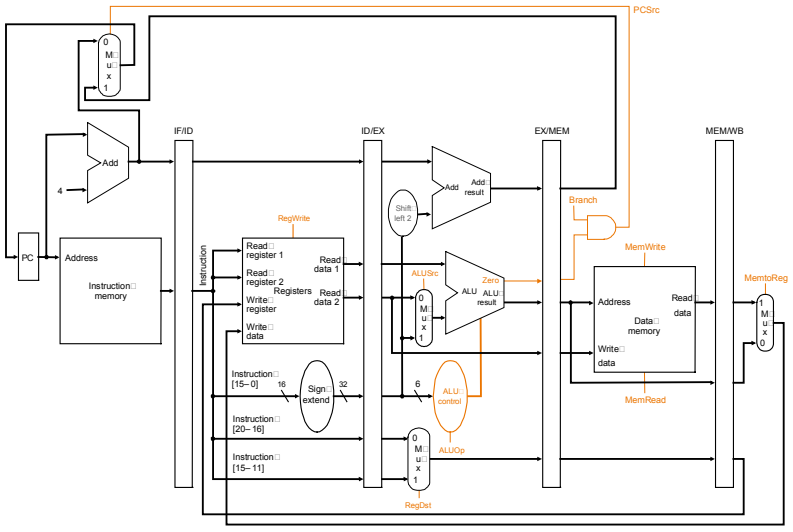
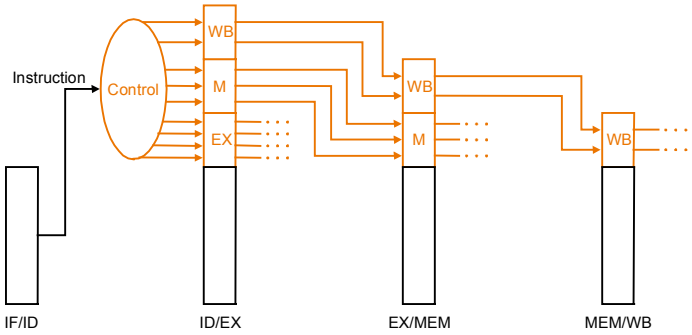
Il controllo nel pipeline

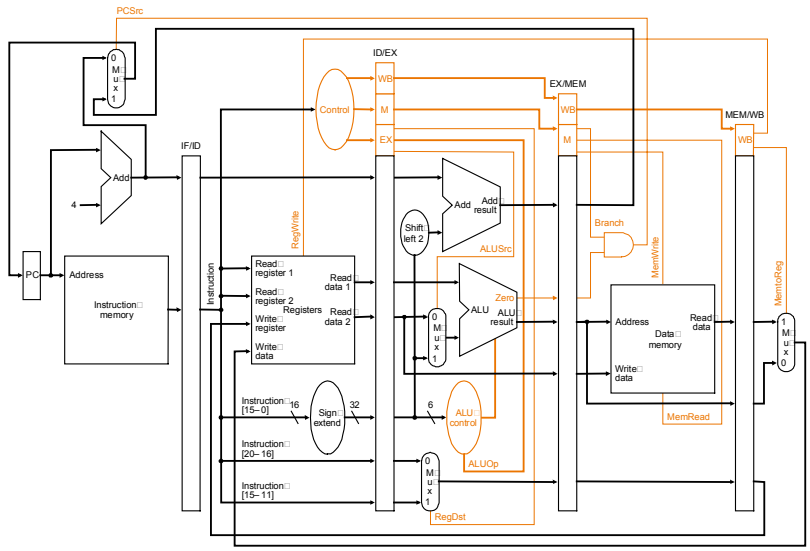
Pipeline



Controllo per il pipeline

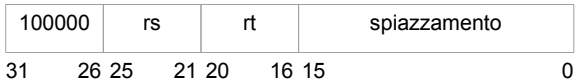


Unità di Elaborazione + Unità di controllo

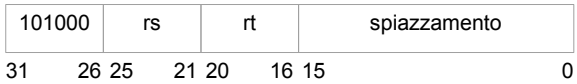


Istruzioni utilizzate

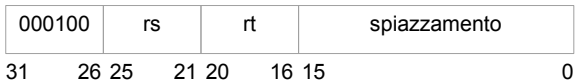
lw rt, spiazzamento (rs)



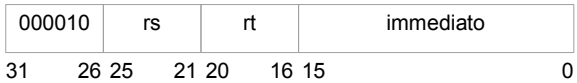
sw rt, spiazzamento (rs)



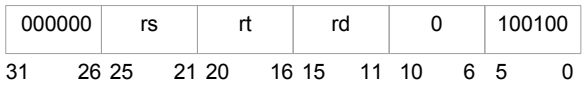
beq rs, rt, spiazzamento



addi rt, rs, immediato



and rd, rs, rt



Segnali prodotti dalla Unità di Controllo

Istruzione	Codice	RegDst	ALUOp	ALUSrc
Lw	100000	0	00	1
Sw	101000	X	00	1
Beq	000100	X	01	0
Addi	001000	0	00	1
Tipo R	000000	1	10	0

EXECUTE

Istruzione	Codice	Branch	MemRead	MemWrite
Lw	100000	0	1	0
Sw	101000	0	0	1
Beq	000100	1	0	0
Addi	001000	0	0	0
Tipo R	000000	0	0	0

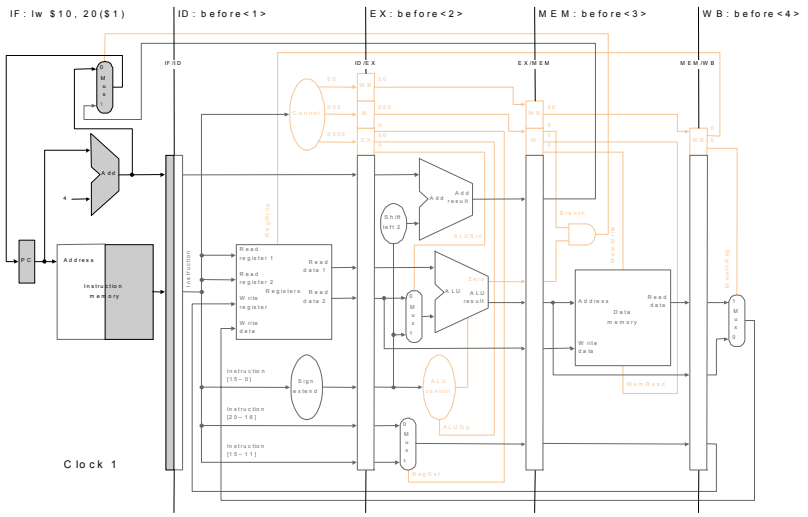
MEM. ACCESS

Segnali prodotti dalla Unità di Controllo

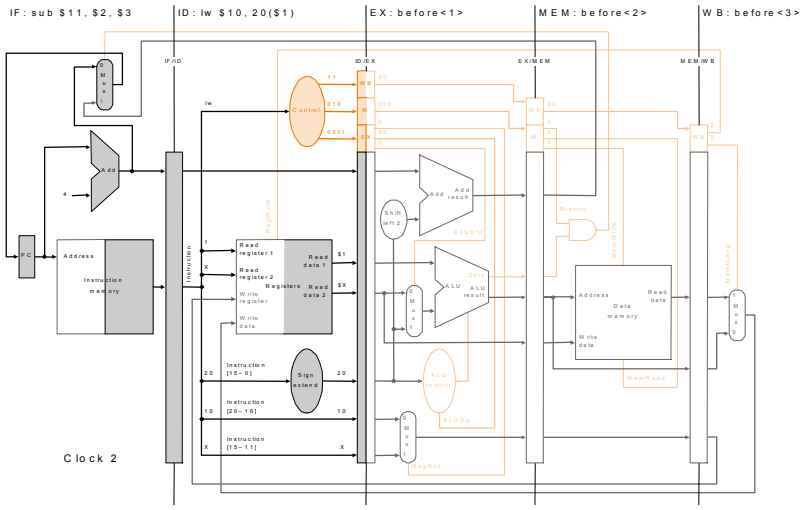
Istruzione	Codice	MemtoReg	RegWrite
Lw	100000	1	1
Sw	101000	X	0
Beq	000100	X	0
Addi	001000	0	1
Tipo R	000000	0	1

WRITE BACK

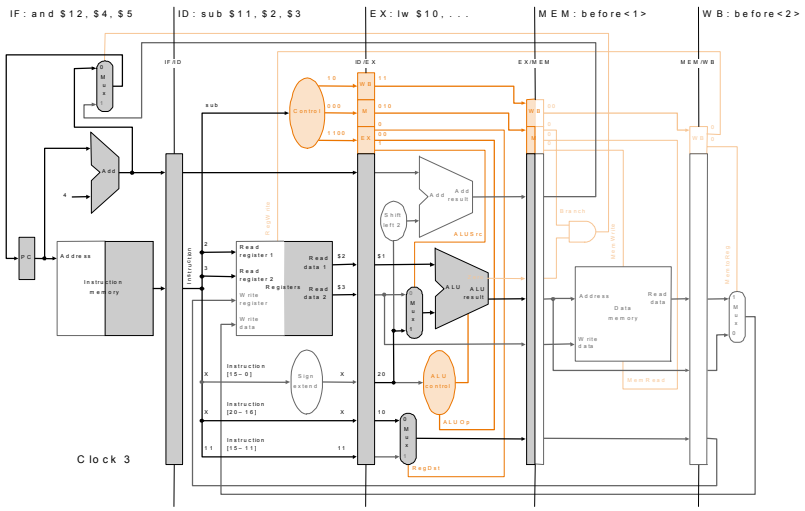
IF: lw



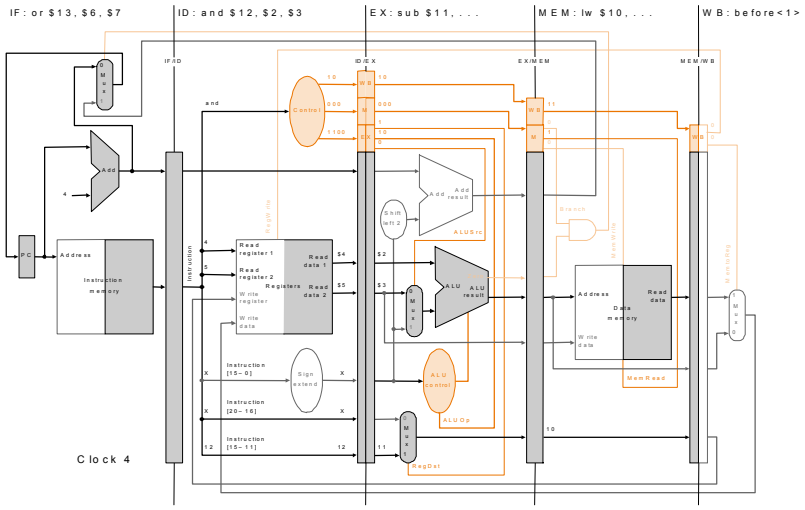
ID: lw + IF: sub



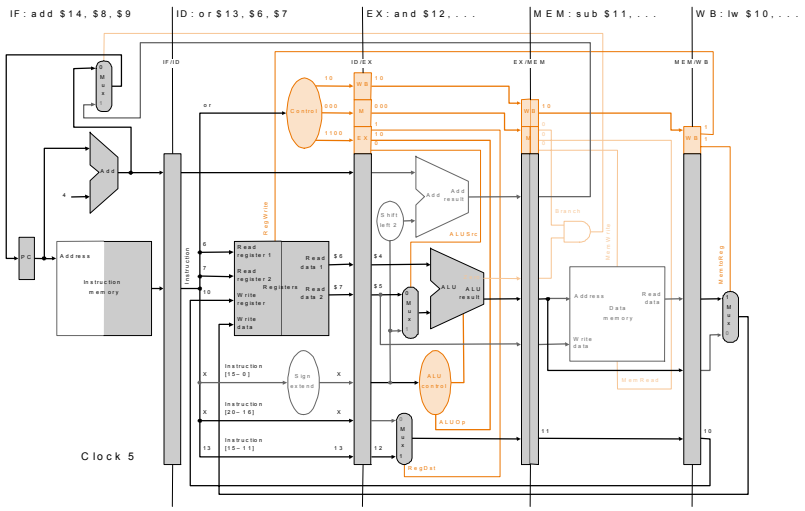
EX: lw, ID: sub, IF: and



MEM: lw, EX: sub, ID: and, IF: or



WB: lw, MEM: sub, EX: and, ID: or, IF: add



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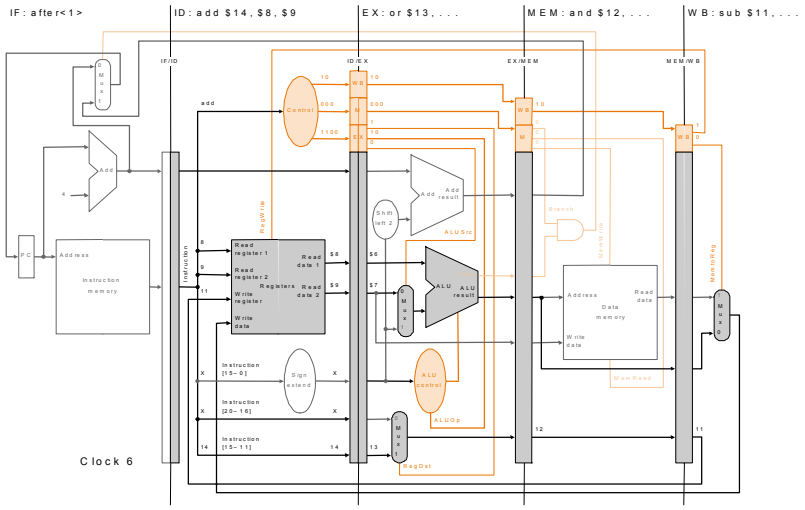
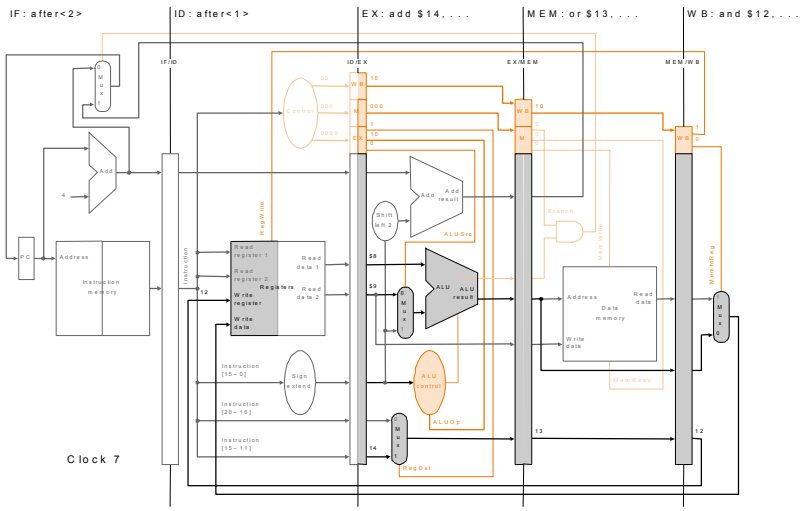
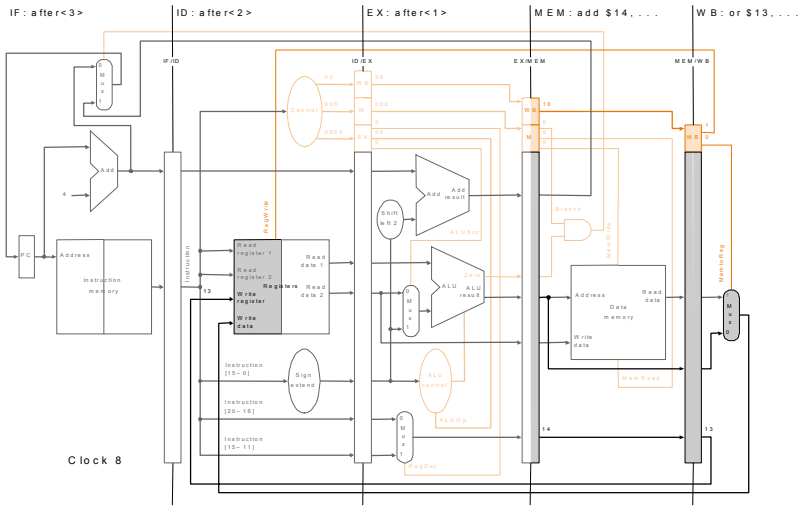


WB: and, MEM: or, EX: add



WB: or, MEM: add



WB: add