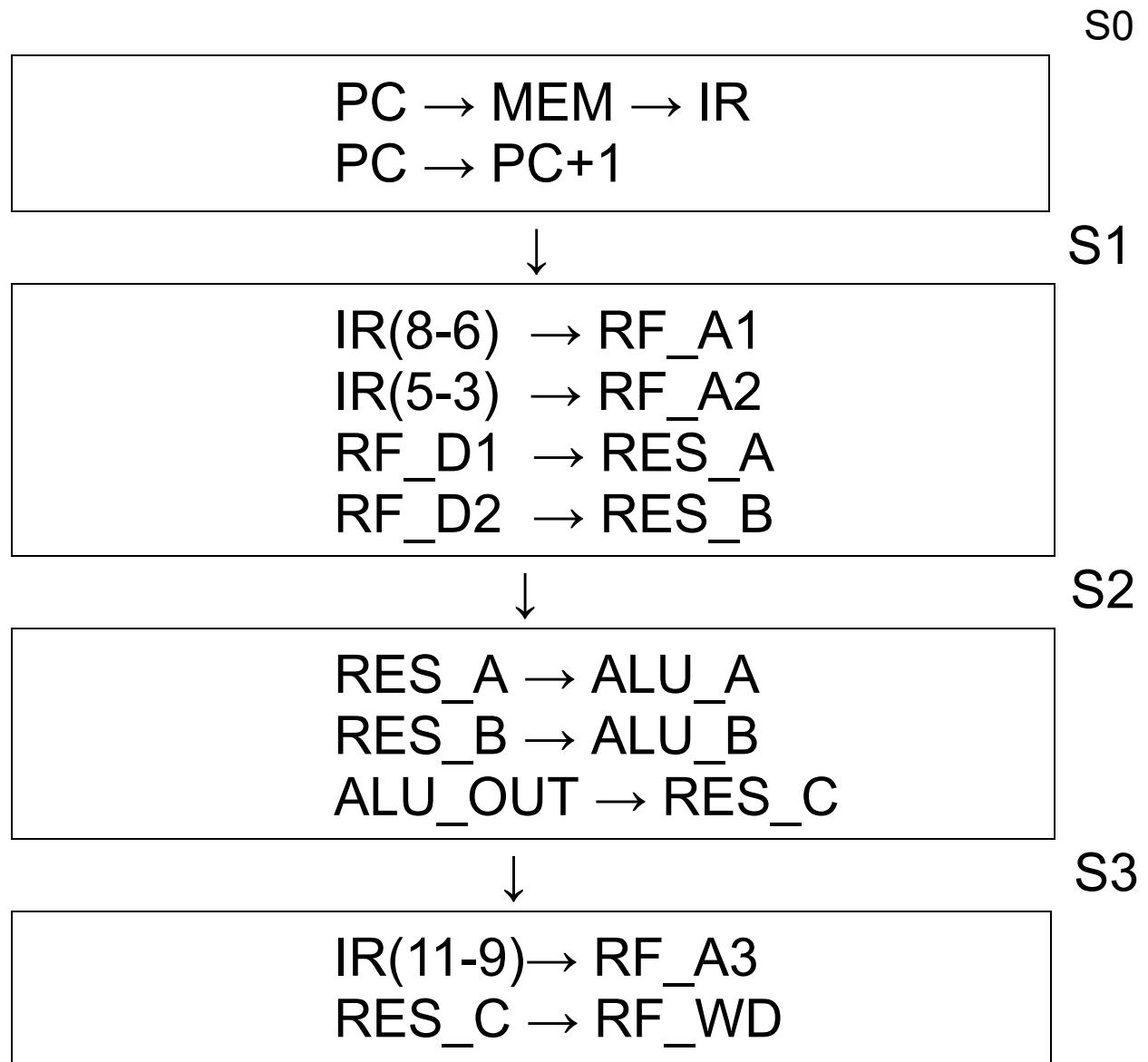


## R-Type instruction

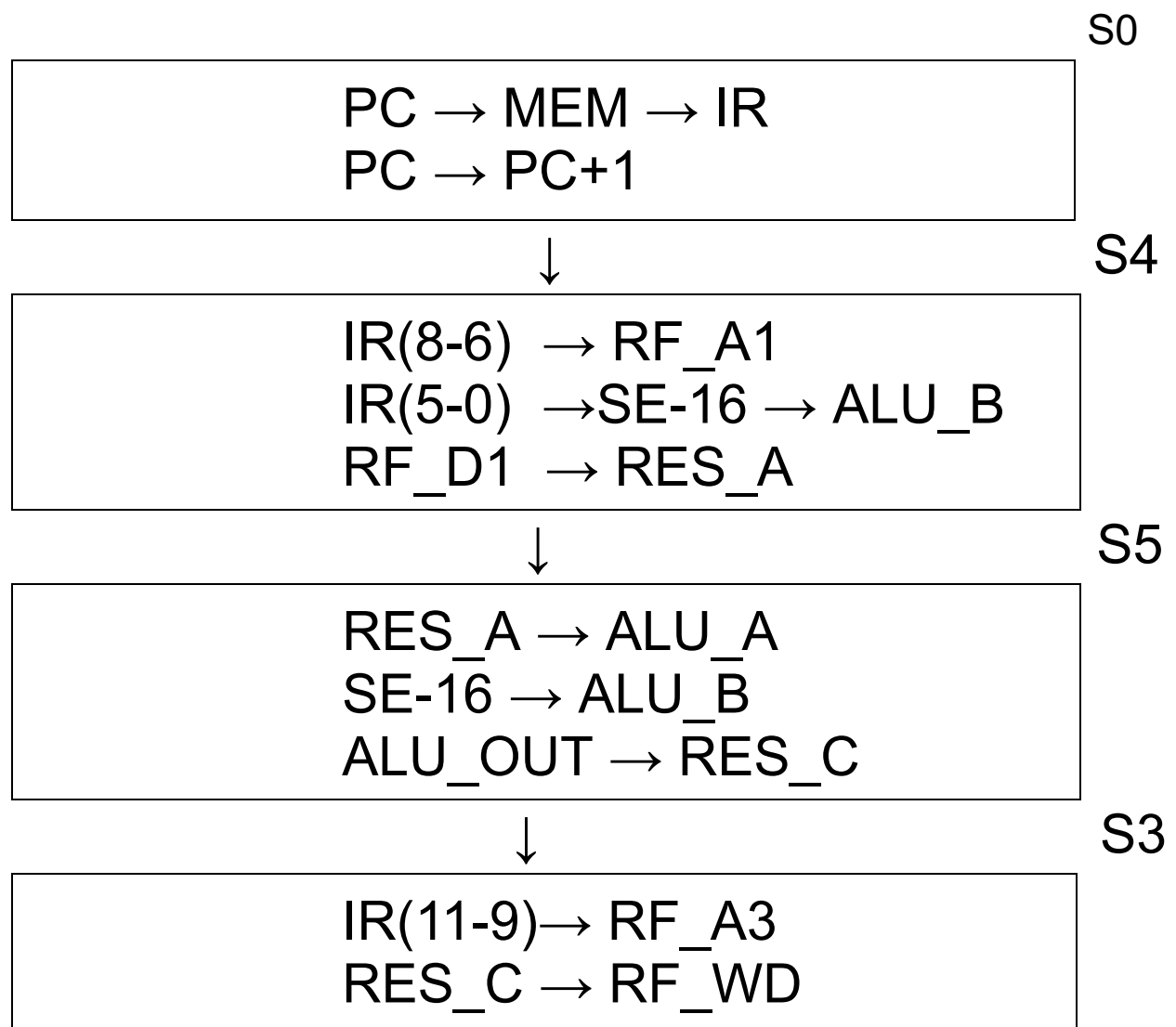
Op_code	Rc	Rb	a	c	fn
15 – 12	11–9	8–6	5–3	2	1–0



I-Type instruction

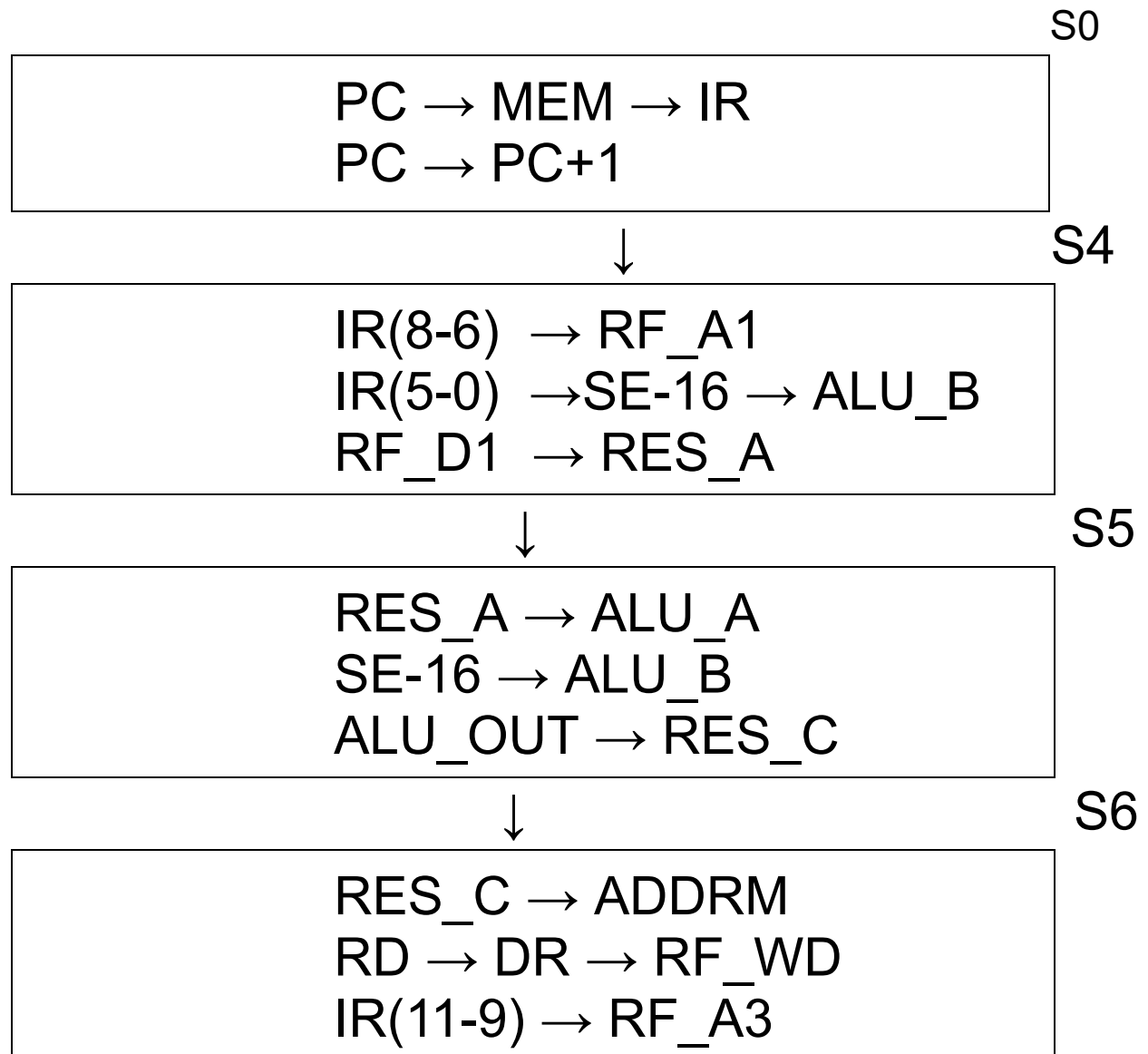
ADI:-

Op_code	Rb	Ra	IMM-6BIT
15 – 12	11 – 9	8 – 6	5 — 0



LW:-

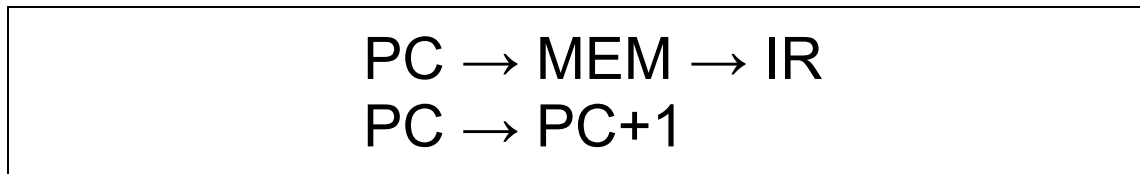
Op_code	Rb	Ra	IMM-6BIT
15 – 12	11 – 9	8 – 6	5 — 0



SW:-

Op_code	Rb	Ra	IMM-6BIT
15 – 12	11 – 9	8 – 6	5 — 0

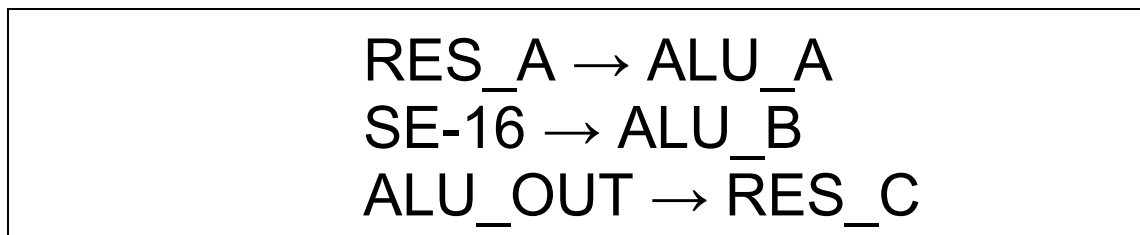
S0



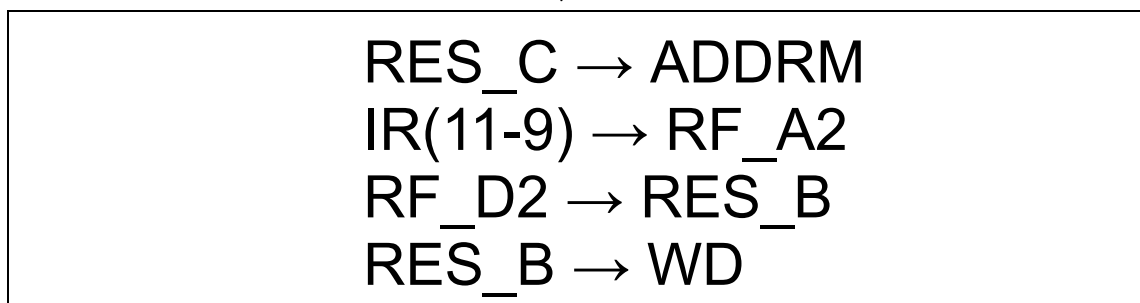
S4



S5



S7



BEQ:-

Op_code	Rb	Ra	IMM-6BIT
15 – 12	11 – 9	8 – 6	5 — 0

S0

PC → MEM → IR  
PC → PC+1



S8

IR(11-9) → RF\_A2  
IR(8-6) → RF\_A1  
RF\_D1 → RES\_A → ALU\_A  
RF\_D2 → RES\_B → ALU\_B



S9

IR(5-0) → SE-16 → ALU\_B  
PC → ALU\_A  
ALU\_OUT → RES\_C



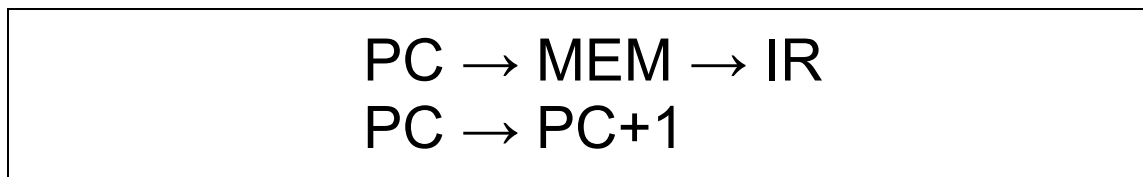
S10

IF(A==B){  
RES\_C → PC}

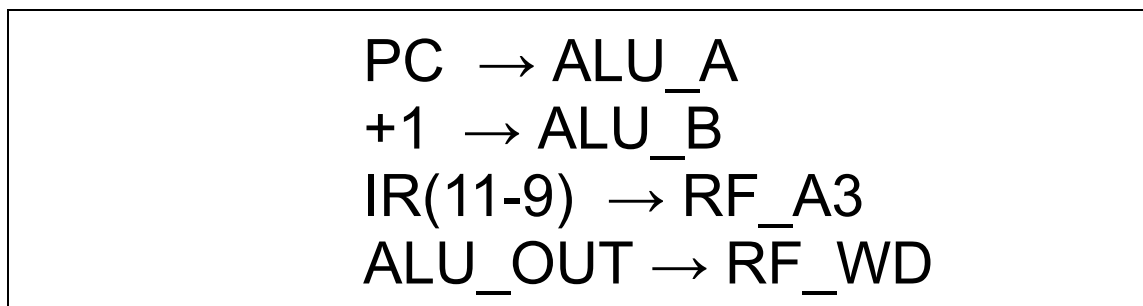
JLR:-

Op_code	Ra	Rb	IMM-6BIT
15 – 12	11 – 9	8 – 6	000000

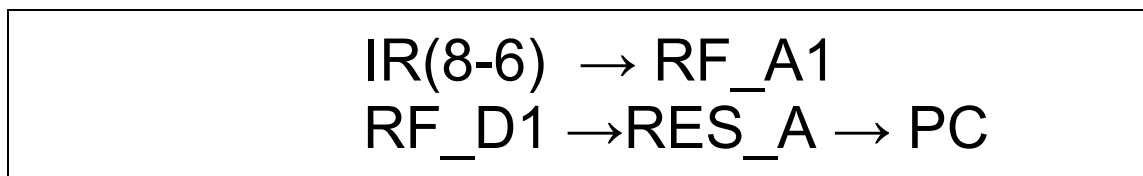
S0



S11



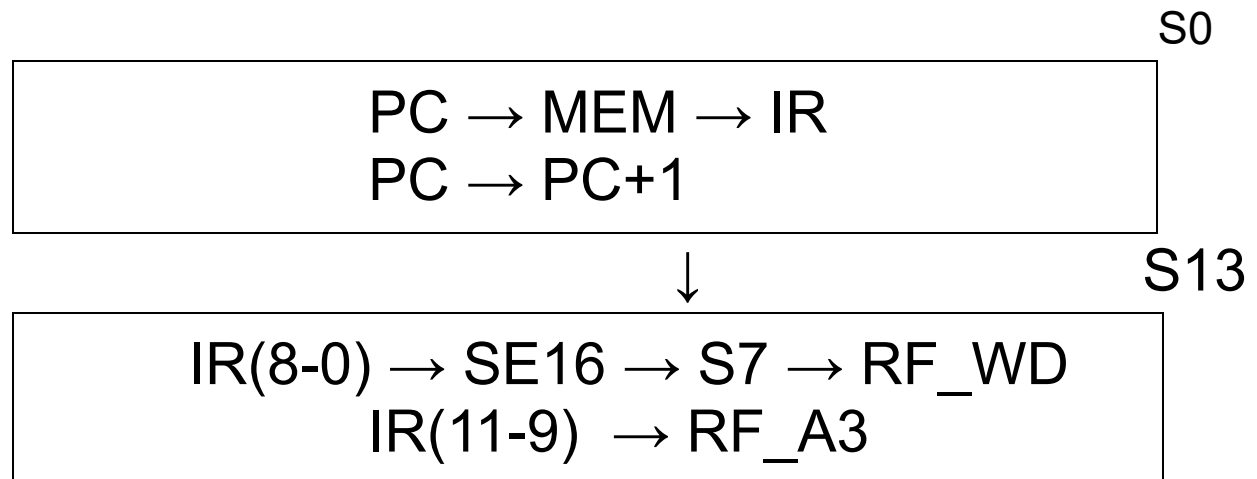
S12



## J-Type instruction:-

LHI:-

Op_code	Ra	IMM-9BIT
15 – 12	11 – 9	8 – 0



JRI:-

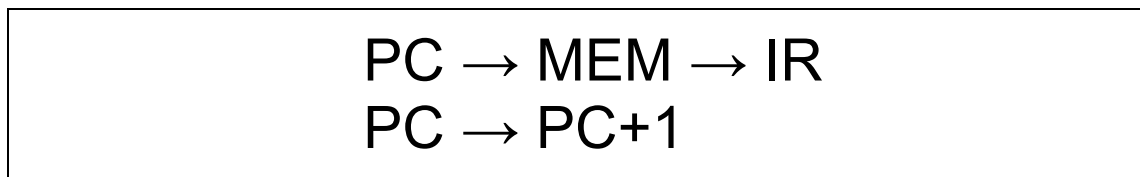
Op\_code

Ra

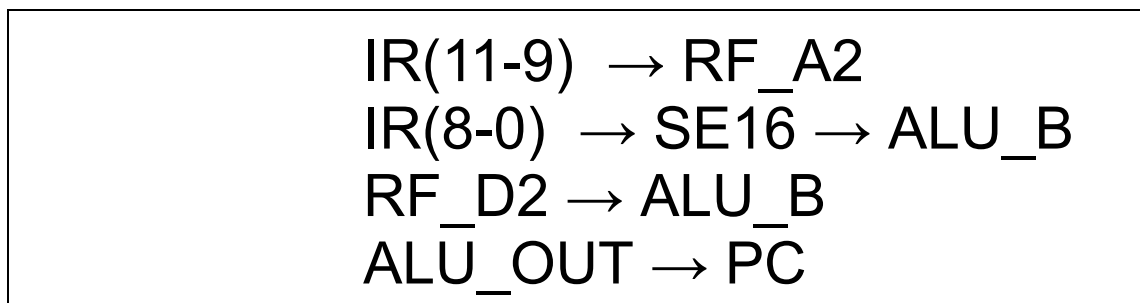
IMM-9BIT

15 – 12	11 – 9	8 – 0
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S0



S14





LM:-

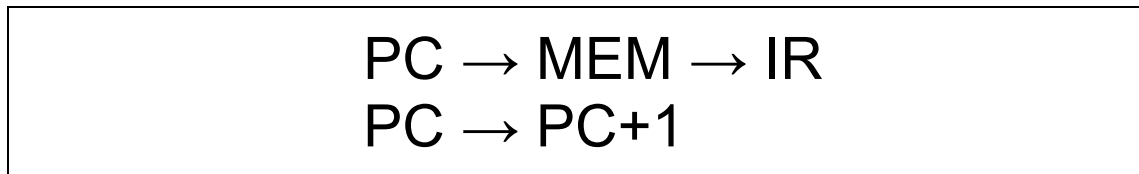
Op\_code

Ra

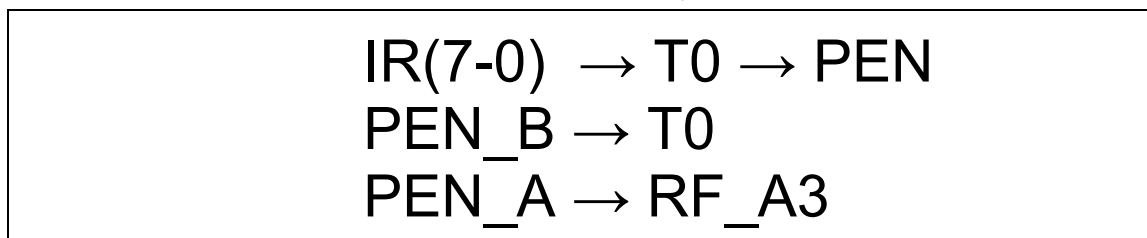
IMM-9BIT

15 – 12	11 – 9	8 – 0
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S0



S15



WHILE(PEN\_A!=000)

S16



SM:-

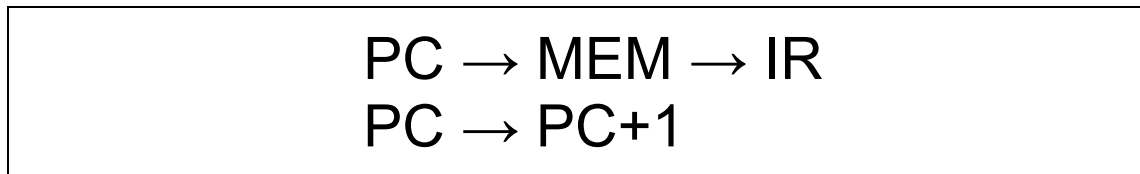
Op\_code

Ra

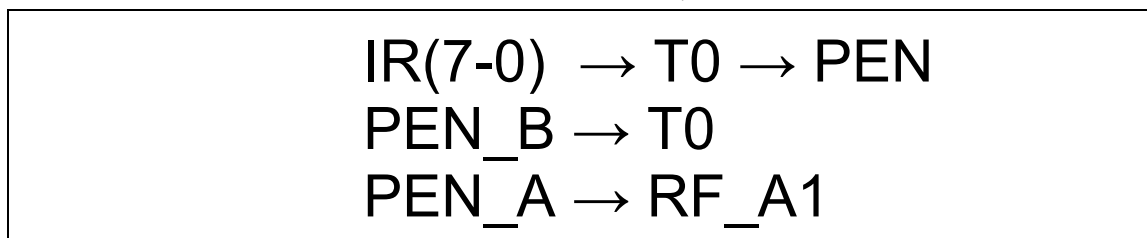
IMM-9BIT

15 – 12	11 – 9	8 – 0
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S0

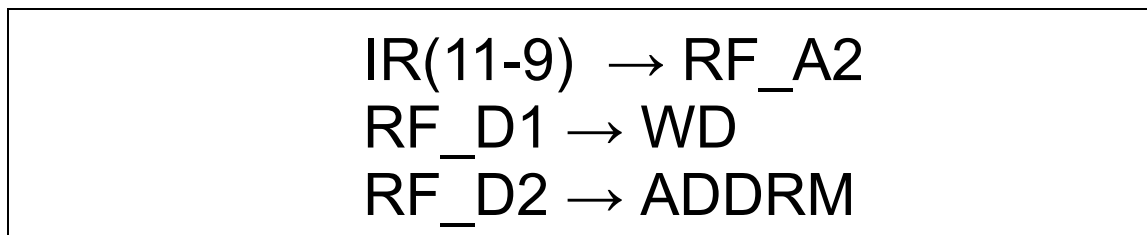


S17



WHILE(PEN\_A!=000)

S18



JAL:-

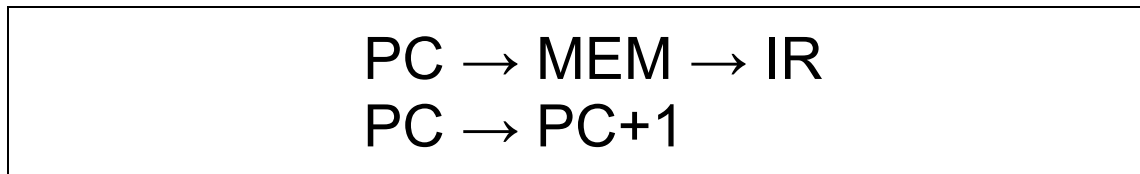
Op\_code

Ra

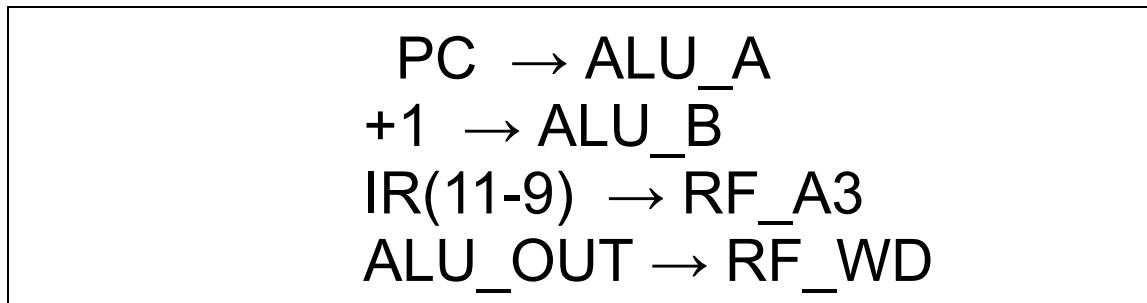
IMM-9BIT

15 – 12	11 – 9	8 – 0
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S0



S11



S19

