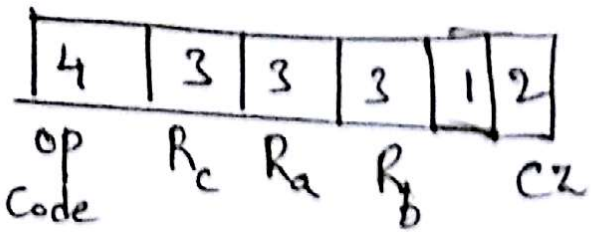
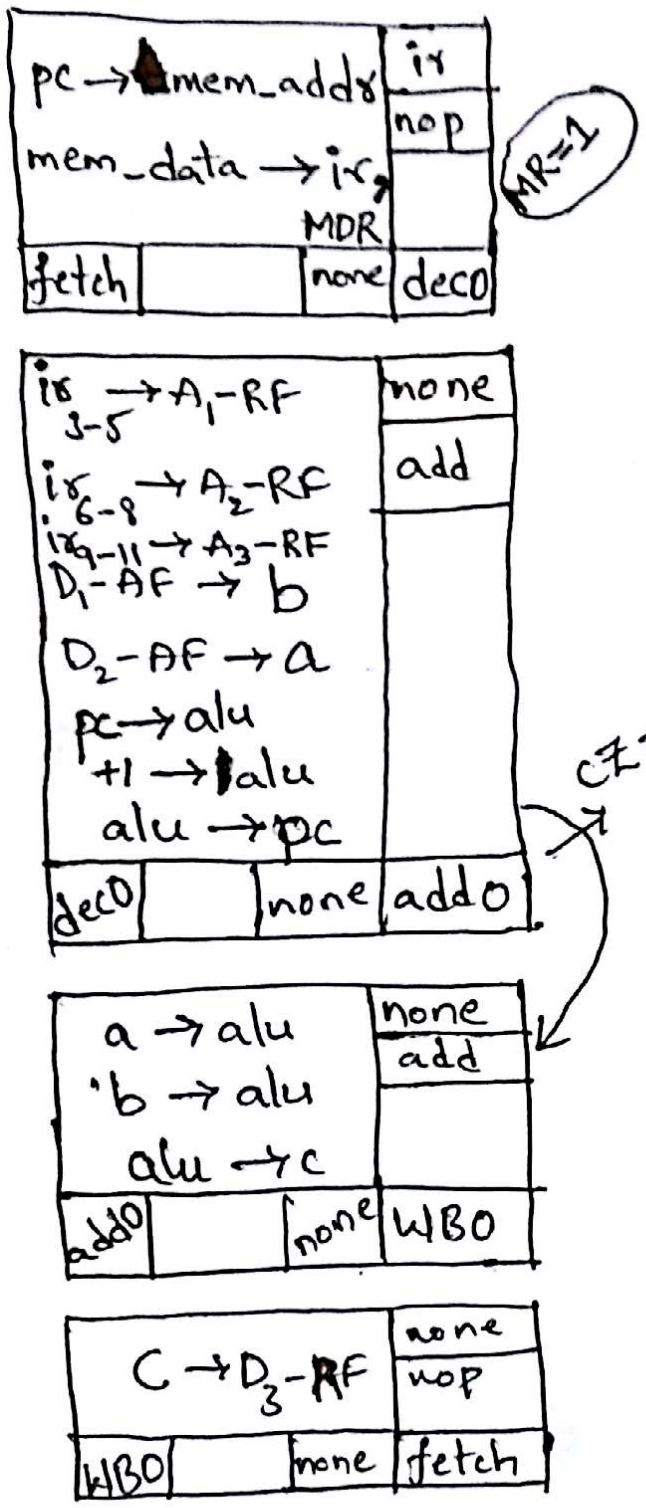
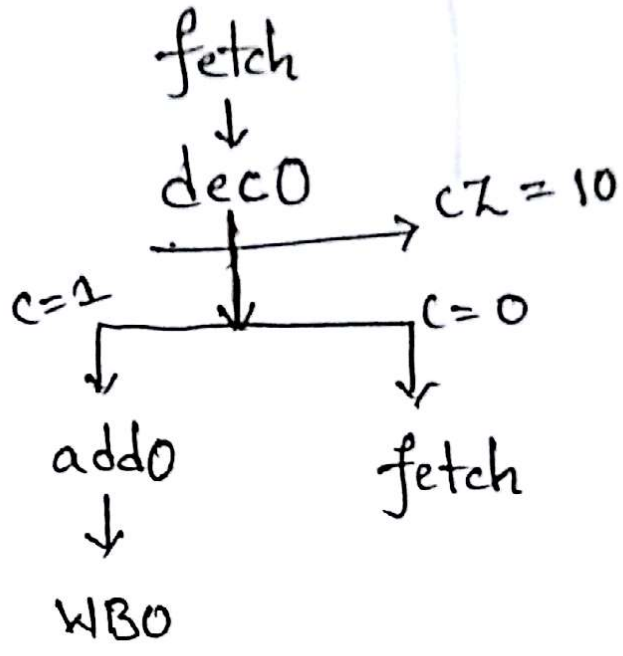
R-type :



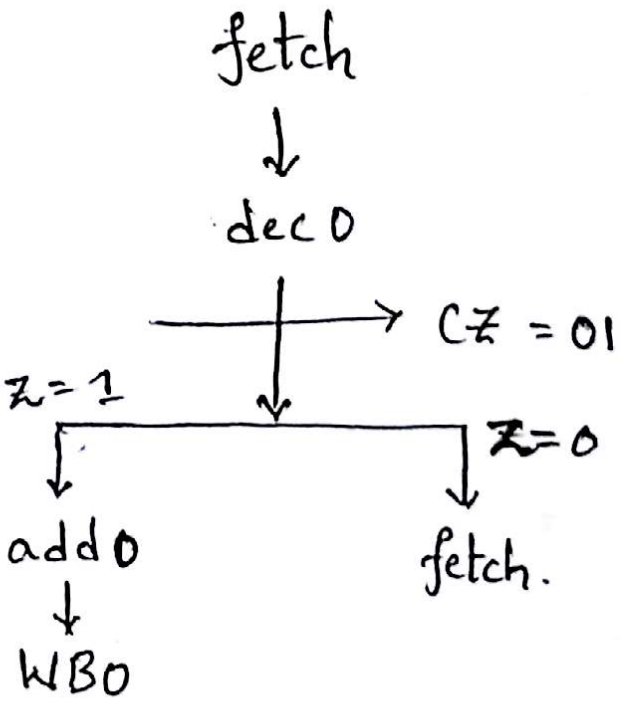
(i) ADD R_c R_a R_b

(ii) ADC R_c R_a R_b





(iii) ADZ R_c R_a R_b



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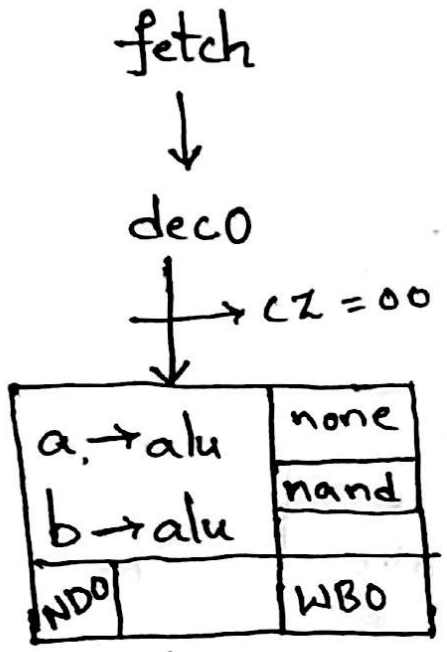
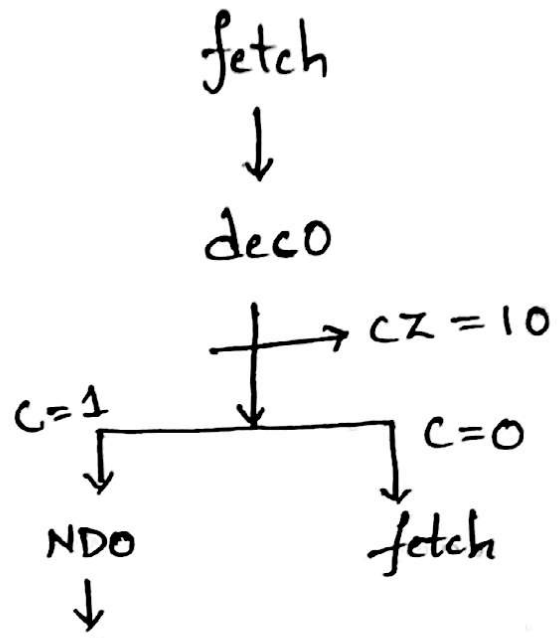
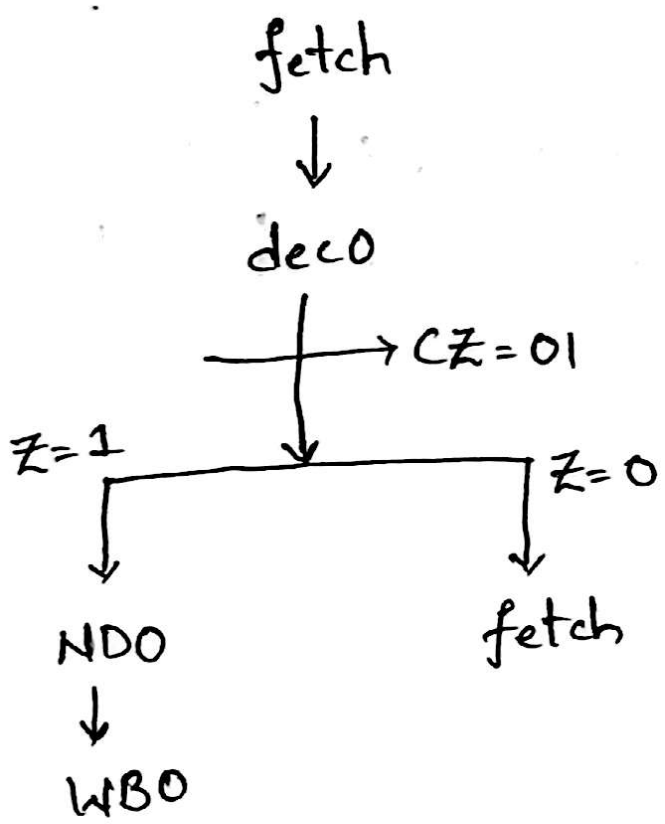
(iv) NDU R_c R_a R_b



(v) NDC R_c R_a R_b



(vi) NDZ R_c R_a R_b



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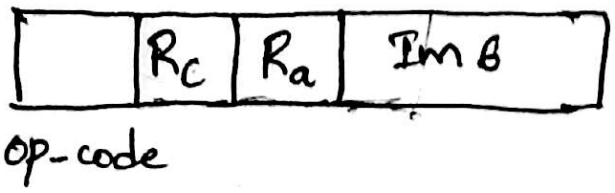
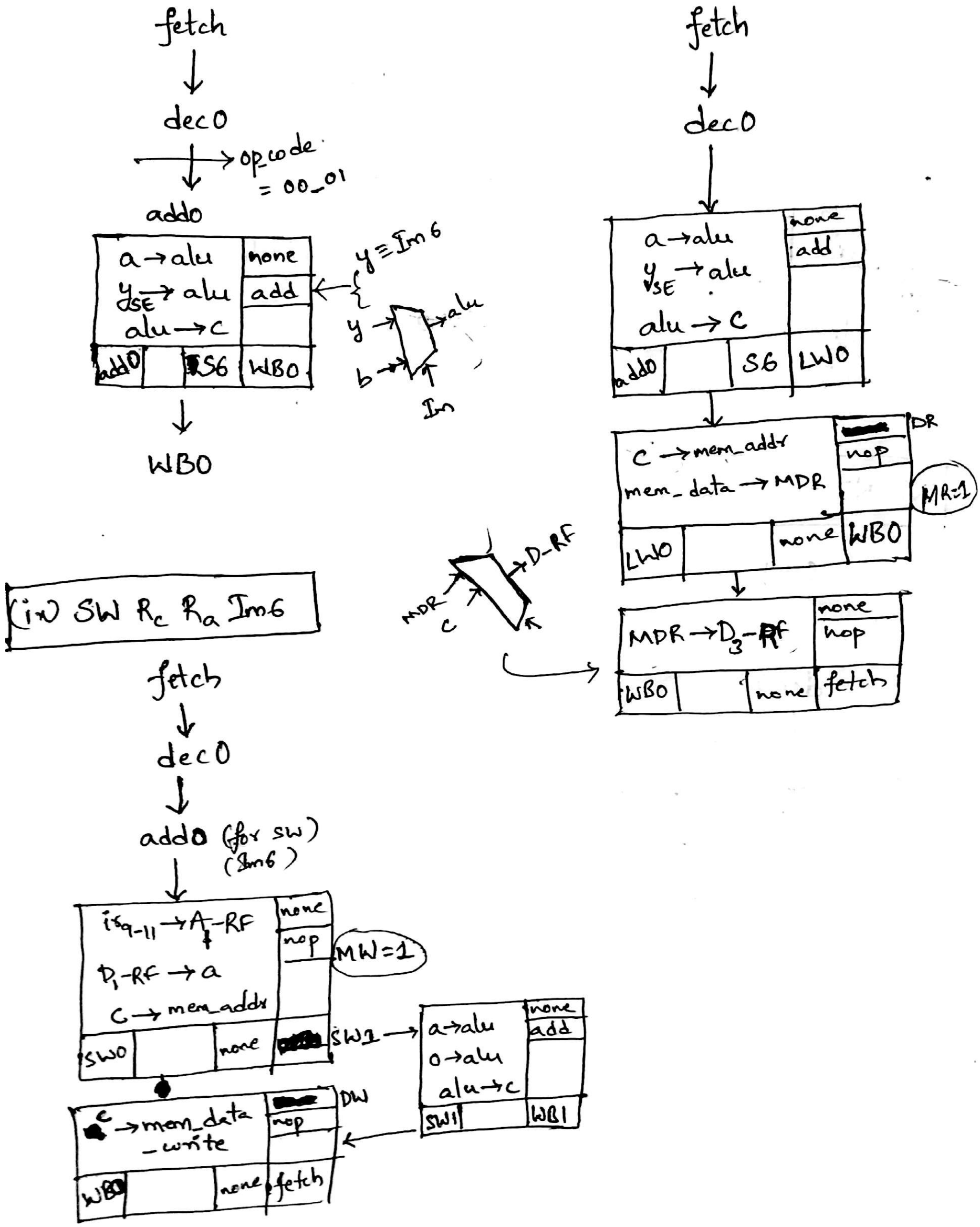
I-type:



(vii) ADI R_C R_a Imm6

(viii) LW R_C R_a Imm6



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(0x) BEQ Ra, Rb Imm6

fetch

↓

~~decode~~

→ OP_code 1xxx

↓ ~~11000~~

ir_{9-11} → A_1-RF, A_3-RF	none
ir_{6-8} → A_2-RF	none
D_1-RF → b	
D_2-RF → a	none
decl	none / breq

↓

a → alu	none
b → alu	equal
	none
breq / none	bc

e=1 ↓ ↓ e=0

pc → alu	none
Y_{SE} → alu	add
alu → pc	
breq / S6	

pc → alu	none
+1 → alu	add
alu → pc	
IPC / none	fetch

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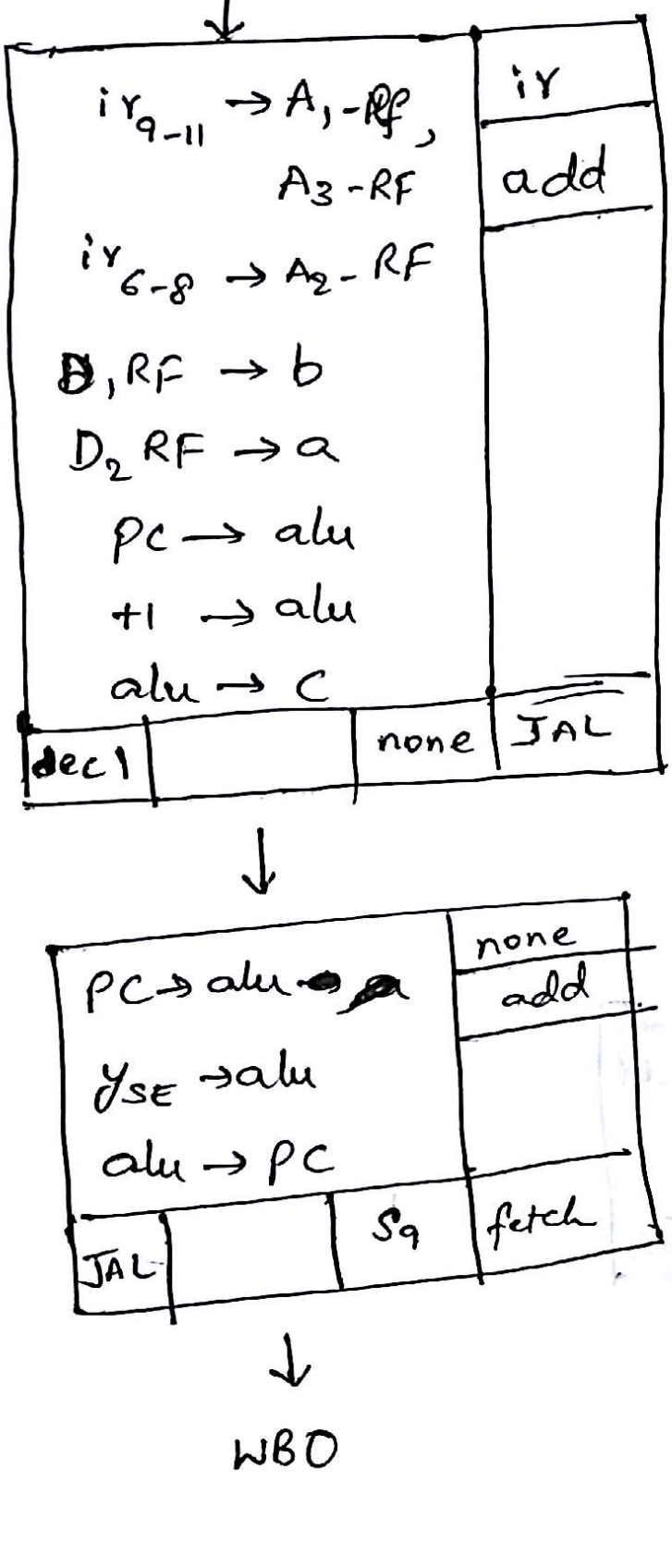
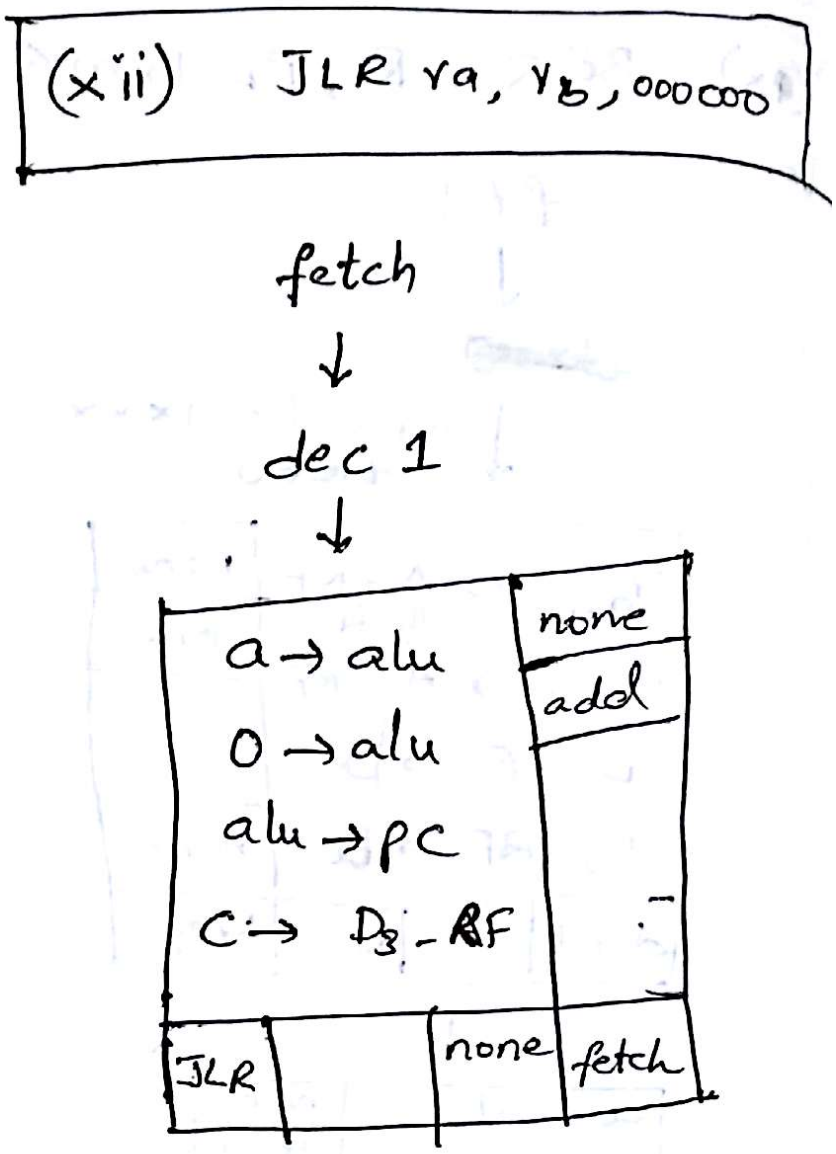
J-type

(xi) JAL r_a Imm9



(xii) JLR r_a, r_b, 000000



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(xiii) LHLI Ra Imm?

fetch

↓

dec 1

↓

$Y_{EE} \rightarrow D_3 - RF$ $C \rightarrow PC$	none none
Alu | | Sq	

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