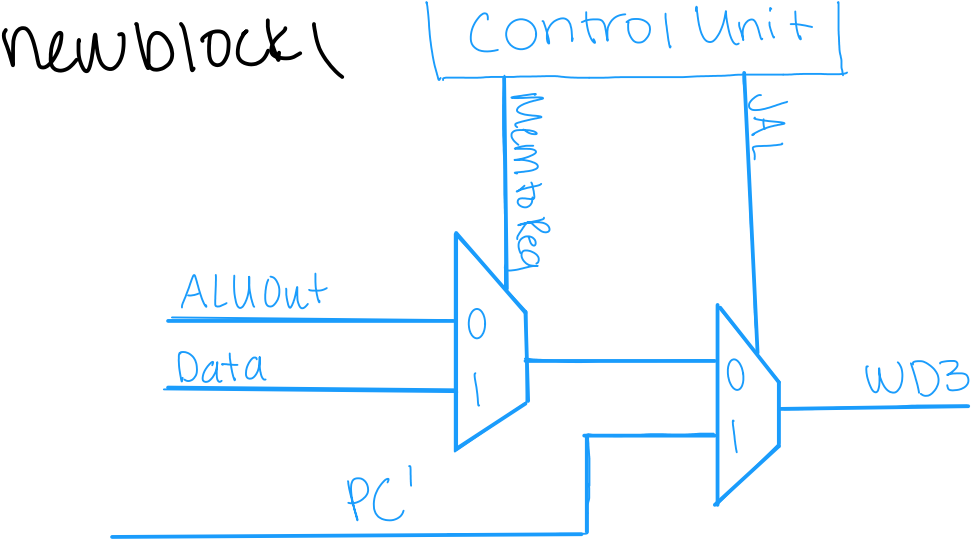
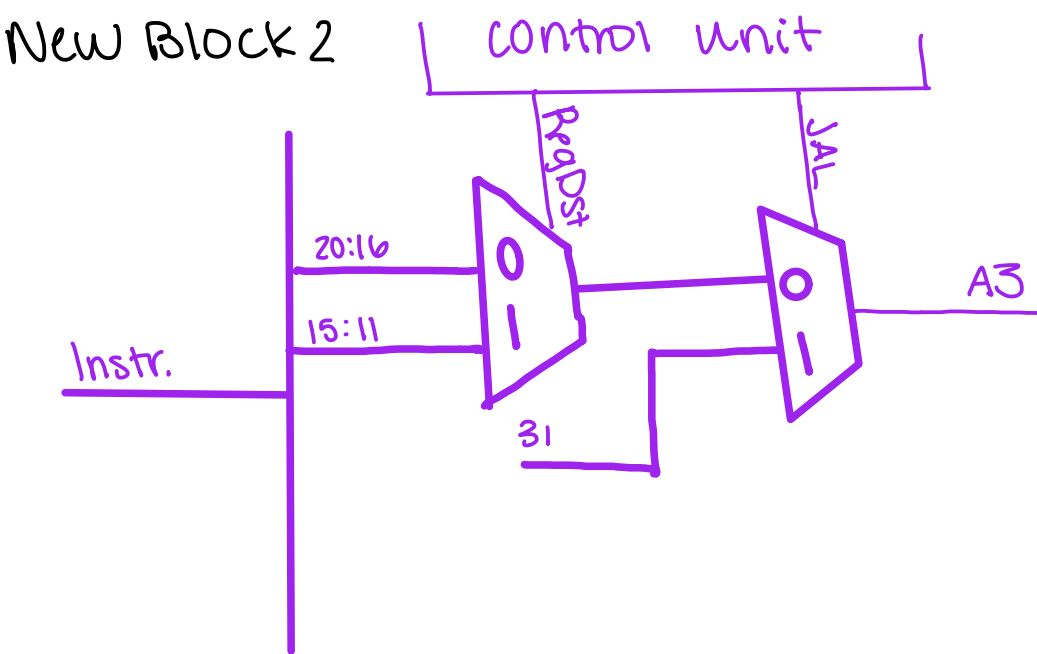
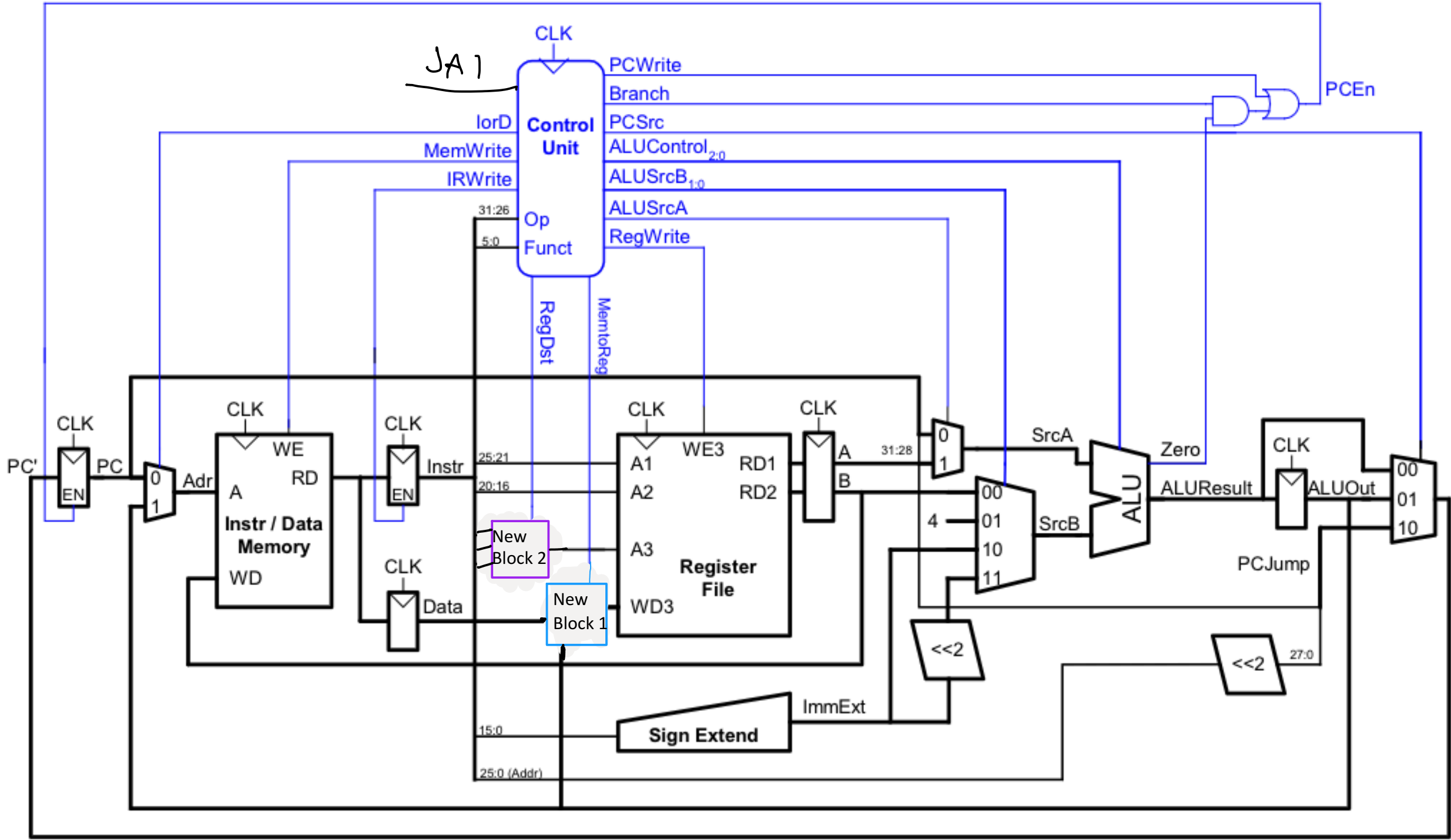


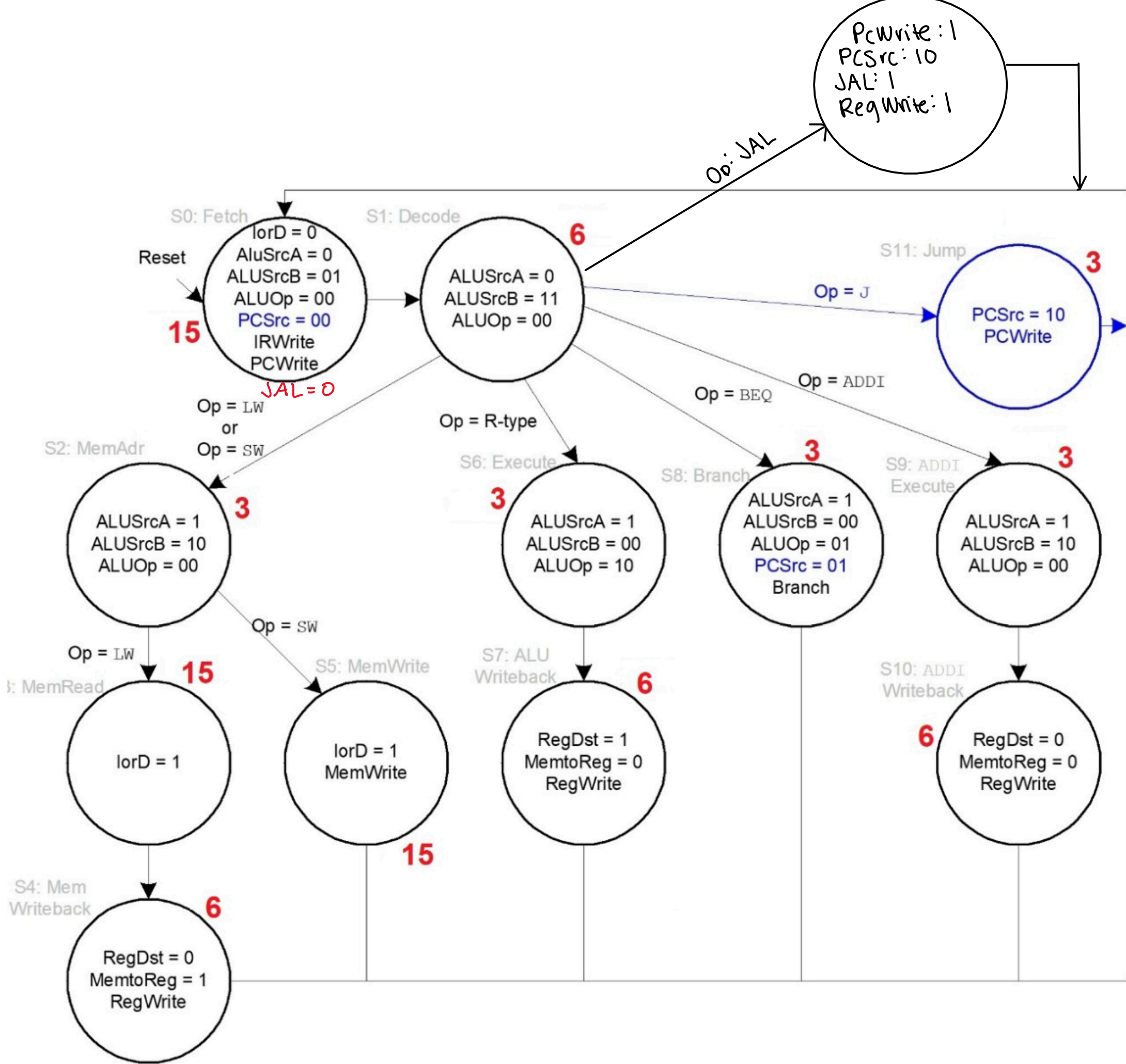
Homework 5

Tuesday, August 16, 2022 3:26 PM

i)



ii)



Q2

- i) 15ns b/c it is the time of the longest cycle
- ii)  $5 \cdot 15 = 75\text{ns}$  b/c lw has 5 cycles and the cycle time is 15
- iii) 45ns b/c it is the length of the entire lw instruc.
- iv) Execution time = #instructions  $\cdot$  CPI  $\cdot$   $T_c$

multicycle:

CPI

|        | %        | #Cycles |
|--------|----------|---------|
| load   | 0.08 (5) |         |
| store  | 0.04 (4) |         |
| branch | 0.33 (3) |         |
| jump   | 0.18 (3) |         |
| R type | 0.37 (4) |         |

total CPI = 3.57

# instructions: 100

CPI: 3.57

$T_c$ : 15 ns

Execution time = 5355 ns

singlecycle:

# instructions: 100

CPI: 1

$T_c$ : 45 ns

execution time: 4500 ns