

ADD / ADC / ADZ / NDU / NDC / NDZ

PC → <sup>inc</sup>, IMem-A

$\text{inc} \rightarrow \text{pc}$

IMem-D → IR

IR<sub>11-9</sub> → RF-AI

IR<sub>8-6</sub> → RF-A2

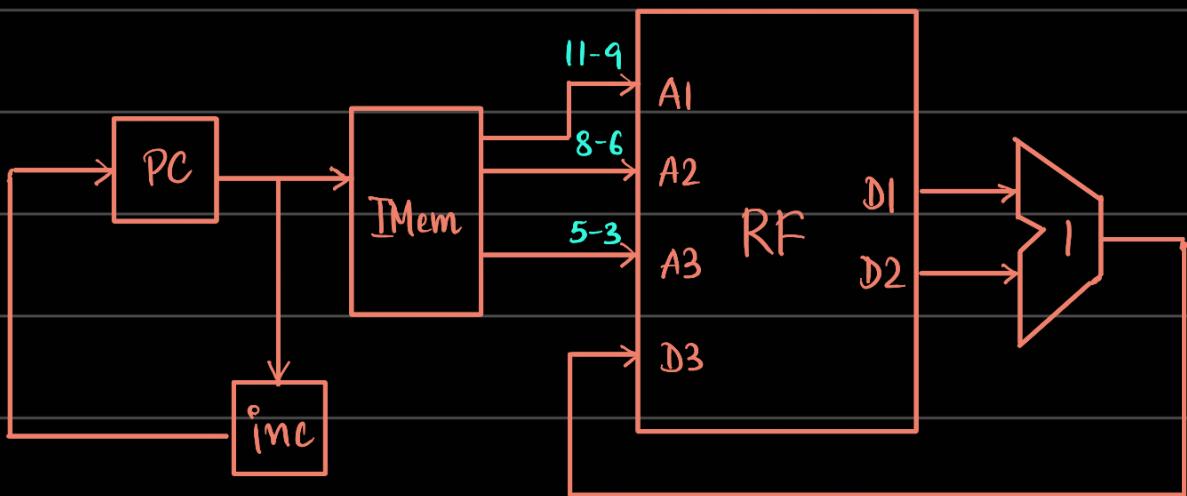
Pc → γ7

RF-DI → ALU-A

RF-D2 → ALU-B

ALU-C → RF-D3

IR<sub>5-3</sub> → RF-A3



# ADL

PC → inc, IMem-A

inc → PC

IMem-D → IR

IR<sub>11-9</sub> → RF-A1

IR<sub>8-6</sub> → RF-A2

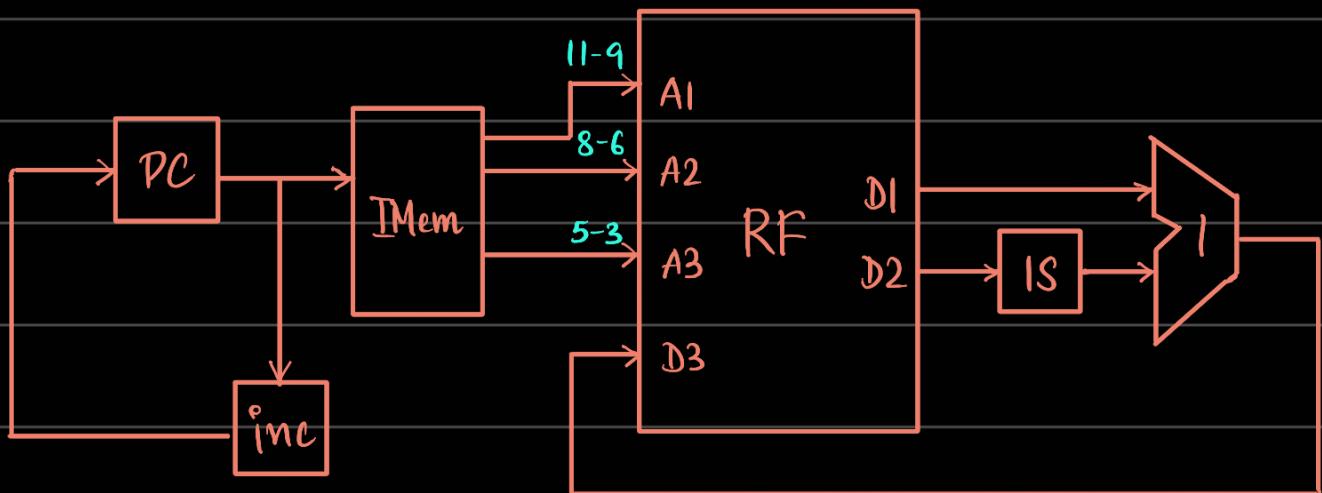
PC → γ7

RF-D1 → ALU-A

RF-D2 → IS → ALU-B

ALU-C → RF-D3

IR<sub>5-3</sub> → RF-A3



# ADT

PC  $\rightarrow$  inc, IMem-A

inc  $\rightarrow$  PC

IMem-D  $\rightarrow$  IR

IR<sub>11-9</sub>  $\rightarrow$  RF-A1

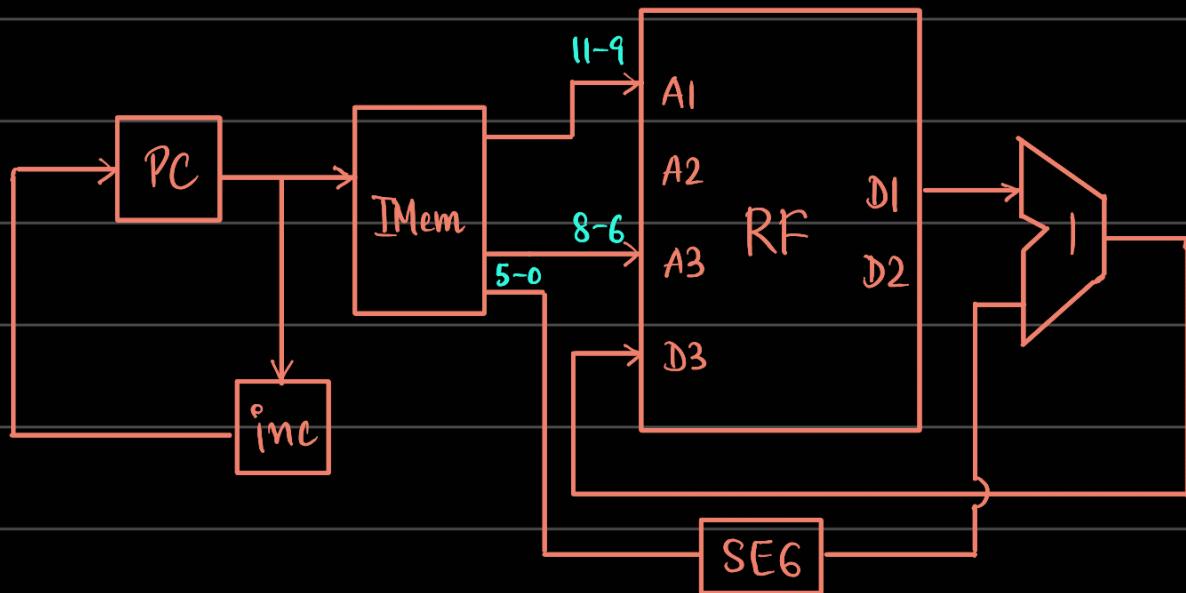
IR<sub>8-6</sub>  $\rightarrow$  RF-A3

PC  $\rightarrow$  γ7

RF-D1  $\rightarrow$  ALU-A

IR<sub>5-0</sub>  $\rightarrow$  SEG  $\rightarrow$  ALU-B

ALU-C  $\rightarrow$  RF-D3



# LHT

PC → inc, IMem-A

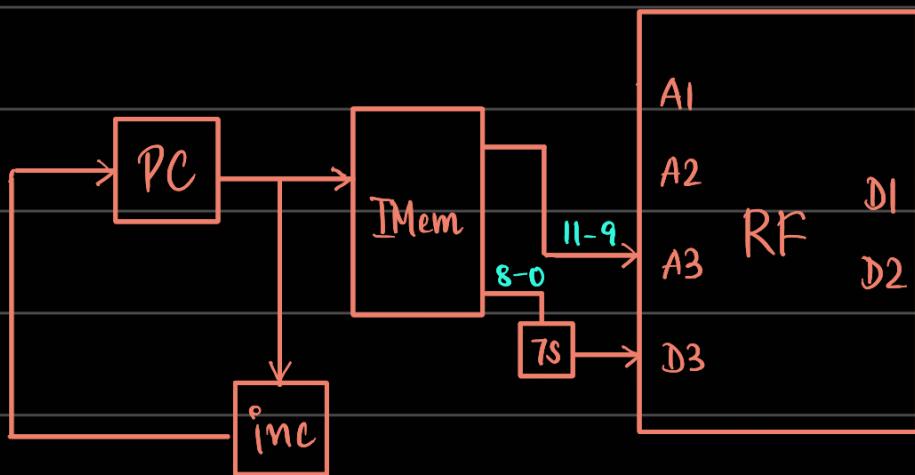
inc → PC

IMem-D → IR

PC → γ7

IR<sub>11-9</sub> → RF-A3

IR<sub>8-0</sub> → 7S → RF-D3



LW

PC → inc, IMem-A

inc → PC

IMem-D → IR

IR<sub>8-6</sub> → RF-A1

PC → γ7

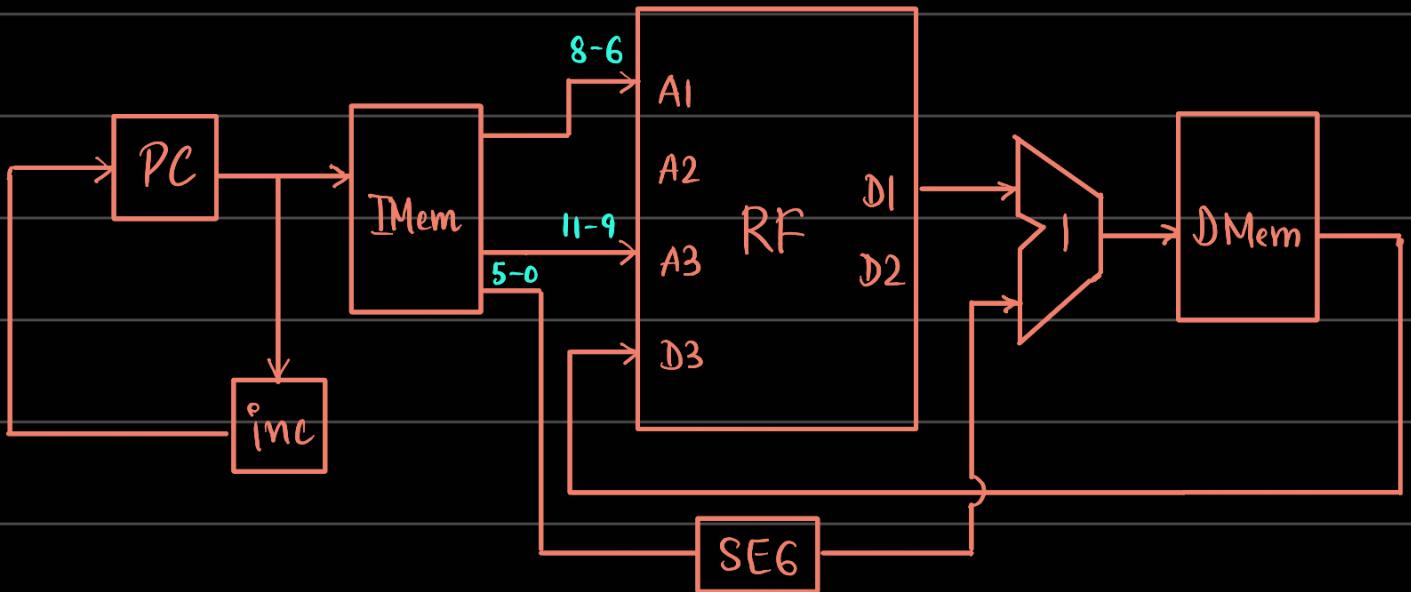
IR<sub>11-9</sub> → RF-A3

RF-D1 → ALU-A

IR<sub>5-0</sub> → SEG → ALU-B

ALU-C → DMem-A

DMem-D → RF-D3



SW

PC → inc, IMem-A

inc → PC

IMem-D → IR

IR<sub>11-9</sub> → RF-A1

IR<sub>8-6</sub> → RF-A2

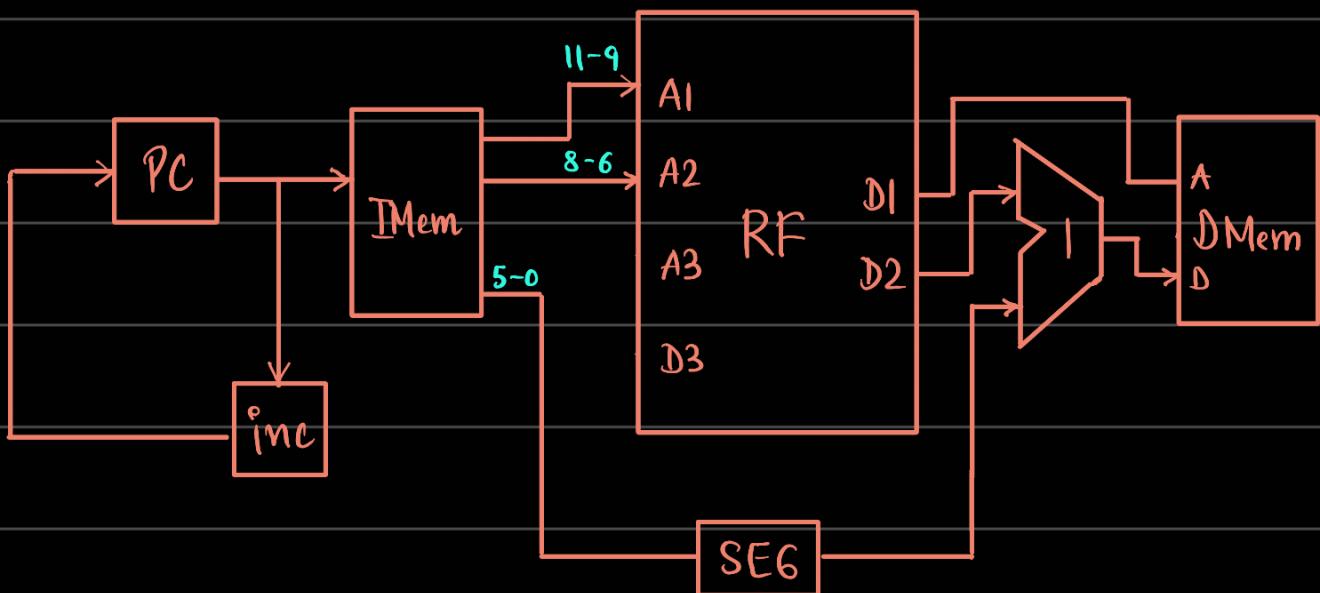
PC → γ7

RF-D2 → ALU-A

IR<sub>5-0</sub> → SEG → ALU-B

ALU-C → DMem-A

RF-D1 → DMem-D



LM

PC → inc, IMem-A

inc → PC

IMem-D → IR

IR<sub>II-q</sub> → RF-A1

PC → γ7

RF-D1 → inc, LMSM

LMSM → DMem-A

inc → LMSM

dec → RF-A3

DMem-D → RF-D3

SM

PC → inc, IMem-A

inc → PC

IMem-D → IR

IR<sub>11-9</sub> → RF-A1

dec → RF-A2

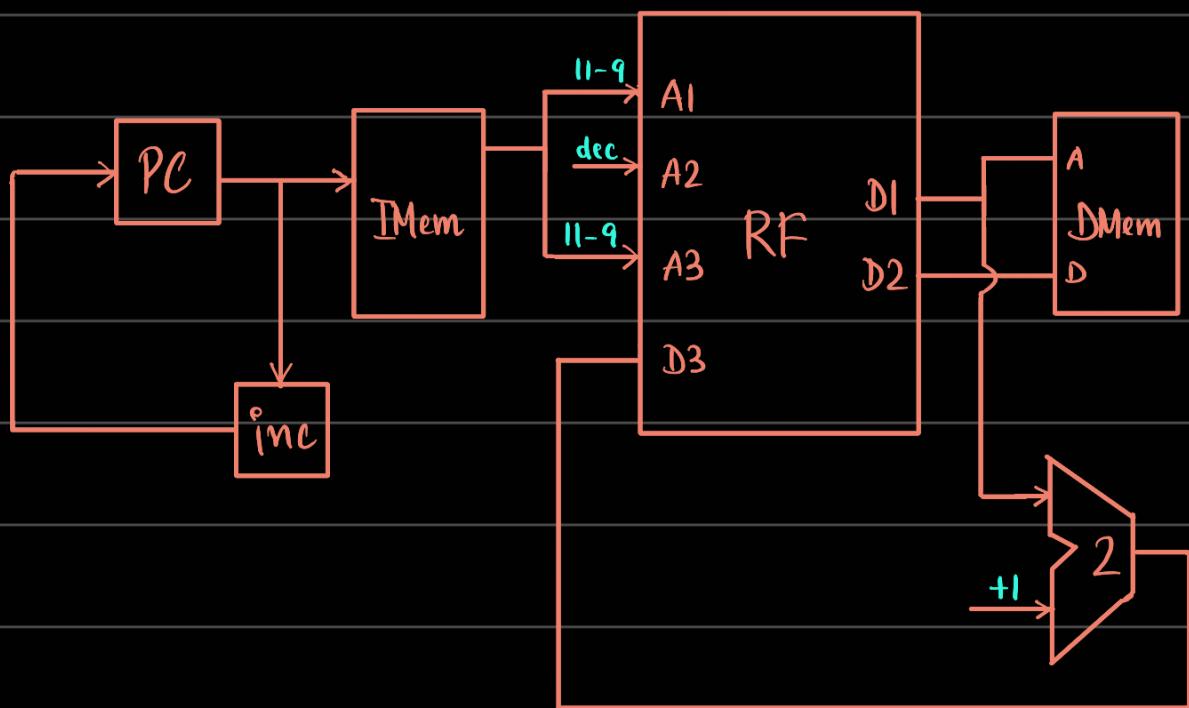
PC → γ7

RF-D1 → inc, LMSM

LMSM → DMem-A

inc → LMSM

RF-D2 → DMem-D<sup>in</sup>



BEQ

PC →  $\text{inc}$ , IMem-A

IMem-D → IR

IR<sub>11-9</sub> → RF-A1

IR<sub>8-6</sub> → RF-A2

PC → Z

RF-D1 → ALU-A

RF-D2 → ALU-B

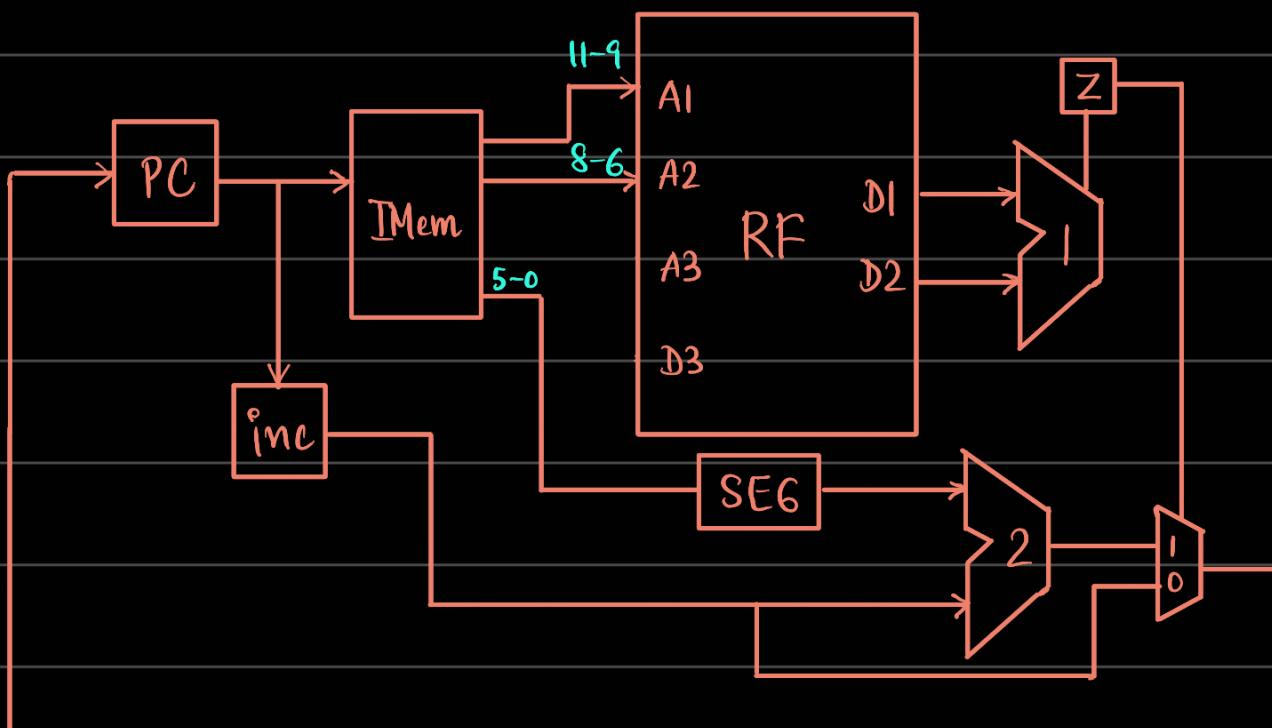
PC → ALU2-A

IR<sub>5-0</sub> → SE6 → ALU2-B

if ALU-Z == 1 then

ALU2-C → PC

else  $\text{inc}$  → PC



JAL

PC →  $i_{nc}$ , IMem-A

IMem-D → IR

PC → γ7

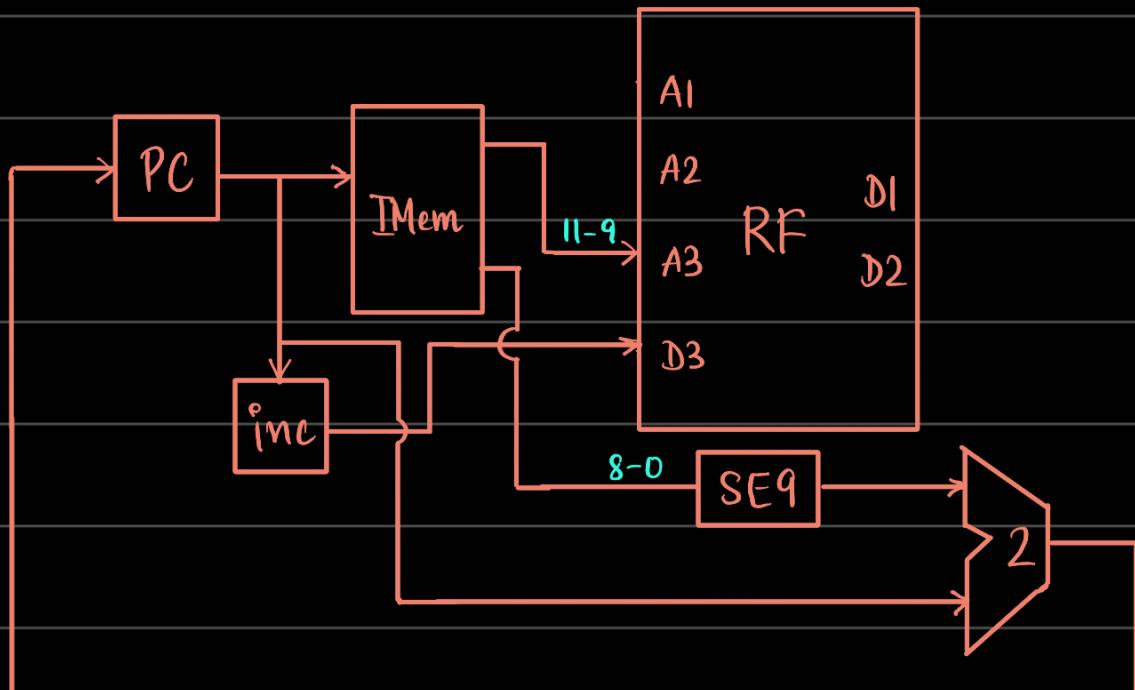
$i_{nc}$  → RF-D3

IR<sub>11-9</sub> → RF-A3

IR<sub>8-0</sub> → SEQ → ALU2-B

PC → ALU2-A

ALU2-C → PC



JLR

PC → IMem-A, inc

IMem-D → IR

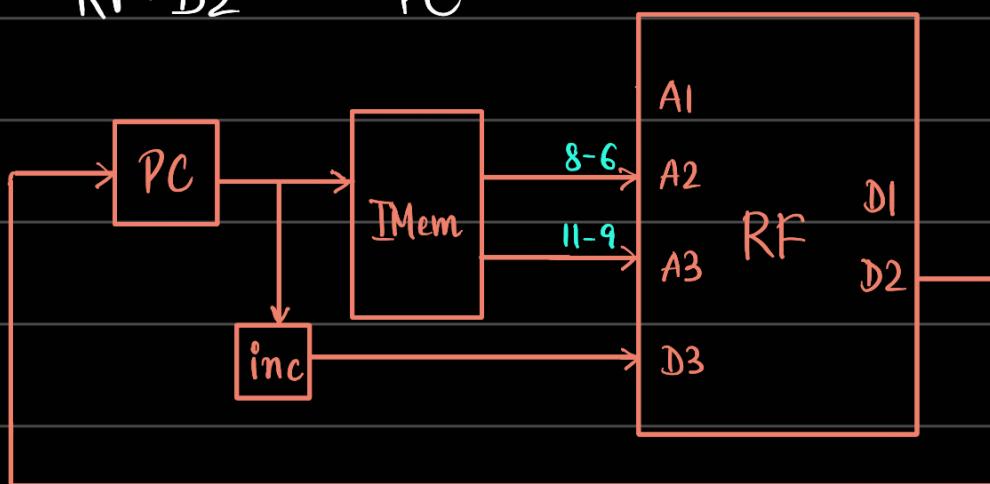
PC → γ7

inc → RF-D3

IR<sub>11-9</sub> → RF-A3

IR<sub>8-6</sub> → RF-A2

RF-D2 → PC



JRI

PC → IMem-A

IMem-D → IR

IR<sub>11-9</sub> → RF-A1

PC → γ7

RF-D1 → ALU-A

IR<sub>8-0</sub> → SEQ → ALU-B

ALU-C → PC

