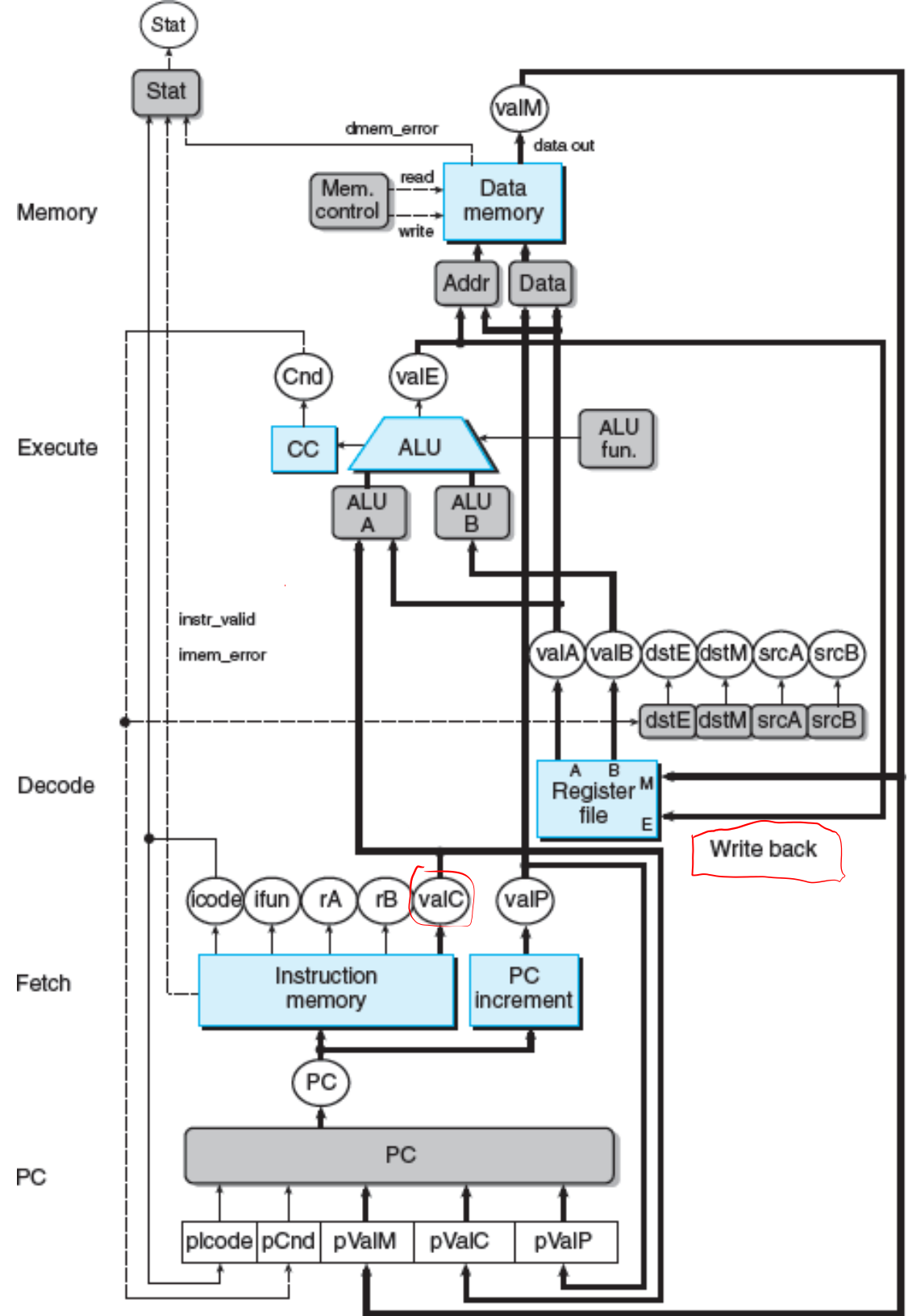
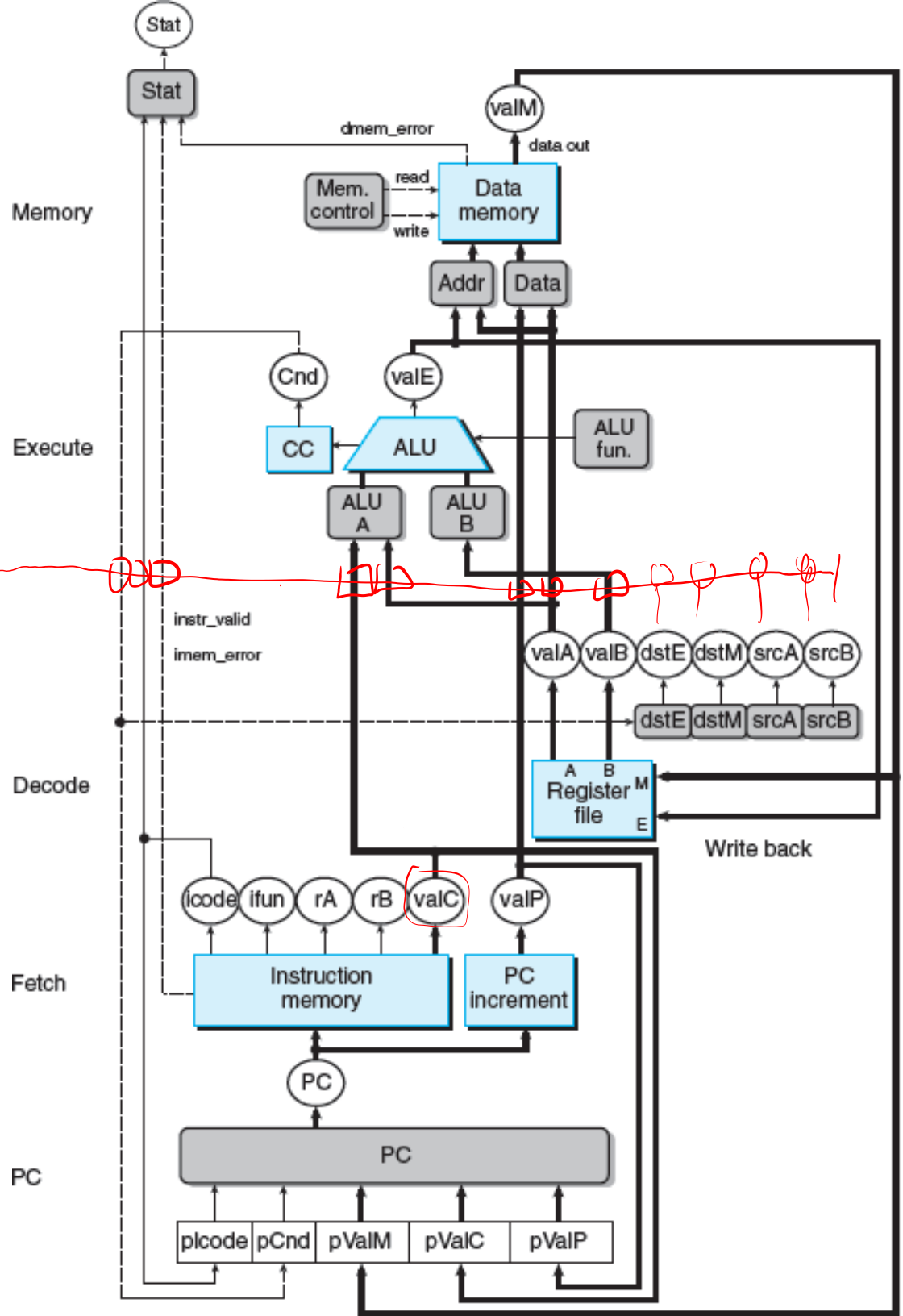
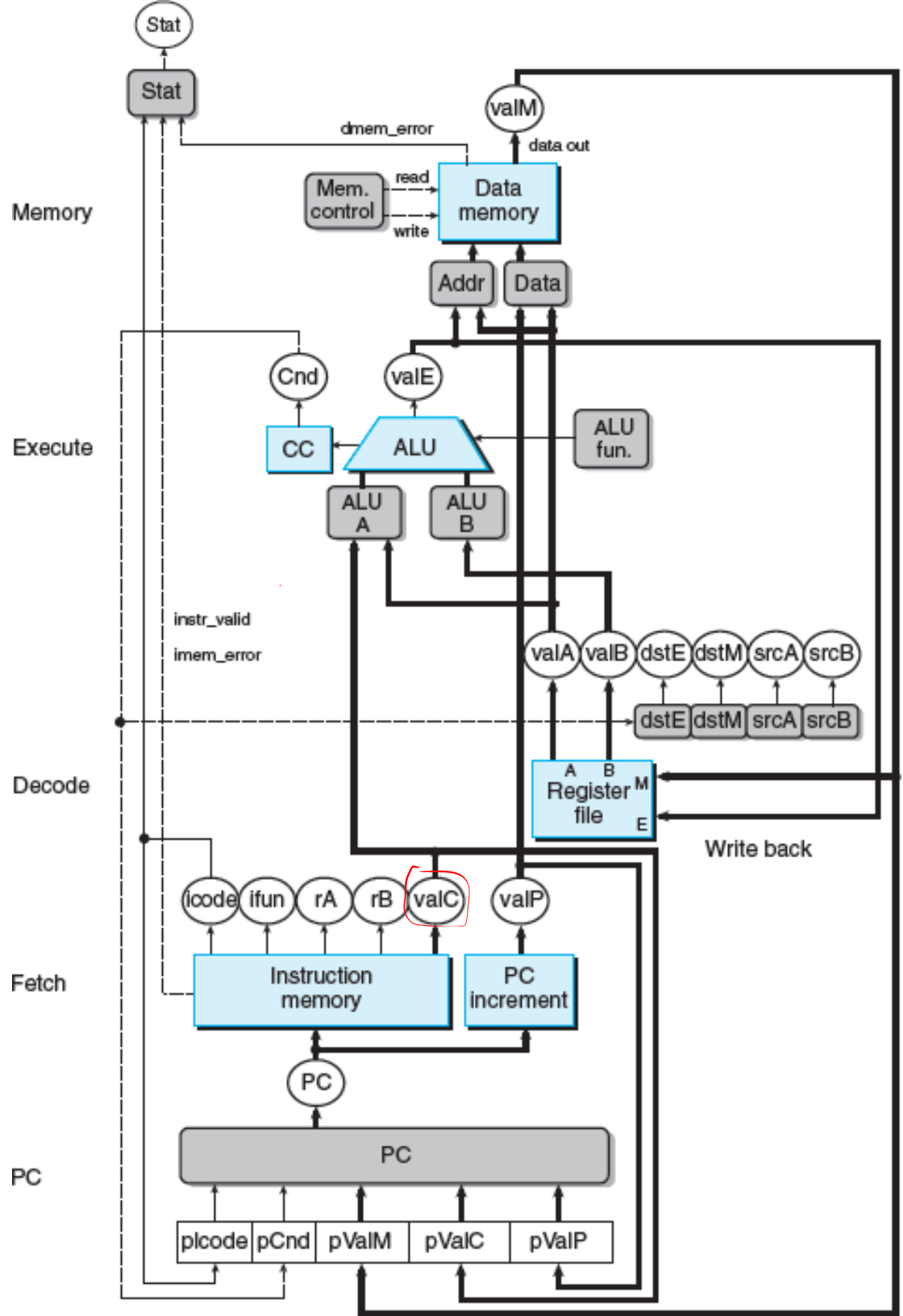




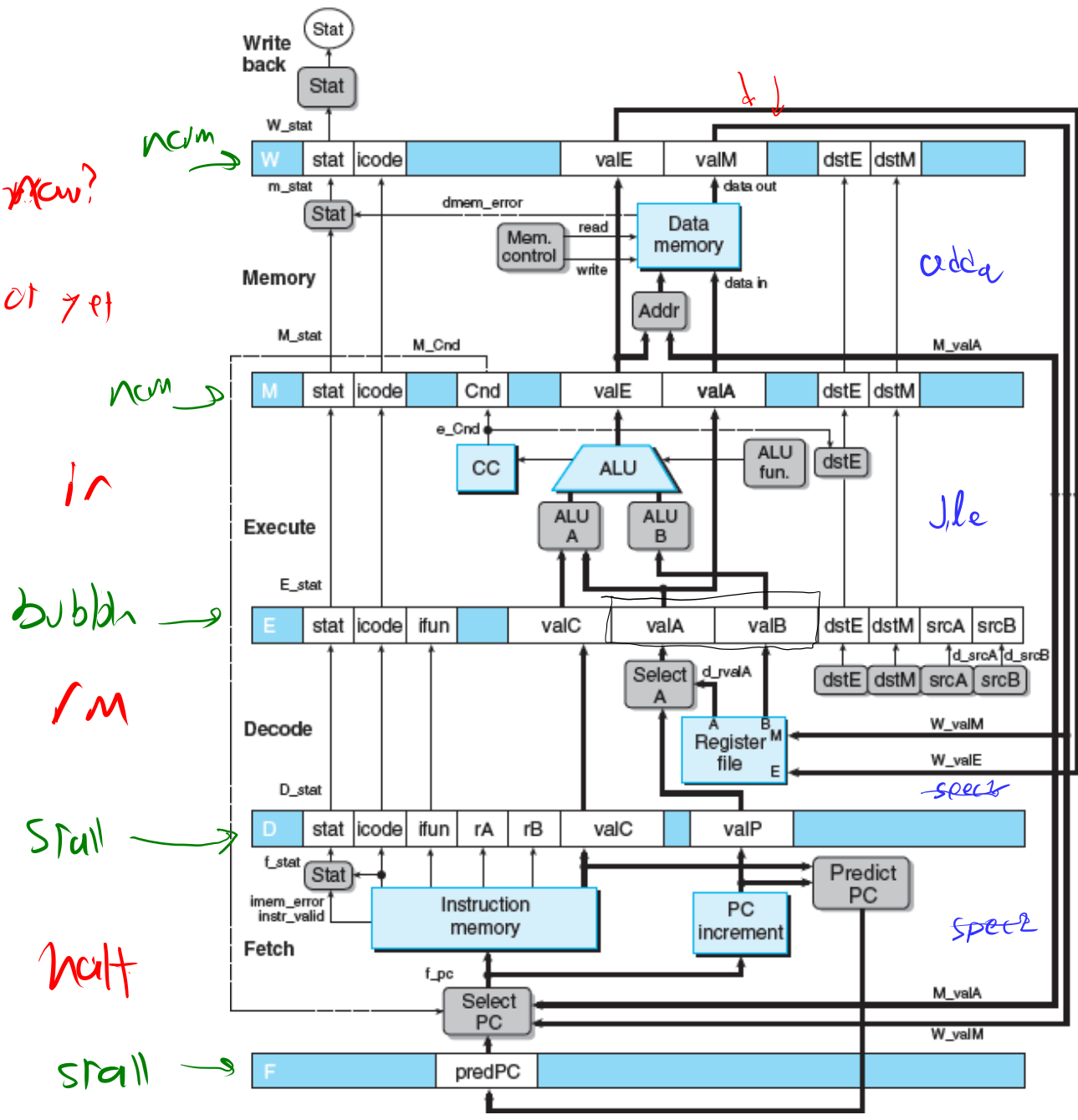
writeback?
icode & muxes







Halt - why not flow?
 forwarding? - not yet
 Prediction



Stall

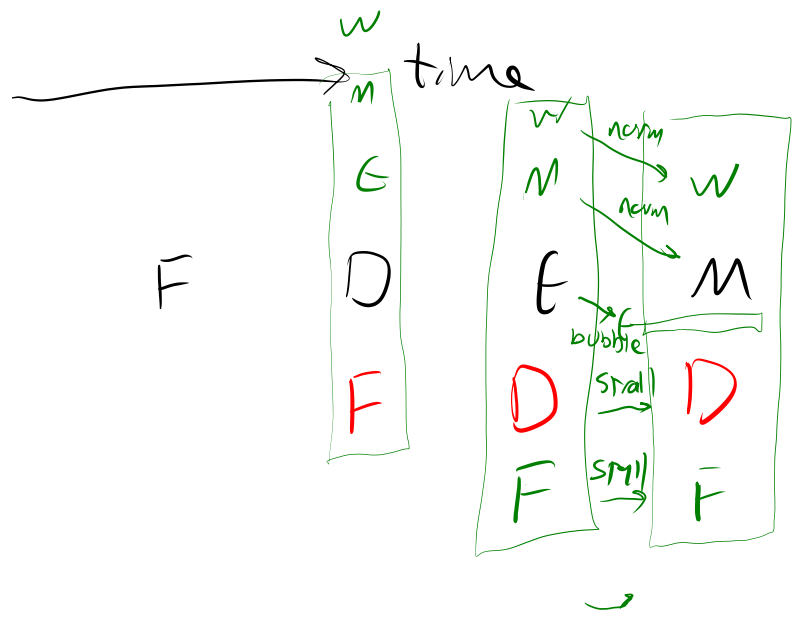
↳ ignore next tick
of clock

bubble

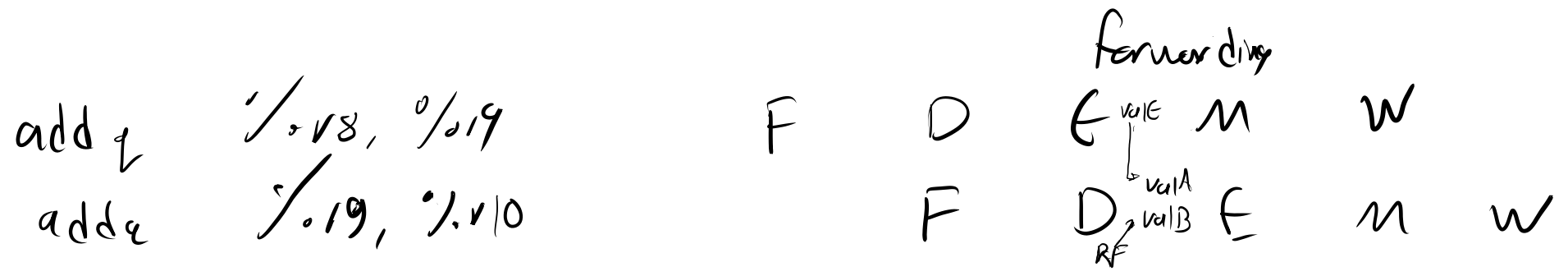
↳ reset everything
(to NOP)

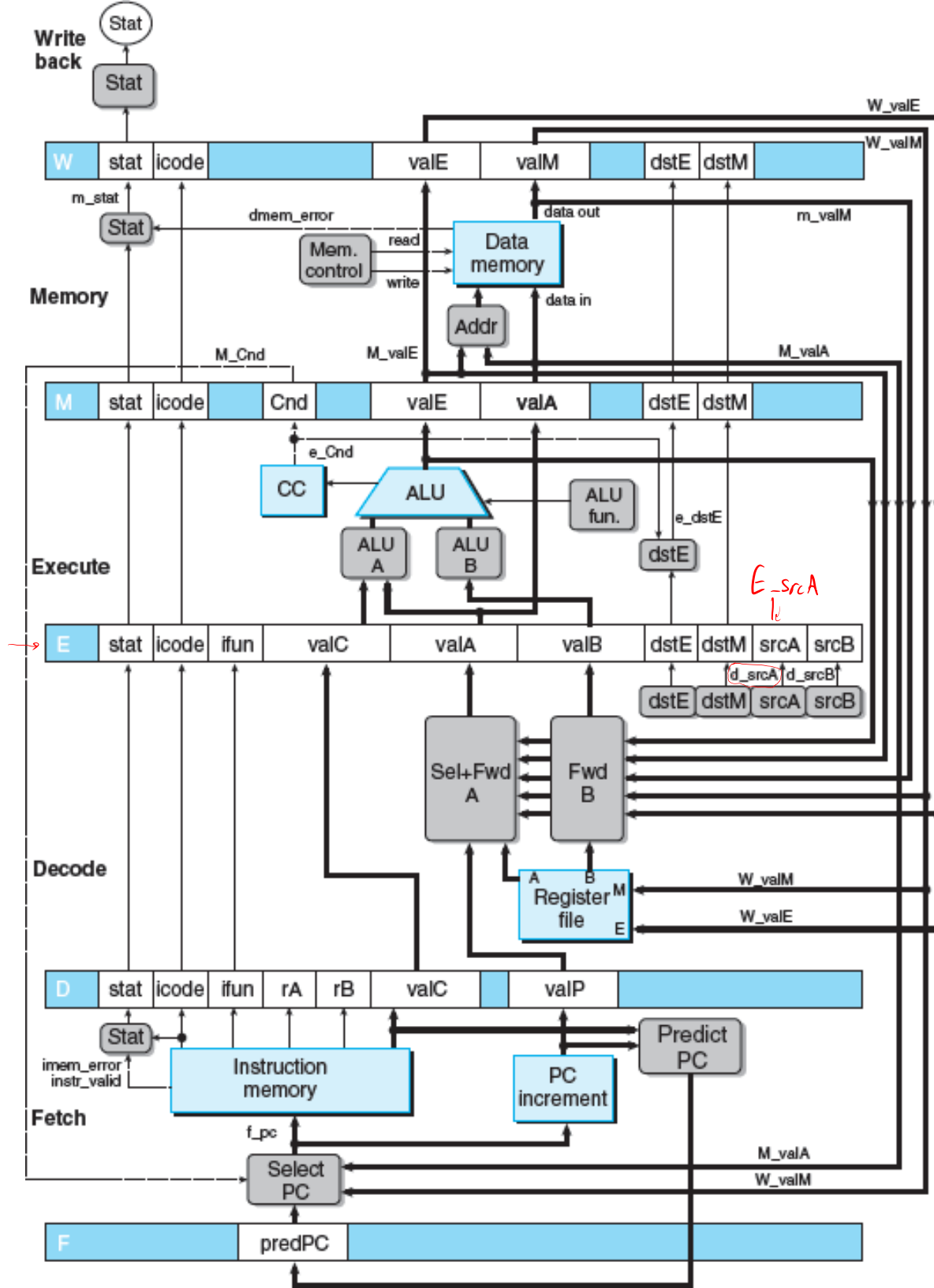
Hazards

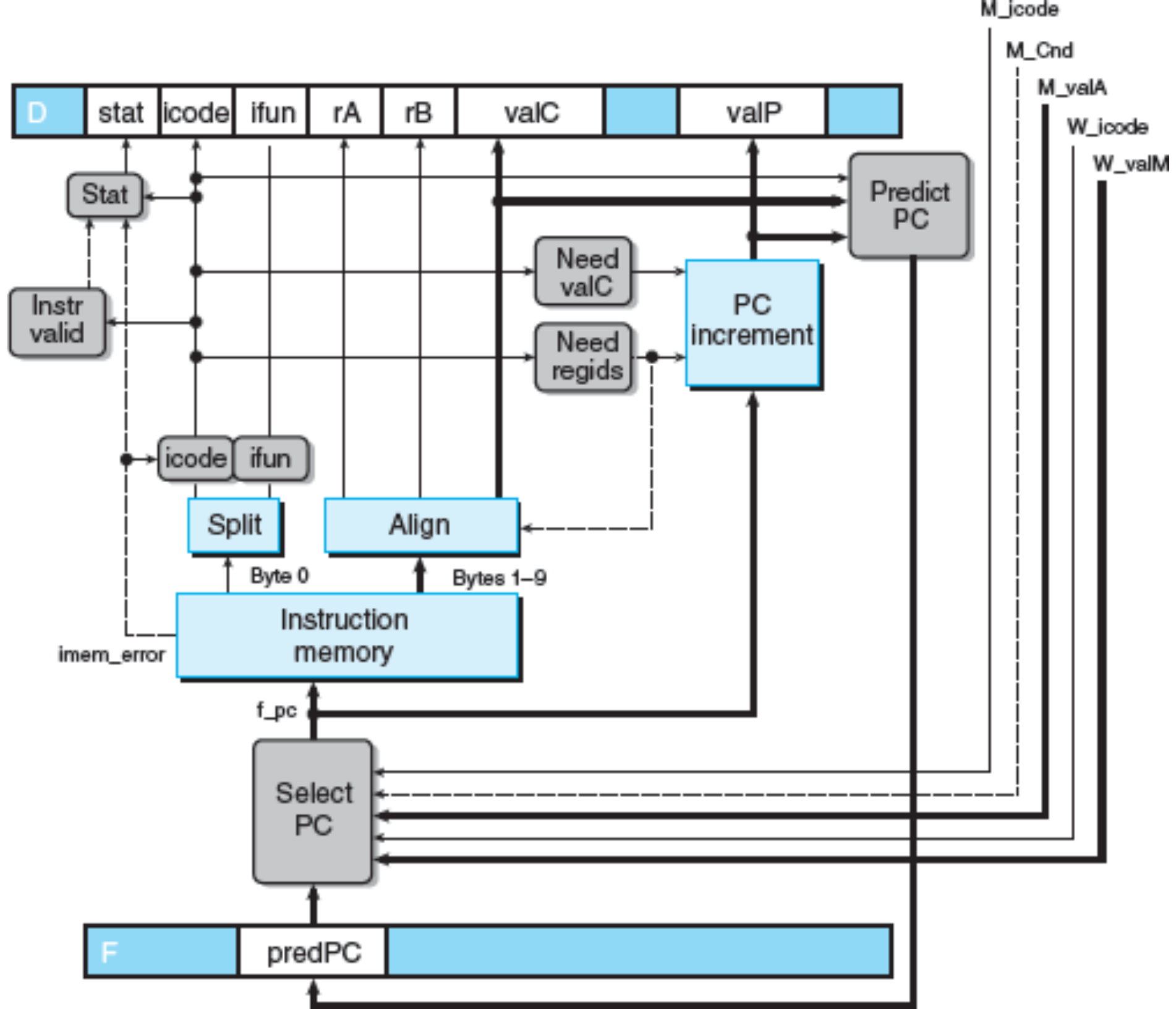
add
 jmp
 rm
 addq %r8, %r9
 addq %r9, %r10
 nop

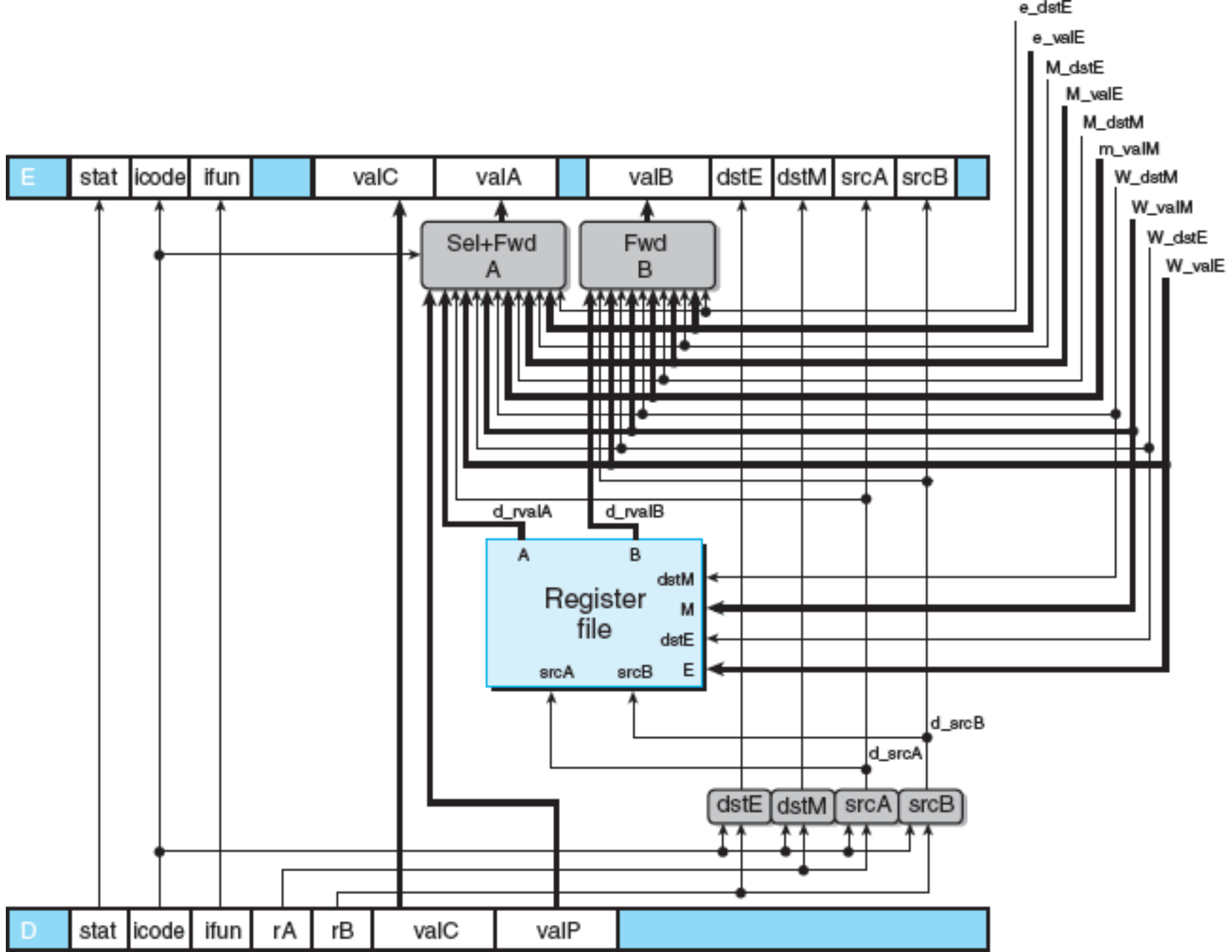


WD
 D D E MW

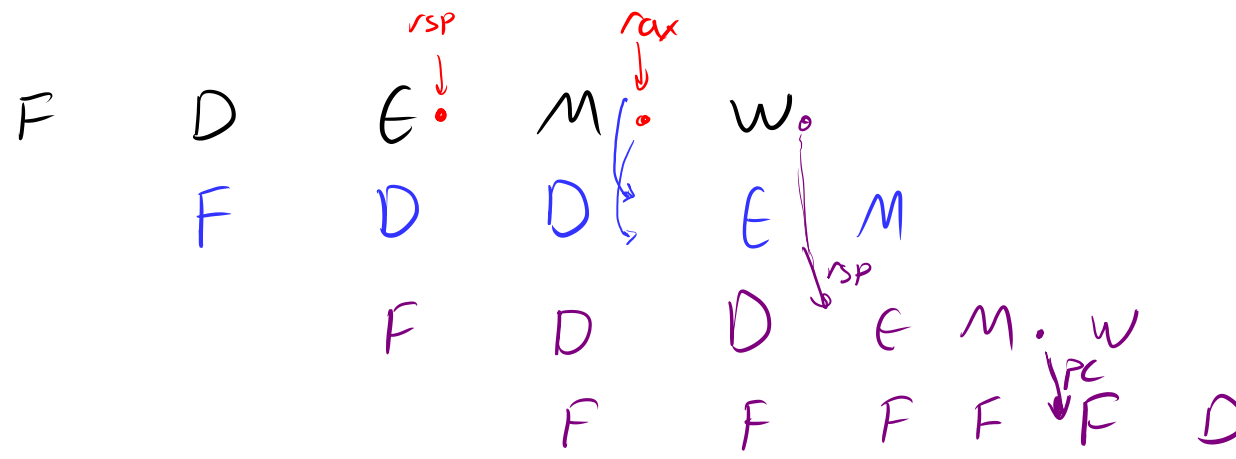








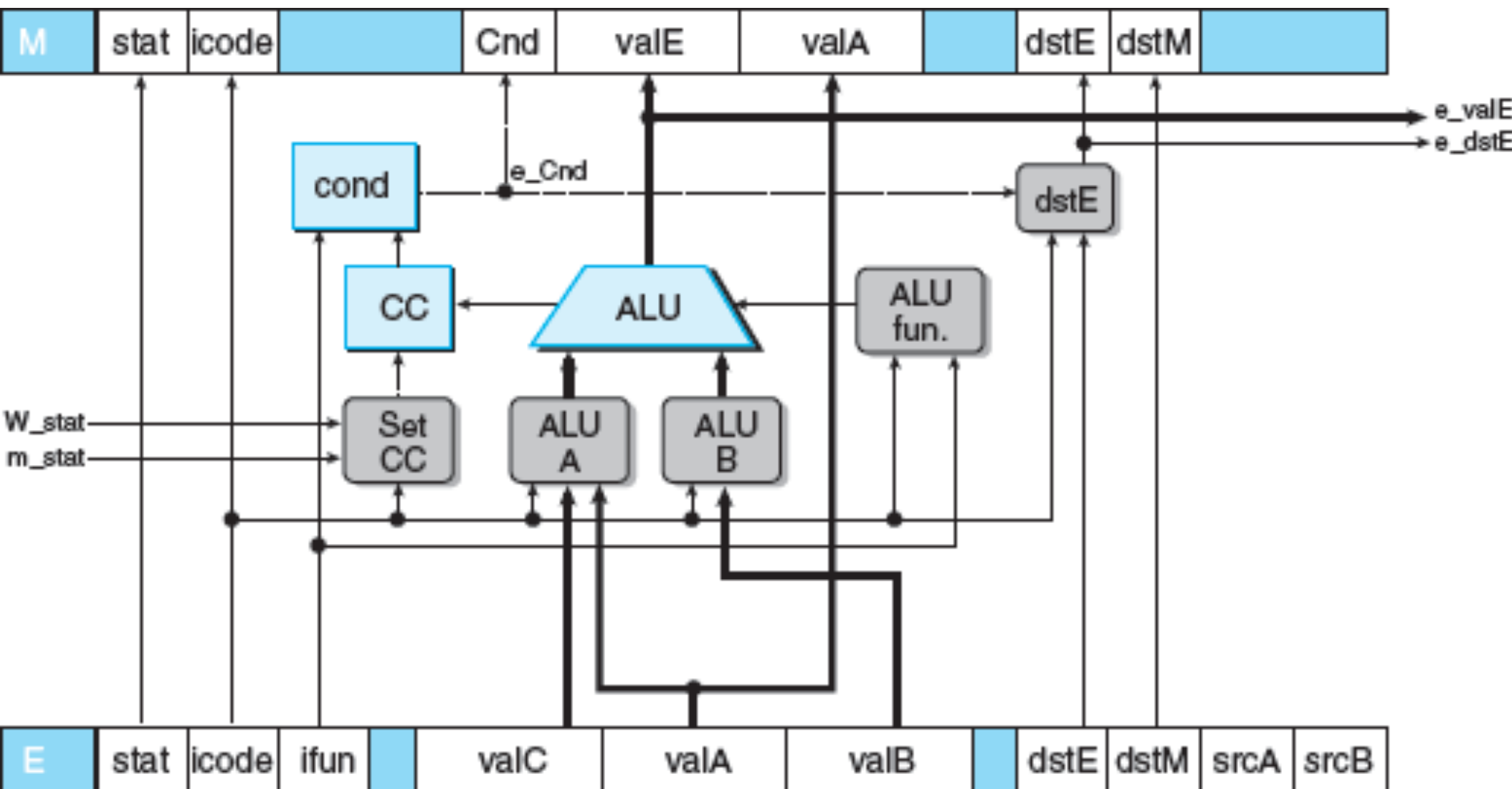
popq %rax
 addq %rsp, %rax
 ret
 ???
 ...

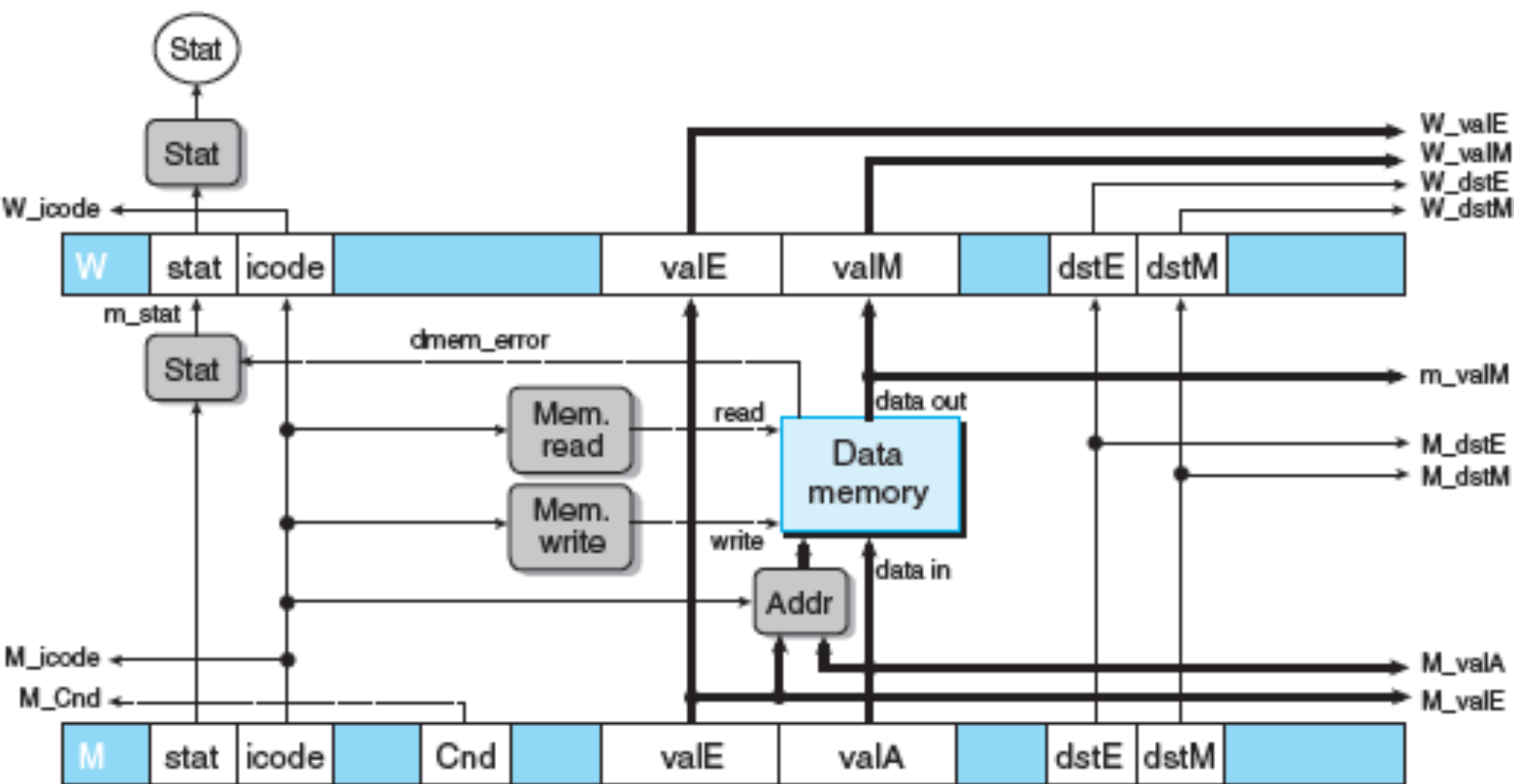


pop
 nop
 add

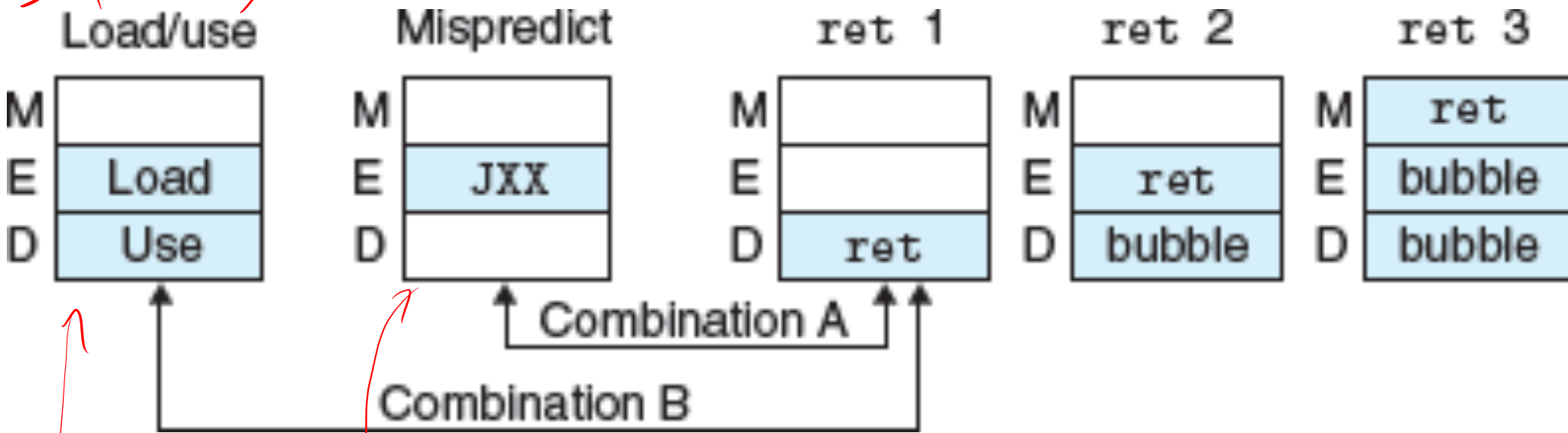
Hazard

Seq of nodes that could need to spill





POP memory
 from mem
 anti read
 reg



stall
 1 cycle

might
 bubble all after

