Instructions	Fetch	Decode	Execute	Memory	Write Back	PC
rrmovq rA, rB	icode:ifun<-M[PC] rA:rB M[PC+1] valP<-PC+2	valA <- R[rA]	valE <- 0 + valA	-	R[rB] <- valE	PC <- valP
irmovq V, rB	icode:ifun<-M[PC] rA:rB<-M[PC+1] valC<-M[PC+2] valP<-PC+10	-	valE <- 0 + valC	-	R[rB] <- valE	PC <- valP
rmmovq rA, D(rB)	icode:ifun <- M_1[PC] rA:rB <- M_1[PC+2] valC <- M_8[PC+2] valP <- PC+10	valA <- R[rA] valB <- R[rB]	valE <- valB + valC	M_8[valE] <- valA	-	PC <- valP
mrmovq D(rB), rA	icode:ifun <- M_1[PC] rA:rB <- M_1[PC+2] valC <- M_8[PC+2] valP <- PC+10	valA <- R[rA] valB <- R[rB]	ValE <- ValB +ValC	ValM <- M_8[ValE]	R[rA] <- ValM	PC <- valP
OPq rA, rB	icode:ifun <- M_1[PC] rA:rB <- M_1[PC+1] valP <- PC+2	valA <- R[rA] valB <- R[rB]	valE <- valB OP valA Set CC	-	R[rB] <-valE	PC <- valP
jXX Dest	icode:ifun <- M_1[PC] valC <- M_8[PC+1] valP <- PC + 9	-	Cnd <- Cond(CC,ifun)	-	-	PC <- Cnd ? valC : valP
pushq rA	icode:ifun <- M_1[PC] rA:rB <- M_1[PC+1] valP <- PC + 2	valA <- R[rA] valB <- R[%rsp]	valE <- valB + (-8)	M_8[ValE] <- ValA	R[%rsp] <- ValE	PC <- valP
popq rA	icode:ifun <- M_1[PC] rA:rB <- M_1[PC+1] valP <- PC + 2	valA <- R[%rsp] valB <- R[%rsp]	valE <- valB + 8	valM <- M_8[valA]	R[%rsp] <- ValE R[rA] <- ValM	PC <- valP

Decode/Write back and Execute

icode	Instructions	Decode	Write Back	Execute
2 - 0010	rrmovq rA, rB	valA <- R[rA]	R[rB] <- valE	valE <- 0 + valA
3 - 0011	irmovq V, rB	-	R[rB] <- valE	valE <- 0 + valC

4 - 0100	rmmovq rA, D(rB)	valA <- R[rA]
		valB <- R[rB]
			-	valE <- valB + valC

5 - 0101	mrmovq D(rB), rA	valA <- R[rA]
		valB <- R[rB]
			R[rA] <- ValM	ValE <- ValB +ValC

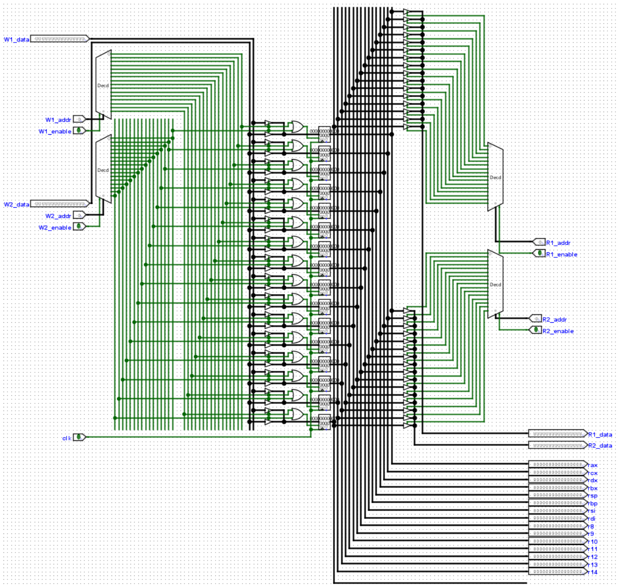
6 - 0110	OPq rA, rB	valA <- R[rA]
		valB <- R[rB]
			R[rB] <-valE	valE <- valB OP valA
				Set CC

7 - 0111	jXX Dest	-	-	Cnd <- Cond(CC,ifun)

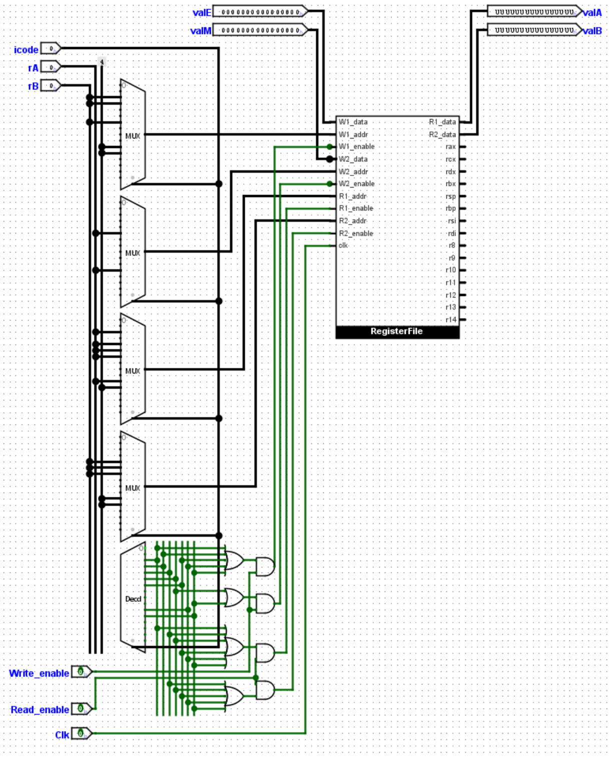
A - 1010	pushq rA	valA <- R[rA]
		valB <- R[%rsp]
			R[%rsp] <- ValE	valE <- valB + (-8)

B - 1011	popq rA	valA <- R[%rsp]
		valB <- R[%rsp]
			R[%rsp] <- ValE
			R[rA] <- ValM
				valE <- valB + 8

Decode/Write Back:

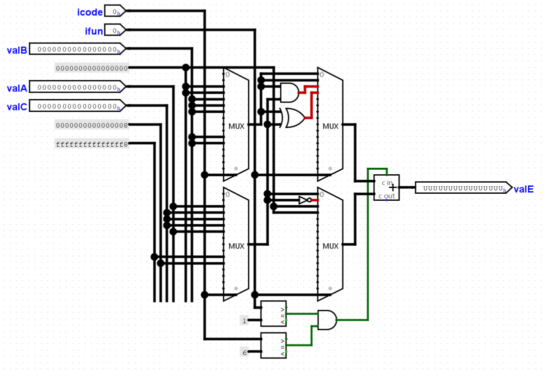


RegisterFile

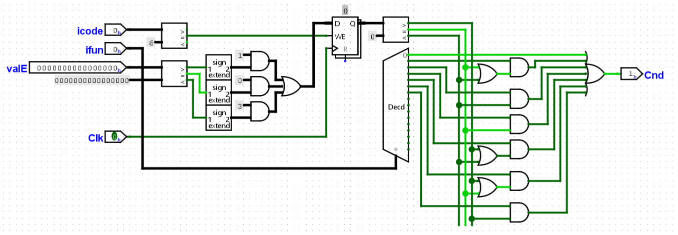


Decode

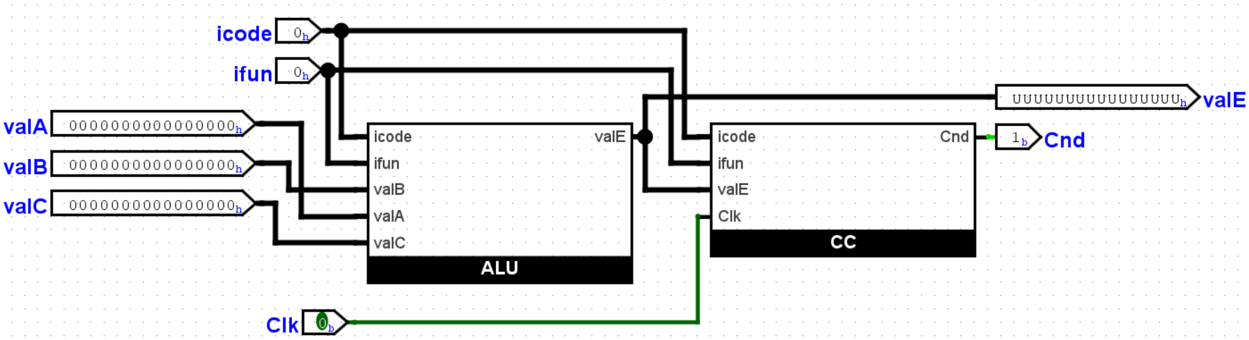
Execute:



ALU



CC



Execute