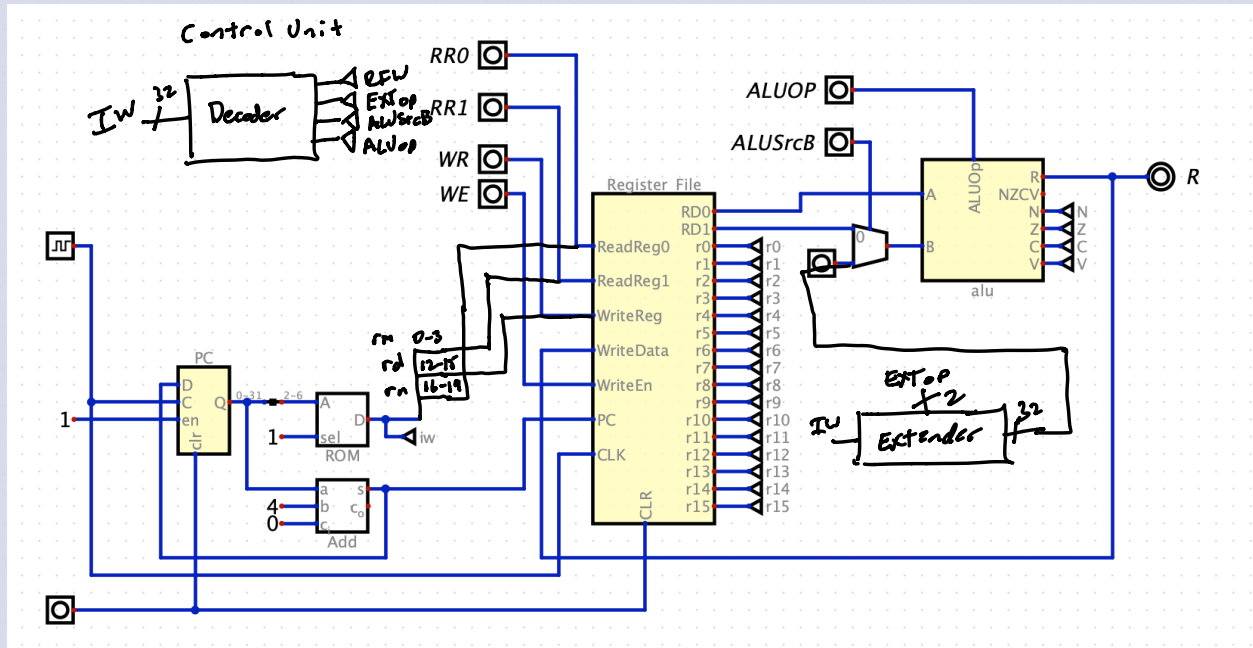


Lab10 due Fri night

Project06 due Wed Dec 2

Lab09



code

Lab10 Part 2

To Extend: add to the datapath and we need to add "control"

mov r0, #1

add r2, r0, r1
rd, rn, rm

Decoder

Like a hash table

Key \rightarrow 8 bits 27-20

Value \rightarrow output control bits

RFW EXTOP ALUsrcB ALUop

/

regfilewrite

add r2, r0, r1

	add			I	Opcode				S
	27	26	25	24	23	22	21	20	
Key	0	0	0	0	1	0	0	0 \Rightarrow	

RFW (WriteEn) 1

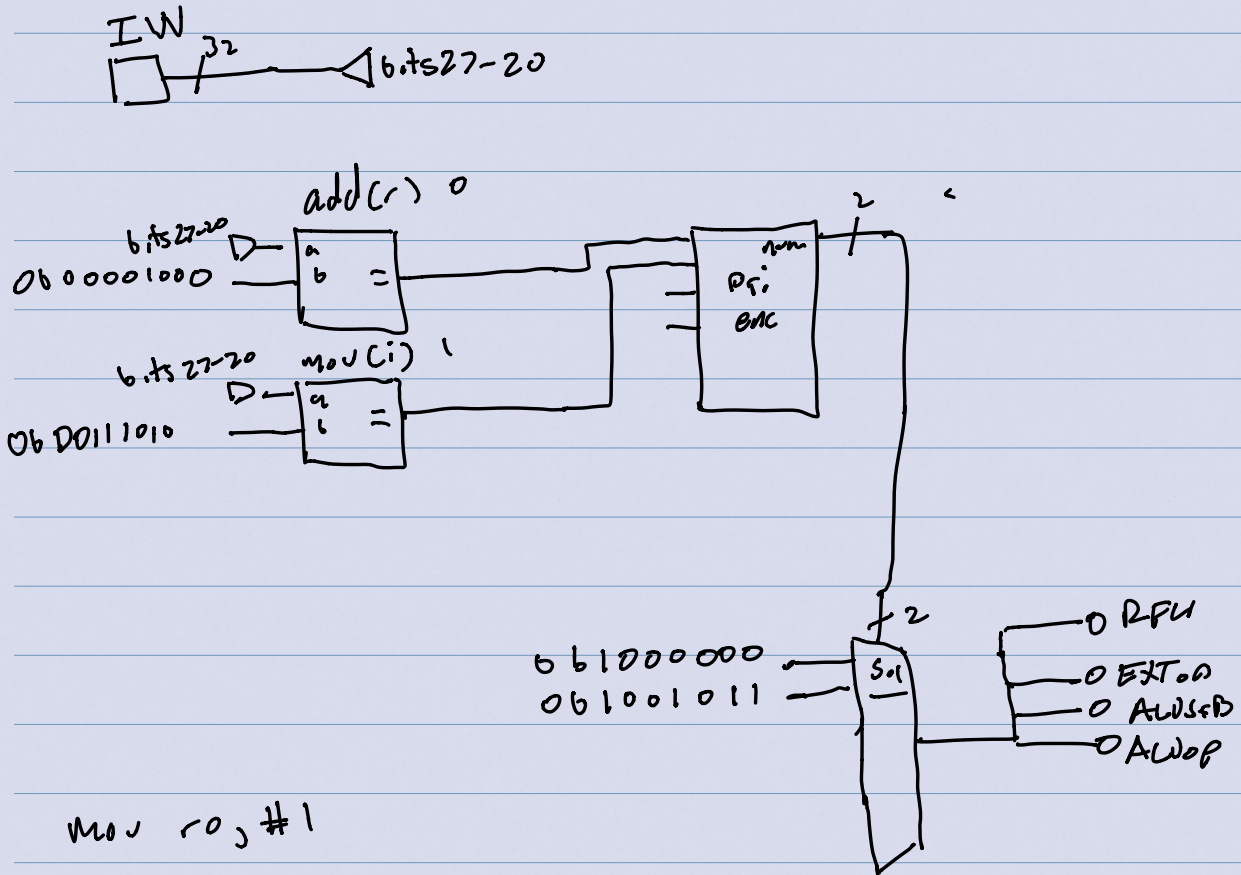
EXTOP (Extender) 00

ALUsrcB 0

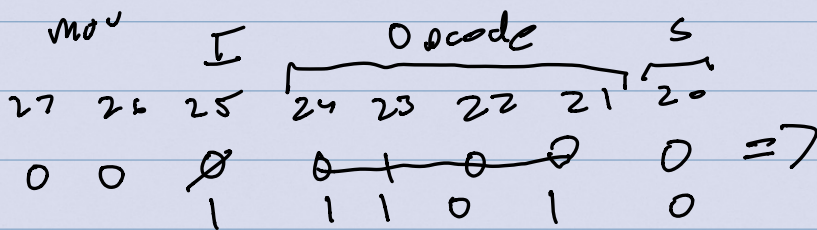
ALUop 000

0 0 0 0 1 0 0 0 \Rightarrow 1 0 0 0 0 0 0 0
 \hookrightarrow

Decoder Logic



MOV r0, #1



$\text{RPU} = 1$
 $\text{EXT}_{op} = 00$
 $\text{ALUSrcB} = 1$
 $\text{ALU}_{op} = 011$

1001011

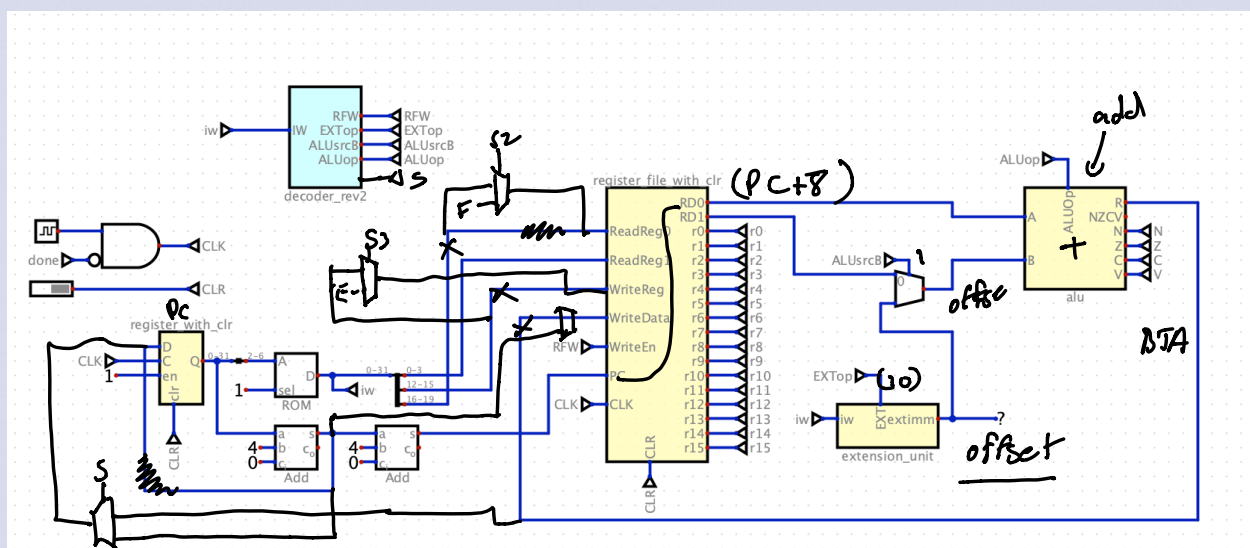
Decoder Spreadsheet

Extender

Ext101

- (00) DP immediate \rightarrow 8 bit zero extend
- (01) SDT (ldr/str) \rightarrow 12 bit zero extend
- (10) B/BL/BEQ/... \rightarrow 24 bit sign extend and mult by 4
- (11) Shift

Lab10 Part 2



BL update PC and LR
15
14
E