

## R-Type instructions:

<https://youtu.be/lqHKJyYCKXk>

- add
- sub
- or
- sll

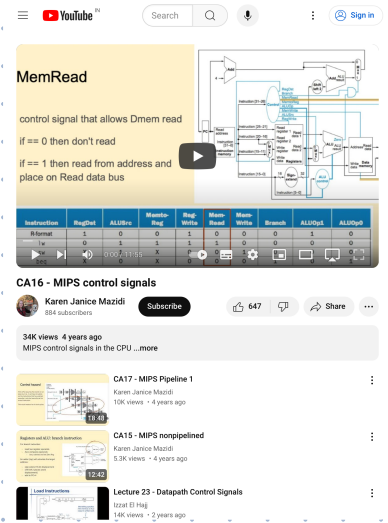
## Memory instructions:

- lw
- sw

## Branch instructions:

- beq.

## Resource:



RegWrite  
Mem Read  
Mem Write  
Branch

→ Ask Y/N question. Can the instruction do it?

RegDst  
ALUSrc  
MemtoReg

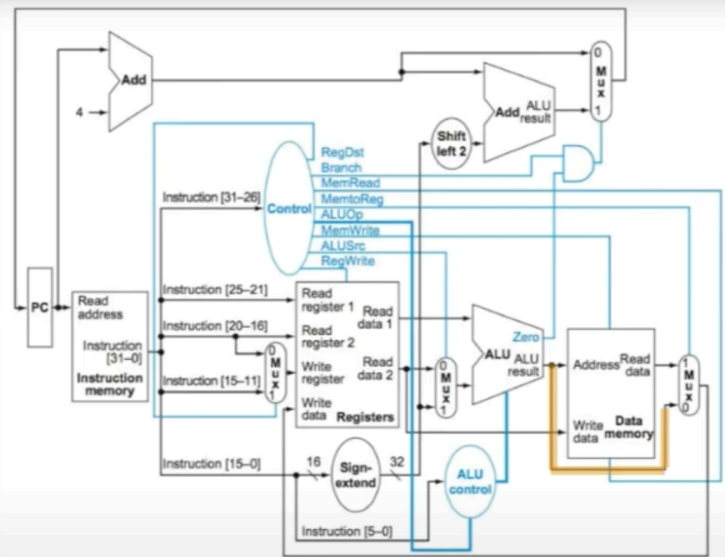
→ Look at the MUX to decide

# MemtoReg

controls MUX at far right

if == 0 then write data from ALU to register

if == 1 then write data from Dmem to register



Instruction	RegDst	ALUSrc	Memto-Reg	Reg-Write	Mem-Read	Mem-Write	Branch	ALUOp1	ALUOp0
R-format	1	0	0	1	0	0	0	1	0
lw	0	1	1	1	1	0	0	0	0
sw	X	1	X	0	0	1	0	0	0
beq	X	0	X	0	0	0	1	0	1